

Running Head: PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

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ABSTRACT

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Animal Assisted Therapy (AAT) has been documented in the United States dating back to 1944, when farm animals interacted with soldiers suffering from physical injuries or psychological trauma (Altschiller, 2011). Today, several different animals are being used in AAT for a variety of populations, such as individuals with autism, mood disorders, and other psychological concerns. Many animals have a natural tendency to bond with humans, but an effective therapy animal seeks affection and interaction with the client while promoting a warm and safe atmosphere (Nimer & Lundahl, 2007). Dogs are known to be one of the animals that can create this atmosphere, but it is reasonable to assume that not all dog breeds will elicit the same reaction. To date, no study has examined how dog breed and reputation impacts perceived therapeutic qualities of a dog (i.e., therapeutic qualities a dog is thought to possess). The purpose of the current study was to examine the initial perception of dog breeds with good, bad, and neutral reputations on perceived therapeutic qualities and state anxiety. This study aimed to use a generalizable sample, standardized measure, and include a control group to address the gap in the literature on the impact the initial perception of dog breed has on anxiety and perceived therapeutic qualities. A multivariate analysis of variance (MANOVA) was conducted to test hypotheses one and two with self-report therapeutic alliance and self-report state anxiety being the two dependent variables. Results from the MANOVA found statistically significant

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difference between reputation groups on the combined dependent variables; however, when variables were considered separately, the only difference to reach significance, was perceived therapeutic qualities. Results found that participants rated good reputation dog breeds significantly higher on perceived therapeutic qualities compared to all other conditions. No significant differences were found between bad and neutral reputation groups on perceived therapeutic qualities. This study will begin to address the gap related to the impact of dog breed on therapeutic alliance.

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INTRODUCTION

The human-animal bond (HAB) has been well documented since the domestication of animals. The human-animal bond can be defined as a relationship between a human and an animal that is bidirectional, voluntary, reciprocal, and persistent (Russow, 2002; Tannerbaum, 1995). The strength of the human-animal bond is what allowed animals to adopt roles in human families (Fine, 2015). Russow (2002) states that a bond is not actually occurring if the animal does not recognize the person; mere interaction with an animal is not enough to be a true bond. According to the American Veterinary Medical Association's (AVMA) (n.d) on HAB, emotional, physical, and psychological interactions are all part of the human-animal bond. In 2011, 62% of households in America had some type of companion animal, with dogs being the most common at 39%. According to Fine (2015), dogs have been intentionally bred to coexist and to assist humans with their day to day lives. This has in turn strengthened the human-animal bond and eventually lead to dogs being seen more as companions than an animal to use for our gain.

The relationship between humans and animals has become increasing prominent in today's society, so much so that some people refer to their dogs as their "fur babies." According to Bhattarai (2016), pets are becoming a replacement for having children, and millennials are more likely to seek companionship in pets. This bond has been around since humans started domesticating animals, mainstream media has brought attention to the direct influence an animal can have on their human companion. For example, many people are creating social media profiles specifically for their dogs and in turn advertising their perceived happiness. Now, despite the initial reason for breeding a dog, almost all breeds have a dual purpose of being a

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companion. The human-animal relationship continues to grow, and as a result the responsibilities of the animal continue to develop with it (Fine, 2015).

Dog Qualities and Benefits

According to AVMA (n.d) today, approximately 38.4% of households in the United States own a dog. Owning a dog has shown to provide benefits in some studies, such as increased physical activity (Friedmann, 1990), decreased sympathetic arousal (Friedmann, Thomas, Stein, and Kleiger (2003), stress reduction (Siegel,1990), and increased self-esteem (de Guzman, 2009). Westgarth et al. (2007) found that dog owners had more reported interactions with other people's dogs compared to those who did not own a dog. Increased exposure to other dogs and different breeds has the potential to make a person more comfortable around dogs in general (Westgarth et al., 2007). Anything from going to the dog park, taking a walk in the neighborhood, or bringing a dog to a pet store or groomer increases our interactions with other dogs. Exposure to a variety of dogs provides an opportunity for individuals to develop their own schema about a dog breed instead of defaulting to society's reputation for a dog breed. If a person has little interaction with a certain dog breed, they are more likely to assume that dog fits into the stereotype of that breed. Ultimately, one could argue that owning a dog creates the likelihood of more exposure to a variety of dog breeds and, in turn, can elicit a personal perception of those breeds that may be different from broader societal perception.

Dogs are similar to humans in that they have associative learning capabilities and emotions drive most of their decisions (Bradshaw, 2011). Dogs are able to think beyond the present moment, a skill that is derived from their predatory wolf nature in order to predict what could potentially happen next (Bradshaw, 2011). Dogs have also been found to outperform nonhuman primates in object choice tasks, indicating that a dog, even better than a non-human

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primate, can respond to human communicative cues without explicit training (Reid, 2009). This intellect is another reason why dogs are a suitable choice for animal assisted therapy (AAT) and animal assisted interventions (AAI).

Besides the intelligence, dogs are one of many animals that are keen observers and can often pick up on human reactions through their extraordinary ability to read signs and emotions (Lundqvist, Carlsson, Sjudahl, Theodorsson, & Levin, 2017). A dog can sense when their owner is angry, often leading to them putting their tail between their legs or going to hide. They are also able to perceive danger, indicated by putting their head down or rolling over onto their stomach to show submission. Dogs exhibit behavior that humans interpret as affectionate, friendly, and happy. When a dog wags their tail or licks someone, that person will likely interpret that behavior as being happy or affectionate, respectively. As stated above, HAB is reciprocal by definition. A positive response from a dog often leads to a positive response back to the dog, and so on (e.g., petting a dog that then licks in return and that leads to giving the dog more attention). The person's interpretation of the dog's behavior is just as important as how the dog interprets the person's behavior.

The role of animals, and more specifically dogs, has evolved over the past century and even more so in the past decade. Dogs are being incorporated into roles for military use, police dogs in detection centers, as guide dogs, and helping with a variety of medical conditions such as sensing changes in blood sugar for diabetics. They also take on roles in schools for being present during child reading groups and are even companions for our family. Other roles include work-related such as service, therapeutic, and emotional support.

Dogs are also becoming more prominent in therapeutic settings. Dogs are an ideal choice to partner with a therapist because they are known to reciprocate, tend to be more interactive, are

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intelligent, and are able to read emotions (Bradshaw, 2011). Dogs are also one of the only animals who are able to fully affiliate with two separate species. Most people have had exposure to a dog at one point or another since dogs are the most common companion animal in an American household. Appropriate interactions with uncommon animals might be difficult due to the lack of exposure, whereas almost everyone has had exposure to a dog at some point in their life making a dog less novel and more ideal for a therapeutic setting. Having prior exposure to a dog will ideally limit the adjustment period for a client who is entering therapy for the first time and be less likely to create another obstacle for the client.

Through animal assisted therapy and animal assisted intervention, animals are able to enter into therapeutic settings. Today, horses, dogs, cats, rabbits, and an abundance of other animals are working with professionals to assist in therapy. A meta-analysis found that of the 47 studies that were examined, dogs were most commonly used (Nimer & Lundahl, 2007). This is likely due to the practicality of dogs being domesticated, an appropriate size for therapy rooms, easily accessible, and easily trained. This meta-analysis also found that dogs had a higher effect size compared to other animals, indicating that dogs are more salient and have a higher chance of being effective in treatment.

Animal Assisted Interventions/Animal Assisted Therapy

Animal Assisted Intervention or Animal Assisted Therapy has been documented in the United States dating back to 1944, when farm animals interacted with soldiers suffering from physical injuries or psychological trauma (Altschiller, 2011). Today, dogs have been implemented into many different therapeutic settings, including psychiatric settings, hospitals, nursing homes, schools, rehabilitation facilities, prisons, and many others (Granger & Kogan, 2006). Many animals have a natural tendency to bond with humans, but an effective therapy

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animal seeks affection and interaction with the client while promoting a warm and safe atmosphere, as dogs are known to do (Nimer & Lundahl, 2007).

Animal Assisted Interventions and Animal Assisted Therapy are commonly used interchangeably in the plethora of literature that exists regarding animals being used as a support for humans. According to Jegatheesan (2015), Animal Assisted Intervention is defined as “a goal-oriented intervention that intentionally includes or incorporates animals in health, education and human service for the purpose of therapeutic gains in humans” (p. 4). An example of Animal Assisted Intervention would be implementing the presence of a dog for the first session of group therapy targeting social anxiety to increase initial conversation between members. According to the same source, Animal Assisted Therapy is defined as “a goal oriented, planned, and structured therapeutic intervention directed and/or delivered by health, education, and human service professionals. Intervention progress is measured and included in professional documentation” (p. 4). An example of Animal Assisted Therapy would be for the goal of a session to include the client petting a dog as they disclose a traumatic event. Based on this definition, individuals might use these definitions synonymously, but in fact AAI and AAT can be differentiated by the intent for the use of the animal and the duration of the interaction. AAT is used for psychotherapy alone and takes places over multiple sessions, whereas AAI can be used in other domains such as physical therapy.

Although AAT/AAI was first documented in the mid 1900’s, it was not until the early 1990’s that journals started to publish outcome research on the benefits of AAT/AAI. In 2008, the American Psychological Association (APA) formed a new section formally addressing AAT and the American Counseling Association governing council was soon to follow in 2009 (Chandler, 2012). With formal recognition from two major associations in psychology, research

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in mental health with relation to AAI/AAT has expanded. Researchers started to explore safe and effective AAT methods.

Outcome Research for Dogs

AAI/AAT has been found to reduce symptomatology in children with Attention-Deficit/Hyperactivity Disorder (ADHD) (Schuck, Emmerson, Fine, & Lakes, 2015), lower anxiety and increase trust in survivors of trauma (Mims & Waddell, 2016), and was associated with increased treatment progress, decreased institutional infractions, and improvement of social sensitivity in prisons (Fournier, Geller, & Fortney, 2007). Other research suggest that AAT/AAI can reduce physiological and emotional stress responses, depressive symptoms (Brickel, 1984; McVarish, 1994; Struckus, 1989; Wall, 1994) and can help build communication and interpersonal functioning (Schneider & Harley, 2006).

It is important to collect objective measures such as physiological responses because biological changes can be occurring that cannot be communicated through self-report alone and is not falsifiable. A study by Menna et al. (2019), found a significant difference in cortisol levels for Alzheimer's patients who participated in the animal assisted therapy group compared to the control group. Participants who had interactions with a dog had lower cortisol levels compared to those who did not have any contact with a dog. Another study found significant decreases in epinephrine levels and norepinephrine levels for an animal assisted intervention that included a handler and their dog (Cole, Gawlinsk, Steers, & Kotlerman, 2007). The physiological benefits of decreased cortisol levels, epinephrine, and norepinephrine have been associated with decreased anxiety and other internalizing mental illnesses (Staufenbiel, Penninx, Spijker, Elzinga, & Rossum, 2013)

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AAT/AAI has also been associated with lower levels of anxiety. Shiloh, Sorek, and Terkel (2003), found that just petting an animal for a short period of time, even if that animal was not soft, reduced anxiety. Researchers compared soft and hard-shelled animals against toys and found that it was the quality of being alive rather than the texture of the animal that reduced an individual's level of anxiety. Similarly, a review of AAT for trauma survivors found a common theme of reduced anxiety in four the studies they examined (O'Haire, Guerin, Kirkham, 2015). Of those four articles, two found significantly reduced anxiety following animal assisted therapy compared to the control that did not include any animal (Dietz et al., 2012; Kemp et al., 2013). One found that 80 female participants reported feeling less anxious when watching a traumatic video with a live dog compared to a stuffed dog or when watching the video alone (Lass-Hennemann et al., 2014). The last study examined AAI with farm animals and found only short-term effect on anxiety (Woolley, 2004). Although the current findings seem promising, the following section highlights the major criticism and limitations that exist in the current literature.

Current Limitations of AAI and AAT Research

The AAI/AAT literature is extensive, but a majority of the research contains research deficiencies. According to Herzog (2014) many articles have insufficient sample sizes to produce reliable results, include a heavy emphasis on self-report measures while lacking objective measures, do not have a non-treatment control group, and lack standardized procedures that are necessary for replication. Herzog (2011) also states that the evidence in the literature is overwhelmingly anecdotal comments with inadequate authentic empirical support. He references the "file drawer effect," or the tendency for negative research outcomes to never be published. Although this issue is not exclusive to AAT literature, it is still a pressing concern.

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Methodological design of many animal assisted therapy research that lack replicable measures and standardization. A meta-analysis by Nimer and Lundahl (2007) reviewed 37 peer-reviewed studies and 12 dissertations. Of these studies, approximately half of them did not include a control or comparison group. Researchers concluded that there continues to be a need for carefully designed research studies that highlight best practice protocols and studies that explain the mechanisms that enable the changes in behavior. One of these best practices is to include effect size to prevent any misleading results. A study can yield statistically significant results and still have a small effect size. This is often the case for studies in AAT/AAI, indicating slight practical therapeutic impact is likely (Herzog, 2015).

Limitations including using a quasi-experimental design and lack of validated measures (Fournier, Geller, & Fortney, 2007), small sample size and limited control over the intervention (Krause-Parello & Gulick, 2015), and self-report data through reflective interviews with the participants (Hemingway, Meek, & Hill, 2015) have all been reported. There are likely to be limitations in any study. The common theme of small sample size, self-report measures being predominantly used, and the lack of control group makes the AAT literature problematic. Sample sizes are small because participants are often real-life clients with mental health problems, making it hard to recruit subjects. With these important criticisms and limitations in mind, the subsequent sections include a brief overview of therapeutic alliance, dog breeds, and how it relates to a positive therapeutic experience.

Therapeutic Alliance

Therapeutic alliance refers to a positive working relationship between a healthcare professional and a client in hopes to produce beneficial change. Increased social development and communication have been two benefits found in AAT and AAIs studies. Effective

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communication between the client and the therapist is a key aspect to a positive working relationship. The personal characteristics of therapists such as warmth, trustworthiness, confidence, respect, honesty, flexibility, interest, and openness have all been found to contribute to a positive therapeutic alliance (Ackerman & Hilsenroth, 2003). Despite a therapist's treatment modality or theoretical orientation, therapeutic alliance is found to be an imperative universal component for all theoretical orientations (Anderson et al., 2019). For example, Rogerian theory is almost exclusively based on client's feelings and unconditional positive regard. On the opposite side, behavioral therapy exclusively focuses on a client's specific behaviors. Both theories still incorporate therapeutic alliance to ensure a successful treatment outcome.

Research has indicated the importance of a positive therapeutic alliance in predicting treatment outcomes (Sharf, Primavera, & Diener, 2010). The therapeutic alliance has also been found to predict attrition rate, meaning the better the alliance the more likely a client will return to therapy (Anderson, Bautista, & Hope, 2019). Thus, the higher a client rated the alliance, the more likely they were to return for subsequent sessions. Krupnick et al. (1996) found a strong positive correlation between therapeutic alliance and treatment outcomes independent of the therapist or treatment, suggesting that the alliance between therapist and client is one of the more important factors in producing a positive outcome for the client. According to Bachi and Parish-Plass (2017), the therapeutic alliance is now accepted as the most critical factor in psychotherapy. They go on to state that involving an animal in therapy can help facilitate the creation of the therapeutic alliance.

Part of the therapeutic process includes communication between the client and the therapist. AAT and AAI have been shown to assist in a client's communication and social development (Schneider & Harley, 2006), indicating that implementing an animal could make

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for a quicker, more organic start to the therapeutic alliance. Amerine and Hubbard (2016) found that the introduction of an animal in therapy led to an increased sense of comfort and safety, two key components to building a positive therapeutic alliance. The presence of an animal has also been shown to make strangers and therapists to seem more trustworthy and be more comfortable disclosing information (Jones, Rice, & Cotton, 2019). As previously noted, the presence of a dog has shown to reduce a cortisol level resulting in a decrease in anxiety (Bachi & Parish-Plass, 2017). This is especially important for at-risk clients who are already experiencing high levels of anxiety and may not want to attend therapy. Additionally, AAT has been associated with increased prosocial behaviors and motivation to continue with therapy (Schuck, Emmerson, Fine, & Lakes, 2015).

Current research displays the importance of therapeutic alliance on a client's success in therapy (Green, 2009). Introducing an animal into therapy has revealed beneficial results based on the studies mentioned above (Amerine & Hubbard, 2016; Bachi & Parish-Plass, 2017; Nimer & Lundahl, 2007). Although many animals have been found to be beneficial in therapy, not all of them are practical. This is no less true for dogs. It can be assumed that it is not practical to use all dog breeds in therapy despite dogs being an appropriate size for therapy rooms, easily accessible, and easily trained. Based on societal perceptions and expectations, dogs can elicit a positive or negative reaction from clients.

Dog Breeds in Therapy

Therapy is a collaborative treatment option to assist individuals in overcoming obstacles or mental illness that are causing distress. The most successful therapeutic outcomes contain a good working relationship between the client and the therapist (Green, 2009). Each client is unique with different strengths and weaknesses, personality qualities, history, and symptom

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presentation. While it may be assumed that a dog may be beneficial in assisting the therapist in the client's healing process, this may not be inherently true. When a client comes into therapy, they do not need any additional obstacles to contend with when working with their therapist. Research shows that adding a dog to the therapeutic environment can be beneficial, but it is reasonable to assume that not all dog breeds will elicit an initial positive reaction based on the reputation society has placed on that breed or an individual's personal history. The dog may be approachable but if the client has a negative preconceived notion about this dog breed it has the potential to be a barrier to creating a strong therapeutic alliance. Conversely, if the client believes that the dog assisting in therapy has a good reputation, it is likely that the therapeutic alliance will be built more quickly.

Almost all breeds have a dual purpose of doing the jobs they were bred to do and being a companion. It should be noted that a dog that is the right fit for a family might not be an appropriate fit as a therapy dog. Other assumptions that are made relate to the original purpose that the dog was bred to do. Seven categories are used to group dog breeds based on the original purpose of the breed. The categories include sporting, hounds, working, terriers, toy, non-sporting, and herding. For example, hounds were originally used for hunting in wooded areas, sporting dogs were used to assist with hunting around a body of water, and herding dogs were used to help on farms (American Kennel Club, n.d).

The popularity of the dog breed does not necessarily align with the stigma placed on that breed. According to Pit Bull info (2019), approximately 20% of dogs that are owned fall into the Pit Bull terrier group, but this breed is still banned from one of the most prominent pet stores in the US, PetSmart. Pit Bulls are also encompassed in breed-specific legislation and breed-neutral legislation. Pit Bulls have become a popular companion animal in recent years, but many people

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might not have had direct exposure to the breed before this latest fad. They were originally used for bull baiting and dog fighting and are now often regarded as aggressive dogs and are found on almost all restricted breeds list. According to Coren (2014) the most blacklisted dog breeds include Rottweilers, Mastiff, Siberian Huskies, Pit Bull, and Terriers to name a few. These dogs have landed on this list due to being known as aggressive or dangerous and insurance companies often deny coverage for an individual's home if they own a dog breed that is on their restricted list.

On the other hand, other dog breeds have only positive reputations associated with them, likely due to large agencies such as the American Kennel Club (AKC) advertising certain breeds as family dogs. These breeds are also known to have qualities such as being calm, loving, and cooperative. Retrievers, for example, were bred to assist humans and have maintained this behavior in their new companion role. Good reputation breeds include Labrador Retriever, Golden Retriever, Collie, and Cavalier King Charles. Additionally, some breeds have a mixed reputation due to their qualities and being perceived as good and bad. Dogs such as German Shepherds and Dalmatians are seen in family settings but also in more structured areas such as drug sniffing dogs or rescue dogs and tend to have higher energy.

The reputation of a dog can impact or delay the therapeutic process. The goal of therapy is to help the client overcome any obstacle or distress they may be facing. A therapist's job is to help the client but also to ensure not to create any additional challenges. A good therapeutic alliance is needed for a positive therapeutic outcome and research has shown that a dog-therapist relationship can help build that alliance (Amerine & Hubbard, 2016). Adding a dog without considering other factors can be problematic and should be considered when promoting a healthy, safe environment, and not as a potential obstacle for treatment. To date, no study has

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addressed, explored, or examined the perception dog breeds in a therapeutic setting. A study is needed to inform therapists who use AAT/AAI, on the potential issues with certain dog breeds in the dog-therapist relationship.

Purpose

The purpose of this study is to examine the initial perception of a dog breeds with good, bad, and neutral reputations on perceived therapeutic qualities and state anxiety. This study aims to use a generalizable sample, standardized measure, and include a control group to address the gap in the literature on the impact the initial perception of dog breed has on anxiety and perceived therapeutic qualities.

Previous research has identified specific factors associated with therapeutic alliance that include nonjudgmental, approachable, comfort, hopeful, intuitiveness, and calming (Ackerman & Hilsenroth, 2003). In the current study, these factors are referred to as perceived therapeutic qualities. Thus, it is predicted that good reputation dogs will result in higher scores, compared to the control group, on the measure of the perceived therapeutic qualities. Previous research has also shown that the presence of a therapy dog tends to lower anxiety and increases mood, thus it is predicted that the good reputation group will produce lower levels of state anxiety (Shiloh, Sorek, & Terkel, 2003). Finally, past trauma with a dog and the extent to which a person defines themselves as a “dog person” will be incorporated to explore the impact these demographics has on the perception of a dog breed.

Tested Hypotheses

1a. The good reputation group will report higher levels of all self-report perceived therapeutic qualities than the neutral reputation, bad reputation, and control group.

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1b. There will be no difference between the neutral and bad reputation groups on all levels of self-report perceived therapeutic qualities.

1c. All groups will report higher levels for each of the self-report perceived therapeutic qualities compared to the control group.

2a. The good reputation group will report lower levels of self-report anxiety than the neutral reputation, bad reputation, and control group.

2b. The neutral reputation group will report lower levels of self-report anxiety than bad reputation and control group.

2c. All groups will report lower levels of self-report anxiety compared to the control group.

METHOD

Participants

The sample consisted of individuals from the community and undergraduate students from Western Carolina University at least 18 years of age. A power analysis was conducted using G*Power 3.1.9.2 (Faul, Erdfelder, Buchner, & Lang, 2009). Assuming a moderate effect size in the population ($f^2 = .0625$) and a minimum acceptable level of power of 0.8, a minimum number of 158 subjects was required to detect true differences between the groups. Participants were recruited from Western Carolina University's general psychology course (Psychology 150) via the undergraduate research participation pool (SONA) and received research credit for participation. SONA is an online based scheduling program for college students to participate in research. Other participants were recruited through social media and received no compensation for their participation. Participants accessed the Qualtrics link through Reddit and other social media sites.

Measures

Alliance Measure

Perceived Therapeutic Qualities. Six perceived therapeutic qualities were used to measure therapeutic alliance. Participants were asked “Is this dog...” *nonjudgmental, able to sense how I’m feeling, and approachable.* They were also asked “This dog makes you feel ...” *hopeful, calm/relaxed, and safe around this dog/comfortable.* Each item is responded to using a 6-point ordered response scale format with responses 1 (*Strongly Disagree*) to 6 (*Strongly Agree*).

State Anxiety

State-Trait Anxiety Inventory for Adults. The State-Trait Anxiety Inventory for adults (STAI-AD; Spielberger, 1977) is a 40-item self-report scale that consists of 20 question on measuring state anxiety and 20 question to measure trait anxiety (Spielberger, 1977). Items on the state anxiety measure are “I feel calm” and “I am tense.” Response options are 1 (*Not at all*) to 4 (*Very much so*) and recoded so that higher scores reflect higher state anxiety. Items on the trait anxiety measure are “I feel pleasant” and “I feel satisfied with myself”. Response options are 1 (*Almost Never*) to 4 (*Almost Always*) and recoded so that higher scores reflect higher trait anxiety. For this study, the participants were instructed to complete all 40 questions. The responses were compared to a scoring key to find a total anxiety score for each participant compared to normative data.

Background

Demographic Survey. An online-based demographic survey was given to all participants at the end of the survey. Demographic information gathered included age, sex, dog ownership, and specific breed(s). Participants were also be asked to rate how much they like dogs, how they

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feel about others' dogs, how much interaction they have with dogs on a daily basis, and if they have any previous negative experiences with dogs including specific breeds.

Procedures

Western Carolina University participants logged into SONA to complete the online surveys. Participants from the community were able to access the Qualtrics link via reddit and other social media sites. Once they clicked on this link an informed consent was provided. After participants agreed to the informed consent Qualtrics randomly assigned each participant to the good reputation (Labrador Retrievers, Golden Retrievers, Collies, Cavalier King Charles, Corgis, and Maltese), neutral/mixed reputation (German Shepard, Dalmatian, Bull Dog, Poodle, Beagle, and Dachshund), and bad reputation (Rottweiler, Mastiff, Pit Bull, Husky, Chihuahua, and Jack Russell), or control group (Boer, Saanen, Anglo-Nubian, Toggenburg, Nigerian Dwarf, Alpine goats). They then viewed 6 pictures of dogs or 6 pictures of goats and rated the animal in the picture on the six perceived therapeutic qualities. Pictures were retrieved from Google and all picture the animal in neutral position that does not include humans, leashes, or active positions. The animal is full grown in all pictures, but the breed of dog and goats do range in size. Participants then completed the State-Trait Anxiety Inventory for adults and the demographic questions. Finally, participants were thanked for their participation and the survey concluded. Western Carolina undergraduate students were awarded their half credit hour of participation. The name of the study was changed to "Perception of Therapy" to control for participation from only "dog people."

Analyses

Multivariate normality was calculated using Mahalanobis (1936) distances, linearity of relationships via scatterplots (for content validity; e.g., Cureton, 1951), multicollinearity via a

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correlation matrix, and Box's test of equality of covariance matrices. These analyses were completed prior to running a multivariate analysis of variance (MANOVA). A MANOVA was calculated to test hypotheses one and two with self-report therapeutic alliance and self-report state anxiety being the two dependent variables.

RESULTS

Participants for the current study consisted of 81 males (24.7%), 243 females (74.1%), and 4 individuals who did not identify as male or female (1.2%). Three hundred forty-six participants completed the survey, however; 18 subjects were removed due to missing data (7 in the good, 2 in the bad, 4 in the neutral, and 5 in the control group) for a total of 328 subjects. Participants included undergraduate Introductory Psychology students from Western Carolina University and individuals recruited via Facebook and Reddit. Data collection took place from 24 September 2019 to 24 January 2020. Participants ranged in age from 18 to 72 years, with an average of 21.94 years and a mode of 18 (50.6%). Cronbach's alpha (1951) was calculated to determine if the survey results met the minimum 0.8 acceptable level of reliability. All six of the perceived therapeutic qualities and the self-report state anxiety scales were well above the minimum level of accepted reliability.

A one-way between groups multivariate analysis of variance (MANOVA) was performed to test hypothesis 1 (a,b, and c) and 2 (a,b, and c). Two dependent variables were used: perceived therapeutic qualities and state anxiety. The independent variable was dog reputation (i.e., good, bad, neutral, control). Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers (Mahalanobis,1936), homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted. Violations included:

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six outliers in the perceived therapeutic qualities' dependent variable and five outliers in the state anxiety dependent variable, two subjects had Mahalanobis distances above critical value of 10.60, lack of pattern in the scatter plot, and Box's test of sphericity in the SPSS output was significant ($p = .015$). Adjustments for the aforementioned violation were a reduction from alpha .05 to .01 and the use of Wilks' Lambda (1932).

There was a statistically significant difference between reputation groups on the combined dependent variables, $F(6, 646) = 17.40$, $p < .001$; Wilks' Lambda = .78 (Wilks, 1932); $\eta^2 = .14$, a small-to-moderate effect size (Cohen, 1966) (see appendix 2.2). When the results for the dependent variables were considered separately, the only difference to reach significance, was perceived therapeutic qualities, $F(3,324) = 35.104$, $p < .001$, $\eta^2 = .25$, a moderate effect size (Cohen, 1966) (see appendix 2.2). Hypothesis one (a,b ,and c) were all supported but hypothesis two (a, b, and c) were not. An inspection of the mean scores indicated that the good reputation group reported higher scores on perceived therapeutic qualities ($M = 5.20$, $SD = .09$) than the bad reputation group ($M = 4.66$, $SD = .08$), neutral reputation group ($M = 4.72$, $SD = .09$), and control group ($M = 3.96$, $SD = .09$).

A one-way between-subjects ANOVA was conducted to further investigate the significant difference between groups on perceived therapeutic qualities in the good, bad, neutral, and control conditions. There was a significant effect between reputation groups on perceived therapeutic qualities at the $p < .05$ level for the four conditions $F(3,324) = 35.70$, $p < .001$ (see appendix 2.3). Post hoc comparisons using Tukey's Honestly Significantly Difference test (1953) test indicated that the mean score for the good reputation condition ($M = 5.20$, $SD = .09$) was significantly different than the bad reputation ($M = 4.66$, $SD = .08$), $p < .001$, neutral reputation ($M = 4.72$, $SD = .09$), $p = .001$, and control condition ($M = 3.96$, $SD = .09$), $p < .001$

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(see appendix 2.3). In addition, both the bad reputation and neutral reputation conditions also significantly differed from the control condition, $p < .001$; however, the bad reputation and neutral reputation conditions did not significantly differ from one another, $p = .95$ (see appendix 2.3).

DISCUSSION

The current study found important information to add to the AAT/AAI literature; specifically, it began to address the gap related to the impact of dog breed on therapeutic alliance and treatment outcomes. Results show that individuals rate good reputation dog breeds significantly higher on perceived therapeutic qualities compared to bad reputation dogs, neutral reputation dogs, and controls (goats). There was no significant difference between bad and neutral reputation groups on perceived therapeutic qualities; however, it should be noted that bad and neutral groups were significantly higher than the control group on perceived therapeutic qualities. This indicates that being a certified therapy dog is not necessarily enough, although it is likely better than other animals, such as goats. In other words, dog breeds are perceived differently with regard to perceived therapeutic qualities. There was no significant difference in self-report state anxiety among the groups. In retrospect, this finding was unsurprising due to the current study only including pictures of each dog breed. A different result may have been found if the study was done in vivo with certified therapy dogs of each breed.

Results indicate that bad (e.g., Pit Bulls) and neutral (e.g., German Shepard) reputation dogs are rated significantly lower on perceived therapeutic qualities compared to good reputation dogs (e.g., Retrievers). These findings align with the intuitive idea that inherited qualities of a dog breed do impact the perception of that breed. These qualities do not necessarily align with their companion role. As used in a prior example, Pit Bulls have a locked jaw, making them

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suitable for dog fighting and bull baiting, but this does not hinder many Pit Bulls from being good family dogs today (Pit Bull info, 2019). On the other hand, Golden Retrievers were bred to assist hunters in retrieving birds from bodies of water due to their webbed feet (American Kennel Club, n.d). Golden Retrievers have been assisting humans for decades, making the transition to a family companion or therapy dog a seamless one. Today, most dogs are bred to be human companions and family dogs, but that does not negate their inherent or perceived qualities resulting in bias and stereotypical generalizations by individuals and the general population.

These results are an important contribution to the literature not only because this is the first study of its kind, but also serves to inform any therapist or handler who incorporates AAT/AAI to assist individuals with their physical or mental health. Developing an awareness and acceptance that these perceptions exist can help therapists openly address these perceptions with potential clients. A study done by Saxon, Firth, and Barkham (2016) found that the modal number of sessions a client attended was two, highlighting the importance of establishing therapeutic alliance and treatment engagement during initial session(s). A negative perception of the dog assisting in therapy has the potential to hinder therapeutic alliance enough that the client may not return. While this is unlikely given most clients seek out or at the very least are made aware of the incorporation of AAT/AAI at the outset of treatment, the perception of a particular therapy dog has the potential to negatively impact therapeutic alliance and engagement resulting in early termination of treatment. Many therapists include a picture and/or blurb of their therapy animal on their profile but those who do not, should consider doing so.

This is not the case for handlers or therapist who incorporate AAT/AAI in universal (e.g., hospitals or school) or group therapy settings. Given the increase of dogs in therapeutic and

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universal settings, it is highly likely that therapy teams will encounter individuals with preconceived perceptions of certain dog breeds, as seen in the results of this study.

Group therapy has many benefits and can be a great cost-effective alternative to individual therapy, but a drawback can be the multitude of different perceptions and past experiences with certain dog breeds. To combat these dilemmas, handlers/therapists may want to consider a dog breed with a positive reputation to avoid additional obstacles with therapeutic alliance, or at the very least be aware that this may be an issue. It is recommended that handlers/therapist be open and transparent with their clients about the dog breed assisting with AAT/AAI. This is not to say that a bad or neutral reputation dog will not be an excellent therapy dog, but these results indicate that those breeds are not rated as high at initial sight.

Acknowledging Current Limitations of AAI and AAT Research

The plethora of animal assisted therapy and animal assisted intervention literature continues to grow, but many researchers have yet to address the common critiques. According to Herzog (2014), much of AAT/AAI literature lacks large samples, control groups, objective measures, standardize procedures. With this in mind, the goal of the current study was to account for these insufficiencies while also addressing a gap in the literature related to reputation of dog breeds and the potential impact of breed in a therapeutic setting. To date, no study has examined the relationship between dog breeds and therapeutic alliance. Research in this area is imperative since therapy dog certifications do not have breed restrictions, although it is known that not all dog breeds are perceived positively.

The current study doubled the ideal number of participants as assessed by G*Power (Faul, Erdfelder, Buchner, & Lang, 2009), addressing the insufficient sample size issue. The current study also included a control group (i.e., goats). As mentioned above, a meta-analysis

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conducted by Nimer & Lundahl (2007) examined 49 studies that met criteria. Of the studies examined, less than half included a control group ($n = 21$). Of those 21 studies that did include a control group, the range of participants ranged from 5-40 participants. A more recent review of the AAT literature, specifically related to trauma interventions, done by O'Haire, Guerin, Kirkham (2015) examined ten studies of which only half included a control or comparison group ($n = 5$). The participants of these ten studies ranged from 1-153, with only three of those studies exceeding 30 participants. Although the current study did address the small sample size and control group issues, it does not include objective measures. This limitation will be discussed below.

Limitations

As mentioned above, Herzog (2014) states that objective measures are missing from the AAT/AAI literature. This is also true of the current study. Since the current study is the first of its kind, the goal was to gather as large of a sample size as possible to obtain a larger effect size and increase generalizability. Online administration was used to obtain this goal, but it also added the limitation of lacking objective measures. The use of objective measures instead of self-report measures is beneficial in that there is no room for interpretation bias allowing for higher accuracy when comparing subjects.

Another limitation that came with the online administration was the use of pictures of different dog breeds. Pictures can elicit feeling, thoughts, and perceptions but not to the extent that in vivo interaction does. Participants may have rated each dog breed differently on perceived therapeutic qualities if each dog breed was represented in person. It is also possible that self-reported state anxiety would be different if this study included actual interactions with specific dog breeds. Studies mentioned above, such as Mims and Waddell (2016), Staufenbiel et. al.

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(2013), Bachi and Parish-Plass, (2017), and Shiloh, Sorek, and Terkel (2003) all found decreased anxiety symptoms when AAT was incorporated.

Finally, the relatively young sample size should also be considered a limitation. Although the study included a range of 18-72 years old, the mean age was only 21.94 years old. Like clothes or music, dog breeds also go through generational popularity. For example, according to the American Kennel Club some of the most popular dog breeds in 2019 were Retrievers, German Shepherds, French Bulldogs, Poodles, and Corgis (Kriss, 2019). Some of the most popular dog breed from the 1970's were Doberman Pinschers, Beagles, Poodles, Dachshunds, and Irish Setters (American Kennel Club, n.d). Some dog breeds have maintained popularity over time, most of them being the good reputation breed, but others fluctuate with generational phases. This may have been a factor in the high ratings for good reputation dogs. One benefit to the current research being the first of its kind is that there is much room for improvement and future directions.

Future Directions

Research into classifications of dog breeds and the impact they have on therapeutic alliance needs to be further investigated. There is a major gap in the research related to this topic, with this study to be the first to explore the perception of different dog breeds. Pet Partners (n.d.), one credible group that certifies therapy teams, report that 94% of their therapy teams include a dog. Dogs have been a key component in AAT/AAI for decades with little consideration to how the breed of a dog may impact therapeutic alliance. A replication study would be beneficial to the literature in hopes to find similar results. Future researchers should also address the other limitations in the current study, including in person administration, incorporating objective measures, and a sample that captures a variety of ages.

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The use of pictures in the current study allowed for online administration but an important future direction would be to examine outcomes based on interaction between the participant and the dog (therapist-dog team). The potential to collect objective data such as physiological measures is beneficial to the literature. Physiological responses might include saliva samples to measure stress through cortisol release and heart rate monitors to measure comfortability and potential anxiety when interacting with a dog. Other examples of potential observable, objective measures include word count for the participant and amount of physical interaction with the dog. Word count, for example, can be used to examine client's comfortability to disclose information with different dog breeds. A qualitative component should be considered for this scenario to examine content of the disclosure as a higher word count does not indicate richer content.

Based on the current findings, another future direction is to examine individual therapeutic alliance versus group therapeutic alliance with different dog breeds. As mentioned above, a client who has awareness of the dog breed they will be working with is unlikely to experience obstacles or barriers to treatment due to the breed of the dog. In fact, they will likely seek out AAT and AAI if they are "dog people" and feel more comfortable with a dog present. Individuals in hospitals or school who are receiving visits from a therapy dog and therapist/handler do not have the luxury of always knowing or choosing the breed of dog that will be visiting and/or working with. This can lead to an obstacle in treatment when the purpose of incorporating a therapy dog is to improve outcomes. Well-designed research in this area would be beneficial to the emerging literature focused on how dog breeds impact therapeutic alliance.

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REFERENCES

- Ackerman, S. J., & Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting the therapeutic alliance. *Clinical Psychology Review, 23*(1), 1-33.
doi:10.1016/S0272-7358(02)00146-0
- Altschiller, D. (2011). *Animal-assisted therapy*. Santa Barbara, CA: Greenwood.
- American Kennel Club. (n.d.). Retrieved from <https://www.akc.org/>
- American Pet Products Association. (2011) National pet owners survey. Greenwich, CT: *American Pet Products Association*. 2011-2012.
- American Veterinary Medical Association. (n.d). In U.S pet ownership & demographics sourcebook (ed.) *American Veterinary Medical Association*.
- Amerine, J. C., & Hubbard, G.B, (2016). Using animal-assisted therapy to enrich psychotherapy. *Advances in Mind-Body Medicine, 30*, 11-18.
- Anderson, K. N., Bautista, C. L., & Hope, D. A. (2019). Therapeutic alliance, cultural competence and minority status in premature termination of psychotherapy. *American Journal of Orthopsychiatry, 89*(1), 104–114. <https://doi-org.proxy195.nclive.org/10.1037/ort0000342>
- Bachi, K., & Parish-Plass, N. (2017). Animal-assisted psychotherapy: A unique relational therapy for children and adolescents. *Clinical Child Psychology and Psychiatry, 22*(1), 3-8. doi:10.1177/1359104516672549
- Bhattarai, A. (2016). Millennials are picking pets over people. Retrieved from https://www.washingtonpost.com/news/business/wp/2016/09/13/millennials-are-picking-pets-over-people/?utm_term=.de2d64130e93

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

- Bradshaw, J. (2011). *Dog sense: How the new science of dog behavior can make you a better friend to your pet*. Boulder: *Basic Books*.
- Brickel, C. M. (1984). Depression in the nursing home: A pilot study using pet-facilitated psychotherapy. In *The Pet Connection: Its Influence on Our Health and Quality of Life*, 407–415, ed. R. K. Anderson, B. L. Hart, and L. A. Hart. Minneapolis, MN: Center to Study Human–Animal Relationships and Environments, University of Minnesota.
- Chandler, C. K. (2012). *Animal assisted therapy in counseling*, 2nd ed. New York, NY, US: Routledge/Taylor & Francis Group.
- Cohen, J. (1966). Some statistical issues in psychological research. In B. B. Wolman (Ed.), *Handbook of clinical psychology*. New York, NY: McGraw-Hill.
- Cole, K., Gawlinski, A., Steers, N., & Kotlerman, J. (2007). Animal-assisted therapy in patients hospitalized with heart failure. *American Journal of Critical Care*, 16(6), 575-585.
- Coren, S. (2014). 14 Dog Breeds Blacklisted by Insurance Companies. Retrieved April 13, 2019, from <https://www.psychologytoday.com/us/blog/canine-corner/201405/14-dog-breeds-blacklisted-insurance-companies>
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297 – 334.
- Cureton, E.E. (1951). Validity. In E.F. Lindquist (Ed.), *Educational Measurement* (621 – 694). Washington, DC: American Council on Education.
- de Guzman, A. B., Cucueco, D. S., Cuenco, I. B. V., Cunanan, N. G. C., Dabandan, R. T., & Dacanay, E. J. E. (2009). Petmanship: Understanding elderly filipinos' self-perceived health and self-esteem captured from their lived experiences with pet companions. *Educational Gerontology*, 35(11), 963-989. doi:10.1080/03601270802708418

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

- Dietz, T. J., Davis, D., & Pennings, J. (2012). Evaluating animal-assisted therapy in group treatment for child sexual abuse. *Journal of Child Sexual Abuse*, 21(6), 665-683.
doi:10.1080/10538712.2012.726700
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.
- Fine, A. H. (2015). *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions, 4th ed.* (A. H. Fine, Ed.). San Diego, CA: Elsevier Academic Press.
- Fournier, A. K., Geller, E. S., & Fortney, E. V. (2007). Human-animal interaction in a prison setting: Impact on criminal behavior, treatment progress, and social skills. *Behavior and Social Issues*, 16(1), 89–105. <https://doi-org.proxy195.nclive.org/10.5210/bsi.v16i1.385>
- Friedmann, E., (1990) The value of pets for health and recovery. *Proceedings of the Waltham Symposium*, 20, 9-17.
- Friedmann, E., Thomas, S. A., Stein, P. K., & Kleiger, R. E. (2003). Relation between pet ownership and heart rate variability in patients with healed myocardial infarcts. *The American Journal of Cardiology*, 91(6), 718-721. doi:10.1016/S0002-9149(02)03412-4
- Granger, B. P., & Kogan, L. (2006). Chapter 10 - animal-assisted therapy in specialized settings. (pp. 213-236) Elsevier Inc. doi:10.1016/B978-012369484-3/50013-X
- Green J. (2009). The therapeutic alliance. *Child: Care, Health & Development*, 35(3), 298–301.
doi.org/10.1111/j.1365-2214.2009.00970.x
- Hemingway, A., Meek, R., & Hill, C. E. (2015). An exploration of an equine-facilitated learning intervention with young offenders. *Society & Animals: Journal of Human-Animal*

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

Studies, 23(6), 544–568. <https://doi-org.proxy195.nclive.org/10.1163/15685306-12341382>

Herzog, H. (2011). The impact of pets on human health and psychological well-being: Fact, fiction, or hypothesis?. *Current Directions in Psychological Science*, 20(4), 236-239. Doi:10.1177/0963721411415220

Herzog, H. (2014). *Does Animal-Assisted Therapy Really Work?* Psychology Today. Retrieved from: <https://www.psychologytoday.com/blog/animals-and-us/201411/does-animal-assisted-therapy-really-work>.

Herzog, H. (2015). The research challenge: Threats to validity of animal-assisted therapy studies and suggestions for improvement. In A.H. Fine (Ed.), *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions* (4th ed., pp. 402-407). San Diego, CA: Elsevier.

Jegatheesan, B. (Ed.). (2015). The IAHAIO definitions for animal-assisted rntervention and guidelines for wellness of animals involved. *Handbook on Animal-Assisted Therapy*, 415-418. doi:10.1016/b978-0-12-801292-5.15001-1

Jones, M. G., Rice S.M., & Cotton, S. M. (2019). Incorporating animal-assisted therapy in mental health treatments for adolescents: A systematic review of canine assisted psychotherapy. *PLoS One*, 14(1) doi:<http://dx.doi.org/10.1371/journal.pone.0210761>

Jöreskog K.G. & Sörbom, D. (2015). LISREL 9.2 for Windows [Computer software] Skokie, IL: Scientific Software International.

Kemp, K., Signal, T., Botros, H., Taylor, N., and Prentice, K. (2013). Equine facilitated therapy with children and adolescents who have been sexually abused: a program evaluation study. *J. Child Fam. Stud.* 23, 558–566. doi: 10.1007/s10826-013-9718-1

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

- Kriss, R. (2019). Most Popular Breeds. Retrieved from <https://www.akc.org/most-popular-breeds/>
- Krupnick, J. L., Sotsky, S. M., Simmens, S., Moyer, J., Elkin, I., Watkins, J. & Pilkonis, P. A. (1996) The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: findings in the national institute of mental health treatment of depression collaborative research program. *Journal of Consulting and Clinical Psychology*, 64, 532–539.
- Lass-Hennemann, J., Peyk, P., Streb, M., Holz, E., & Michael, T. (2014). Presence of a dog reduces subjective but not physiological stress responses to an analog trauma. *Frontiers in Psychology*, 5, 1010. doi:10.3389/fpsyg.2014.01010
- Lundqvist, M., Carlsson, P., Sjudahl, R., Theodorsson, E., & Levin, L. (2017). Patient benefit of dog-assisted interventions in health care: A systematic review. *BMC Complementary and Alternative Medicine*, 17 doi:<http://dx.doi.org/10.1186/s12906-017-1844-7>
- Mahalanobis, P.C. (1936). On the generalized distance in statistics. *Proceedings of the National Institute of Sciences of India*, 2(1), 49-55.
- McVarish, C. (1994). *The effects of pet facilitated therapy on depressed institutionalized inpatients* (Doctoral dissertation) California School of Professional Psychology, Alameda.
- Menna, L. F., Santaniello, A., Gerardi, F., Sansone, M., Di Maggio, A., Di Palma, A., . . . Formisano, P. (2019). Efficacy of animal-assisted therapy adapted to reality orientation therapy: Measurement of salivary cortisol: Efficacy of AAT adapted to ROT. *Psychogeriatrics*, doi:10.1111/psyg.12418

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

- Mims, D., & Waddell, R. (2016). Animal assisted therapy and trauma survivors. *Journal of Evidence-Informed Social Work, 13*(5), 452–457. <https://doi-org.proxy195.nclive.org/10.1080/23761407.2016.1166841>
- Nimer, J., & Lundahl, B. (2007). Animal-Assisted Therapy: A Meta Analysis. *Anthrozoös, 20*(3), 225-238. doi:10.2752/089279307x224773
- O'Haire, M., Guerin, N., & Kirkham, A. (2015). Animal-assisted intervention for trauma: A systematic literature review. *Frontiers in Psychology, 6* doi:10.3389/fpsyg.2015.01121
- Pet Partners Home. (n.d.). Retrieved from <https://petpartners.org/volunteer/volunteer-with-pet-partners/>
- Pit Bulls - Facts, Information, and Statistics About Pitbull-Type Dogs. (2019). Retrieved from <https://www.pitbullinfo.org/>
- Reid, P. J. (2009). Adapting to the human world: Dogs' responsiveness to our social cues. *Behavioural Processes, 80*(3), 325-333. doi:10.1016/j.beproc.2008.11.002
- Russow, L. M. (2002) Ethical implications of the human-animal bond. *International League of Associations for Rheumatology, 43*(1), 33-37.
- Schneider, M. S., & Harley, L. P. (2006). How dogs influence the evaluation of psychotherapists. *Anthrozoös, 19*(2), 128-142. Doi:10.2752/089279306785593784
- Schuck, S. B., Emmerson, N. A., Fine, A. H., & Lakes, K. D. (2015). Canine-assisted therapy for children with ADHD: Preliminary findings from the Positive Assertive Cooperative Kids study. *Journal Of Attention Disorders, 19*(2), 125-137. doi:10.1177/1087054713502080
- Sharf, J., Primavera, L. H., & Diener, M. J. (2010). Dropout and therapeutic alliance: A meta-analysis of adult individual psychotherapy. *Psychotherapy: Theory, Research, Practice, Training, 47*, 637–645. <http://dx.doi.org/10.1037/a0021175>

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

- Shiloh, S., Sorek, Gal, & Terkel, J. (2003). Reduction of State-Anxiety by Petting Animals in a Controlled Laboratory Experiment. *Anxiety, Stress & Coping*, 16(4), 387–395.
- Siegel, J. M. (1990). Stressful life events and use of physician services among the elderly: The moderating role of pet ownership. *Journal of Personality and Social Psychology*, 58(6), 1081-1086. doi:10.1037/0022-3514.58.6.1081
- Spielberger., C. D. (1197). State-Trait Anxiety Inventory for Adults (STAI-AD) - Assessments, Tests | Mind Garden. Retrieved from <https://www.mindgarden.com/145-state-trait-anxiety-inventory-for-adults>
- Staufenbiel, S. M., Penninx, B. W. J. H., Spijker, A. T., Elzinga, B. M., & van Rossum, E. F. C. (2012;2013;). Hair cortisol, stress exposure, and mental health in humans: A systematic review. *Psychoneuroendocrinology*, 38(8), 1220-1235.
[doi:10.1016/j.psyneuen.2012.11.015](https://doi.org/10.1016/j.psyneuen.2012.11.015)
- Struckus, J. E. 1989. *The use of pet-facilitated therapy in the treatment of depression in the elderly: A behavioral conceptualization of treatment effects* (Doctoral dissertation). University of Massachusetts.
- Tannerbaum, J. (1995). *In Veterinary ethics: Animal welfare, client relations, competition and collegiality* (2nd ed.). St. Louis, MO: Mosby.
- Tukey, J.W. (1953). The problem of multiple comparisons. Unpublished manuscript, Princeton University.
- Wall, M. J., 1994. *The effects of companion animal visitation on mood state and level of speech activity of nursing home residents* (Doctoral dissertation). California School of Professional Psychology, San Diego.

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

- Westgarth, C., Pinchbeck, G. L., Bradshaw, J. W., Dawson, S., Gaskell, R. M., & Christley, R. M. (2007). Factors associated with dog ownership and contact with dogs in a UK community. *BMC Veterinary Research*, 3(1), 5. doi:10.1186/1746-6148-3-5
- Wilks, S.S. (1932). Certain generalizations in the analysis of variance. *Biometrika*, 24, 471-494.
- Woolley, C. (2004) Changes in child symptomatology associated with animal-assisted therapy. (Graduate Theses and Dissertation). 6212.
<https://digitalcommons.usu.edu/etd/6212>

APPENDICES

1. Appendix of Measures

1.1 Therapeutic Qualities

On a scale from 1-6, this dog makes you feel...

(Strongly Disagree) (Disagree) (Somewhat disagree) (Somewhat agree) (Agree)
(Strongly Agree)

- A. Calm/Relaxed
- B. Safe around this dog/comfortable
- C. Hopeful

On a scale from 1-6, Is this dog/goat...

(Strongly Disagree) (Disagree) (Somewhat disagree) (Somewhat agree) (Agree)
(Strongly Agree)

- A. Nonjudgmental
- B. Approachable
- C. Able to sense how I'm feeling

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1.2 State-Trait Anxiety Inventory

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

ALMOST NEVER
SOMETIMES
OFTEN
ALMOST ALWAYS

21. I feel pleasant..... 1 2 3 4
22. I feel nervous and restless 1 2 3 4
23. I feel satisfied with myself..... 1 2 3 4
24. I wish I could be as happy as others seem to be 1 2 3 4
25. I feel like a failure 1 2 3 4
26. I feel rested 1 2 3 4
27. I am "calm, cool, and collected" 1 2 3 4
28. I feel that difficulties are piling up so that I cannot overcome them..... 1 2 3 4
29. I worry too much over something that really doesn't matter..... 1 2 3 4
30. I am happy 1 2 3 4
31. I have disturbing thoughts 1 2 3 4
32. I lack self-confidence..... 1 2 3 4
33. I feel secure 1 2 3 4
34. I make decisions easily 1 2 3 4
35. I feel inadequate..... 1 2 3 4
36. I am content 1 2 3 4
37. Some unimportant thought runs through my mind and bothers me 1 2 3 4
38. I take disappointments so keenly that I can't put them out of my mind 1 2 3 4
39. I am a steady person..... 1 2 3 4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests 1 2 3 4

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STAIP-AD Test Form Y
www.mindgarden.com

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

NOT AT ALL
SOMEWHAT
MODERATELY SO
VERY MUCH SO

1. I feel calm..... 1 2 3 4
2. I feel secure 1 2 3 4
3. I am tense 1 2 3 4
4. I feel strained 1 2 3 4
5. I feel at ease 1 2 3 4
6. I feel upset 1 2 3 4
7. I am presently worrying over possible misfortunes 1 2 3 4
8. I feel satisfied 1 2 3 4
9. I feel frightened 1 2 3 4
10. I feel comfortable 1 2 3 4
11. I feel self-confident..... 1 2 3 4
12. I feel nervous 1 2 3 4
13. I am jittery 1 2 3 4
14. I feel indecisive..... 1 2 3 4
15. I am relaxed 1 2 3 4
16. I feel content 1 2 3 4
17. I am worried 1 2 3 4
18. I feel confused..... 1 2 3 4
19. I feel steady..... 1 2 3 4
20. I feel pleasant..... 1 2 3 4

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STAIP-AD Test Form Y
www.mindgarden.com

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

1.3 Demographics

1. What is your age, in years?

2. What is your sex? Male female other

3. What is your ethnic identification?

Asian Black Hispanic Native American White Other

4. Have you owned a dog before?

Yes No

5. If you answered yes to the question above, what breed(s)? _____

6. How much daily interaction do you have with dogs?

0 hours 30 minutes 1 hour 2 hours 3+ hours

7. Do you believe that some dog breeds have positive or negative reputations?

Yes No

8. Have you ever had a negative experience with a dog?

Yes No

9. If you answered yes to the question above, what breed(s)?

10. How much do you agree with this statement? "I am a dog person"

(Strongly agree) (Agree) (Somewhat agree) (Neither agree or disagree)
(Somewhat disagree) (Disagree) (Strongly disagree)

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

2. Appendix of Tables

2.1 Descriptive

Descriptive Statistics

| | N | Range | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|-----|-------|---------|---------|---------|----------------|
| Age | 325 | 54.00 | 18.00 | 72.00 | 21.9385 | 8.57695 |
| Gender | 328 | 2.00 | 1.00 | 3.00 | 1.7652 | .45239 |
| Ethnicity | 328 | 5.00 | 1.00 | 6.00 | 4.7317 | .83573 |
| DogOwnership | 328 | 1.00 | 1.00 | 2.00 | 1.1037 | .30528 |
| DailyInterctation | 328 | 4 | 1 | 5 | 2.60 | 1.728 |
| Valid N (listwise) | 325 | | | | | |

Gender

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------|-----------|---------|---------------|--------------------|
| Valid | Male | 81 | 24.7 | 24.7 | 24.7 |
| | Female | 243 | 74.1 | 74.1 | 98.8 |
| | Other | 4 | 1.2 | 1.2 | 100.0 |
| | Total | 328 | 100.0 | 100.0 | |

Case Processing Summary

| Group | | Cases | | | | | |
|-----------------|---------|-------|---------|---------|---------|-------|---------|
| | | Valid | | Missing | | Total | |
| | | N | Percent | N | Percent | N | Percent |
| Average Ratings | Good | 79 | 100.0% | 0 | 0.0% | 79 | 100.0% |
| | Bad | 86 | 100.0% | 0 | 0.0% | 86 | 100.0% |
| | Neutral | 80 | 100.0% | 0 | 0.0% | 80 | 100.0% |
| | Control | 83 | 100.0% | 0 | 0.0% | 83 | 100.0% |

2.2 MANOVA

Levene's Test of Equality of Error Variances^a

| | F | df1 | df2 | Sig. |
|-------------------------|-------|-----|-----|------|
| Average Ratings | 4.827 | 3 | 324 | .003 |
| State Anxiety Sum Score | .103 | 3 | 324 | .958 |

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group

PERCEPTION OF DOG BREEDS IN A THERAPEUTIC SETTING

Multivariate Tests^a

| Effect | | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power |
|-----------|--------------------|--------|---------------------|---------------|----------|------|---------------------|--------------------|----------------|
| Intercept | Pillai's Trace | .983 | 9144.4 ^b | 2.000 | 323.000 | .000 | .983 | 18288.8 | 1.000 |
| | Wilks' Lambda | .017 | 9144.4 ^b | 2.000 | 323.000 | .000 | .983 | 18288.8 | 1.000 |
| | Hotelling's Trace | 56.622 | 9144.4 ^b | 2.000 | 323.000 | .000 | .983 | 18288.8 | 1.000 |
| | Roy's Largest Root | 56.622 | 9144.4 ^b | 2.000 | 323.000 | .000 | .983 | 18288.8 | 1.000 |
| Group | Pillai's Trace | .260 | 16.125 | 6.000 | 648.000 | .000 | .130 | 96.753 | 1.000 |
| | Wilks' Lambda | .741 | 17.400 ^b | 6.000 | 646.000 | .000 | .139 | 104.401 | 1.000 |
| | Hotelling's Trace | .348 | 18.681 | 6.000 | 644.000 | .000 | .148 | 112.084 | 1.000 |
| | Roy's Largest Root | .344 | 37.201 ^c | 3.000 | 324.000 | .000 | .256 | 111.603 | 1.000 |

a. Design: Intercept + Group

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

2.3 ANOVA

ANOVA

Average Ratings

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|--------|------|
| Between Groups | 64.023 | 3 | 21.341 | 35.704 | .000 |
| Within Groups | 193.660 | 324 | .598 | | |
| Total | 257.684 | 327 | | | |

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Average Ratings

Tukey HSD

| (I) Group | (J) Group | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|-----------|-----------|-----------------------|------------|------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| Good | Bad | .54430* | .12048 | .000 | .2332 | .8554 |
| | Neutral | .47763* | .12263 | .001 | .1610 | .7943 |
| | Control | 1.24325* | .12152 | .000 | .9294 | 1.5571 |
| Bad | Good | -.54430* | .12048 | .000 | -.8554 | -.2332 |
| | Neutral | -.06668 | .12009 | .945 | -.3768 | .2434 |
| | Control | .69895* | .11896 | .000 | .3917 | 1.0062 |
| Neutral | Good | -.47763* | .12263 | .001 | -.7943 | -.1610 |
| | Bad | .06668 | .12009 | .945 | -.2434 | .3768 |
| | Control | .76563* | .12113 | .000 | .4528 | 1.0784 |
| Control | Good | -1.24325* | .12152 | .000 | -1.5571 | -.9294 |
| | Bad | -.69895* | .11896 | .000 | -1.0062 | -.3917 |
| | Neutral | -.76563* | .12113 | .000 | -1.0784 | -.4528 |

*. The mean difference is significant at the 0.05 level.