IMPACT OF EXPOSURE ON THE WILLINGNESS TO WORK WITH DOG BREEDS

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Service Psychology

By

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ABSTRACT

IMPACT OF EXPOSURE ON THE WILLINGNESS TO WORK WITH DOG BREEDS

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In 1961, Dr. Boris Levinson's therapeutic animal work was presented to the American Psychological Association (APA), later serving as the catalysis for what is now known as animal assisted interventions (AAI) (Altschiller, 2011). However, animals were long before assisting humans physically and emotionally. Since 1961, many animals have been introduced into therapeutic settings, hospitals, schools, nursing homes, rehabilitation facilities, prisons, and more (Granger & Kogan, 2006), with dogs being the most commonly integrated animal. Addonisio (2020) found that "bad" (e.g., Pit Bull Terriers, Rottweilers, Mastiffs) and "neutral" (e.g., German Shepherd, Dalmatian) reputation dog breeds were rated significantly lower on therapeutic qualities (e.g., nonjudgmental, approachable, engaging) than "good" reputation dogs (e.g., Golden Retrievers, Labrador Retrievers). Based on the parasocial contact hypothesis (Schiappa et al., 2005), it was hypothesized that an individual's perception of a specific dog breed would become more positive with parasocial contact (i.e., indirect contact via media). To date, no study has examined the impact of a breed specific exposure on the perception of bad reputation dog breeds. A two-way multivariate analysis of variance (MANOVA) was performed to examine the interaction effect of the dog breeds and exposure (IVs) on perceived therapeutic qualities and likelihood of working with a dog (DVs). An exploratory Pearson correlation coefficient matrix was conducted to evaluate the relationship between therapeutic qualities

ratings and the five M5-120 personality domains. No significant interaction effect between exposure groups or breed of the dog on the combined dependent variables was found. There was a significant positive correlation between two personality domains (Openness to experiences and Agreeableness) and therapeutic qualities ratings. Further research is needed to explore potential modifications that may combat the negative perceptions of dog breeds that are often utilized in AAI.

INTRODUCTION

Animals have a long history of improving the quality of life in humans. One of the earliest documented cases was in 1792, when a mental asylum in England allowed patients to interact with animals to help bring peace to the patients and to promote a shift in focus from themselves (Altschiller, 2011). In 1867, a German residential facility introduced pets as a staple in their center to help with treatment of those with physical and mental disabilities. During WWII (1944), American soldiers who were suffering from psychological and/or physical trauma were sent to interact with farm animals at the Pawling Army Air Force Convalescent Hospital (Altschiller, 2011; Amerine & Hubbard, 2016). Despite almost two centuries of animals assisting with the physical and mental wellbeing of humans, it was not until 1961 when Dr. Boris Levinson presented at the American Psychological Association (APA), that therapeutic activities with animals was finally studied. Dr. Levinson left his dog, Jingles, alone with a child who was uncommunicative and suffered from severe mental illness. When Dr. Levison returned to the room, he found the boy talking to Jingles. Jingles was one of the first dogs to be documented as helping in a therapeutic capacity (Altschiller, 2011). Throughout history, many animal species, such as farm animals, cats, and dogs, have been introduced into therapeutic settings, such as hospitals, schools, nursing homes, rehabilitation facilities, prisons, and psychotherapy (Granger & Kogan, 2006).

Animal Assisted Interventions

Dr. Levinson's 1961 therapeutic activities work with animals was later defined as animal assisted therapy (AAT). As research has progressed in this area, other terminologies to describe these activities have been created. The terms animal assisted interventions (AAI) and AAT are

now often used interchangeably in the literature regarding animal support of humans. AAI is a broad term that encompasses AAT as well as animal assisted activities (AAA), and animal assisted education (AAE) (Pet Partners, n.d). Jegatheesan (2015) defined AAI 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). One example of AAI is a dog handler team visiting patients in a hospital with the goal of decreasing stress or improving quality of life for those individuals during recovery. AAI is not limited to the generalized settings mentioned in this example, however. These interventions can also be more structured, used in a one-on-one setting, or take place over multiple sessions. It should be noted that AAI does not require the handler of the animal to be a trained professional (e.g., therapist); however, AAT includes this requirement. Although many different animals have been successfully implemented in AAI, dogs have been among the most common animal species that assist with these therapeutic interventions in more recent years (Nimer & Lundahl, 2007).

Evolution of a Dog's Role

Dogs as we know today share approximately 99.96% of their genes with the Euro-Asian wolf; however, years of domestication have changed dogs' behaviors so much so that the comparison is no longer meaningful (Bradshaw, 2011). Prior to the last century, dogs were often an integral part of humans' lives, but not in the same way that they are today. Only a select subset of the very wealthy had lapdogs while most other dogs worked for a living (Bradshaw, 2011). Those that performed best in their role and possessed the appropriate features to make them successful were bred to maintain and/or enhance these skills in future generations (Bradshaw, 2011). As breeding evolved, the American Kennel Club (AKC) set out to classify dogs by appearance and skill sorting them into seven distinct groups which include sporting,

hound, working, terrier, toy, non-sporting, or herding based on the original role (American Kennel Club, n.d). Each classification is associated with natural tendencies and instincts that most often accompany a dog within that breed classification. For example, the Working group are among the oldest breeds, with their strength and intelligence making them ideal for helping guarding flocks, pulling sleds, or protecting families (American Kennel Club, 2023). Comparatively, the Toy group, often social and affectionate companions, received their name from their small stature making them ideal lapdogs (American Kennel Club, 2023). The continued domestication over centuries and close working relationship between dogs and humans led to the versatility of dog species (e.g., size, temperament).

Dogs are now bred to partner with humans in their day to day lives in multiple capacities (e.g., companions, workforce; Fine, 2015). Dog breeding has progressed beyond just serving humans in one specific role. Most dogs are bred to become family members as their primary role. In 2016, 56.8% of households in America reported owning a pet, with approximately 77 million of those pets being dogs (American Veterinary Medical Association, 2019). Unfortunately, some dog owners, including professionals, pick a family dog based on external factors (e.g., appearance, exposure) and are unaware of the breed's origin, specific aptitudes, and/or innate personality traits. Lack of education of specific dog breeds can often lead to high levels of distress for the owner and the dog when the dog does not meet their expectations. Although dogs are more versatile than ever before, owners and handlers still need to consider dogs' natural instincts and qualities when finding the right fit for the dog and human.

Dogs are an Ideal Choice for AAI

An effective therapy animal (that participates in AAI) promotes a safe and relaxed atmosphere while also seeking out affection and/or interaction with the individual. According to

Bradshaw (2011), dogs are intelligent, able to read emotions, and are known to reciprocate, making them an ideal candidate for AAI. Dogs are unique in that they are one of only a few animals that can fully affiliate with their own species as well as another species (i.e., humans). Nimer and Lundahl (2007) conducted a meta-analysis of AAI therapy outcomes that included 49 studies. Of those studies, dogs were the most common animal that assisted and produced a greater effect size compared to other animals. Additionally, dogs are an appropriate size for therapy rooms and are often easy to transport. Dogs are also relatively easy to train starting from a young age and are widely accessible (American Kennel Club, n.d).

Therapeutic Qualities of Dogs

Aside from being intelligent and logistically a good size for a therapy animal, dogs are also known to help with therapeutic alliance, a core component of most successful therapeutic treatments or interventions (Anderson et al., 2019; Sharf et al., 2010). Therapeutic alliance is the positive working relationship between a client and/or patient and a healthcare professional (APA, 2020). Although the term therapeutic alliance has been used historically to describe the relationship between humans, the presence of a dog in AAI may also strengthen or fracture that alliance. According to Ackerman and Hilsenroth (2003), research has shown that being nonjudgmental, approachable, comforting, hopeful, intuitive, and being calming are important factors for humans in building therapeutic alliance. The person providing the services should also be engaging while also making the individual feel hopeful and safe. To ensure the most positive outcome, these qualities should also be present in the dogs that are assisting with services. Amerine and Hubbard (2016) found that a clients' sense of comfort and safety increased when dogs and other animals were introduced into their sessions. The presence of a dog has been shown to increase client's perceptions of therapists' dependability and make a therapist appear

more trustworthy (Jones et al., 2019). The presence of an animal was also found to increase the individual's comfortability and self-disclosure (Jones et al., 2019).

Most psychotherapy approaches require a certain level of communication between the therapist and client for treatment to be successful. Reid (2009) found that dogs outperform non-human primates, such as apes, in object choice tasks, indicating that a dog can respond to human communicative cues better than non-human primates. Dogs are also known to have an excellent ability to read social cues and emotions due to their inherent predatory nature and ability to associate with multiple species (Lundqvist et al., 2017). Centuries of purposeful domestication have given dogs a unique ability to follow patterns and adapt to new environments. For example, dogs can sense when their owners are angry through nonverbal cues alone, typically resulting in a dog hiding or putting their tail between their legs. On the other hand, when dogs sense happiness from their owners, they will often seek out physical affection. On many occasions research has shown that the presence of a dog in treatment presents therapeutic benefits beyond standardized treatment alone, resulting in decreased psychopathology and physiological symptoms (Brickel, 1984; McVarish, 1994; Menna et al., 2019).

Outcome Research for Dogs in AAI

Research has shown many benefits of AAI since the early 1990's when journals first started to publish outcome research related to this field. Some of those benefits include reduced attention-deficit/hyperactivity disorder (ADHD) symptomatology in children (Schuck et al., 2015), increased trust and lower anxious symptoms in survivors of trauma (Mims & Waddell, 2016), decreased epinephrine, norepinephrine, and cortisol levels which are associated with decreases in internalizing mental illnesses (Cole et al., 2007; Menna et al., 2019; Staufenbiel et al., 2013), as well as reduced emotional stress responses and depressive symptoms (Brickel,

1984; McVarish, 1994; Struckus, 1989; Wall, 1994). AAI outcome research spans across settings, including but not limited to individual therapy, group therapy, schools, prisons, nursing homes, and hospitals.

Therapy Dogs in a Hospital Setting

When considering dog assisted intervention and therapy, some common settings include behavioral health, physical therapy, occupational therapy, schools, and hospitals. In particular, hospitals are often high stress, fast paced, and a demoralizing environment for many patients and staff. For these reasons, hospitals could benefit from the positive outcomes (e.g., decreased stress and a decrease in internalizing mental illnesses) dog assisted intervention offers. Decreases in pain, irritation, stress, and depression were found among 24 pediatric oncology patients in a hospital after 30-minute weekly visits with a certified therapy dog (Golden or Labrador Retriever) over four weeks (Silva & Osorio, 2018). In the same study, the caregivers of these children were found to have decreased anxiety, tension, and mental confusion.

In the United Kingdom, Uglow (2019) surveyed staff and parents of patients to assess the effect of AAI at a children's university teaching hospital. The study included three volunteer handlers with five Golden retrievers that participated in a variety of interventions (e.g., 'meet and greets', physiotherapy, occupational therapy, and distraction during blood taking). Researchers found an overwhelmingly positive response to the AAI services provided by the dog handler team. Notably, there were no concerns related to the behavior or hygiene of the dogs. Researchers also found that 100% of the participants ($n = 200$) recommended that the UK offer similar services nationwide. Other studies have found similar results. Reddekopp et al. (2020) examined patient opinion of AAI being incorporated into a hospital emergency department (ED) and found 80% of participants reported being open to visiting a therapy dog as an ED patient.

Machova et al. (2020) found that 90% of respondents, which included elderly clients, patient family members, and staff at a healthcare facility, found AAI to be beneficial in a healthcare setting and responded well to AAI overall. Participants reported trusting the handler with their dog but also reported some concerns related to hygiene. Although it is important to note that participants trusted the handler with their dog, this study did not account for different breeds of dogs.

Impact of Dog Breed Exposure on Perceptions of the Breed

Many animals have been found to be a beneficial addition to therapy and intervention services; however, when considering dogs specifically, not all breeds may be appropriate. Addonisio (2020) found that "bad" and "neutral" reputation dogs were rated significantly lower than good reputation dogs on a self-report therapeutic qualities measure. Based on societal perceptions, expectations, and experience, dog breeds may elicit a positive or negative reaction from an individual.

Research has shown that the addition of a dog to therapeutic environments can benefit those receiving the service (Menna et al., 2019; Staufenbiel et al., 2013; Uglow, 2019). As previously discussed from Addonisio (2020), not all dog breeds may be perceived as embodying certain therapeutic qualities (e.g., safe/comfortable, approachable, hopeful). Societal perceptions likely stem from the original purpose of a specific breed, how humans have incorporated the dog into society, and the natural features of a specific breed. For example, many humans have exploited the Pit Bull's natural muscular build and started to purposely rear aggressive dogs with the intentions of using them as an object in inhumane dog fighting rings. Although any dog reared in such an environment could become aggressive, breeds such as Pit Bull, Rottweiler, and Mastiff are often chosen for their size and strength. Acts of aggression led to negative media

coverage surrounding many of these breeds. Although all the breeds mentioned above are more commonly depicted as aggressive in the media, there are still variations in how each specific breed is perceived. While it was not a focal point of the study, data from Addonisio (2020) found that Pit Bulls were rated higher (more positively) than Rottweilers and Mastiffs on the perceived therapeutic qualities measure. This indicates that the public perception of breeds varies even among the breeds that are often considered "bad" or more aggressive.

Any dog may be a suitable therapy dog; however, if the client has a negative perception of the breed, it has the potential to be a barrier to services. Negative perceptions may be even more important to consider in group settings compared to individual therapy (Addonisio, 2020). Many therapists advertise the dog(s) they will include in AAI, giving a client the option to opt out of treatment or the opportunity to identify a therapy dog that they feel comfortable working with in treatment. However, many of the dog handler teams that assist in group settings are volunteer teams limiting the recipient's choice to those that are available. These individuals may have negative preconceived notions of some dog breeds. Although these individuals have the option to decline a visit from the dog handler team, the dog could still be in proximity (e.g., in the room or bed next to them). This has the potential to cause additional stress or anxiety, instead of reducing it.

Individual Differences

The way a dog breed is portrayed in the media likely has an impact on how that dog breed is perceived; however, individual differences should not be discounted (Addonisio, 2020). Other factors include a person's feelings towards animals and previous experiences with dogs. An individual's past experiences or exposure, whether good or bad, is likely going to contribute to their perceptions of that dog breed. Those who would consider themselves "animal lovers"

may be more open to interacting with different breeds, regardless of past experiences or media exposure, due to their overall feelings towards animals.

Individual personality characteristics are also likely to contribute to perceptions. Wiggins and Pincus (1992), considered Costa and McCrae's (1985) Five-Factor model of personality to be the most comprehensive model of personality to date. The Five-Factor model of personality includes: Neuroticism, Extroversion, Openness to Experience, Conscientiousness, and Agreeableness (Costa and McCrae, 1985). Individual differences in personality have not yet been studied as it relates to perceptions of dog breeds; however, it is reasonable to assume that personality characteristics can impact perceptions.

Exposure Through Parasocial Contact

Allport (1954) introduced the contact hypothesis which suggests that interpersonal contact is one of the most effective ways to reduce discrimination between groups. Although the contact hypothesis has only been tested with regards to discrimination against other humans, there is marked similarity with the way humans discriminate against certain dog breeds. Ideally, exposure to dog breeds would be in vivo but this is likely not realistic for many individuals for a myriad of reasons (e.g., limited access, perceived danger, or lack of predictability). Based on Allport's hypothesis, Schiappa et al. (2005) examined participant's attitude towards the LGBTQ+ community. They found that individual attitudes significantly improved after being exposed to different movies and shows depicting individuals in the LGBT community (e.g., *Queer Eye for the Straight Guy, Six Feet Under, Dress to Kill*). This finding was coined the parasocial contact hypothesis (PCH). The authors noted that there is likely not a single aspect of parasocial contact that can be directly tied to attitude change. However, this study demonstrated that attitudes towards two specific minority groups can be positively changed given the PCH. It

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is reasonable to believe the PCH can also be applied to individuals who gain exposure to different dog breeds via educational videos. Researchers have found that dog owners have more interactions with other dogs compared to those who did not own a dog (Westgarth et al., 2007), but those who do not have a dog or limited interaction with dogs may base their attitudes on societal stereotypes. Exposure allows individuals the opportunity to create their own schema regarding a dog breed instead of defaulting to societal reputation and may subsequently limit the adjustment period and/or reduce obstacles for a client and/or patient who has agreed to participate in AAI.

Purpose

To date, no study has examined the impact of breed specific exposure on the perception of dog breeds with bad reputations. The purpose of the current study was to examine if (a) the ratings of therapeutic dog qualities and (b) the likelihood that an individual would allow a visit from a specific breed would be impacted by breed specific exposure. Specifically, researchers sought to examine if an educational video providing exposure to "bad" reputation dog breeds would change an individual's perception of that breed in AAI. The three dog breeds chosen for this study, Pit Bull Terrier, Rottweiler, and Mastiff, were narrowed down from a list of six "bad" reputation dogs in Addonisio (2020). The six "bad" reputation dog breeds were cross examined with a list of current certified dog breeds from Pet Partners (the largest national organization that certifies therapy animals), and the three most common breeds, Pit Bull Terrier, Rottweiler, and Mastiff, were selected.

Researchers predicted that participants who were exposed to short, breed specific educational videos, would rate all dog breed conditions (Rottweiler, Pit Bull Terrier, Mastiff) significantly higher on perceived therapeutic qualities compared to participates without any

exposure. Additionally, researchers predicted that participants exposed to the educational videos would also be significantly more willing to engage in AAI. Finally, researchers sought to explore if personality characteristics of an individual would impact ratings of perceived therapeutic qualities. To the researcher's knowledge, no study to date has examined this potential impact. The current study aimed to explore if there were correlations between Costa and McCrae's (1985) Five-Factor model of personality on therapeutic quality ratings of dogs. Specifically, researchers predicted that Openness to Experiences, Agreeableness, and Neuroticism would be the most influential domains when considering therapeutic quality ratings of dog breeds.

Tested Hypotheses

1a. Exposure conditions will be rated significantly higher than the no-exposure conditions, regardless of breed (Rottweiler, Pit Bull Terrier, Mastiff), for both dependent measures.

1b. An exploratory post-hoc analysis will be conducted to detect significant differences between dog breed and exposure conditions for both dependent variables.

2. The Pit Bull Terrier conditions will have significantly higher scores compared to the Rottweiler and Mastiff conditions for both dependent measures.

3a. An exploratory analysis was conducted to detect any significant correlations between the five domains of the five-factor model as measured by the M5-120 (McCord, 2002) and the therapeutic qualities measure.

3b. Those who score higher on the Agreeableness and Openness to experience domains will have higher ratings on the therapeutic qualities measure.

3c. Those who score higher on the Neuroticism domain will have lower ratings on the therapeutic qualities measure.

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 et al., 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 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 (e.g., Facebook, Reddit, Twitter) and received no compensation for their participation. Participants were able to access the Qualtrics link through social media sites.

Measures

Background

Demographic Survey. An online-based demographic survey was completed by all participants at the beginning of the experiment. Demographic information gathered included age, sex, dog ownership, and ownership of specific breed(s). Participants were also asked to rate how much they like dogs, how they feel about others' dogs, how much interaction they have with dogs on a daily basis, if they have ever participated in AAI, how willing they would be to participate in AAI, and if they have had any previous negative experiences (e.g., past trauma) with dogs, including specific breeds. (See Appendix 1.4 for the Demographic Survey).

Likelihood to Participate in AAI

Likelihood Question. Participants were asked "How likely are you to allow Echo the (Rottweiler, Pit Bull Terrier, Mastiff) and their handler to visit you in a hospital setting?". The appropriate breed was included for each condition. The question was on a sliding scale from 0 (*Not at all likely*) to 10 (*Extremely likely)* without revealing the exact number the participant has selected. (See Appendix 1.2 for Likelihood Question).

Alliance Measure

Therapeutic Qualities. Six therapeutic qualities were used to measure key components of therapeutic alliance with a dog. This measure was created based on a pilot study conducted by Addonisio (2019) that included eight therapeutic qualities. One of the eight did not reach minimum acceptable reliability (0.8) and two other qualities were combined due to extremely high reliability, for a total of six therapeutic qualities. Addonisio (2020) successfully implemented the measure. However, the therapeutic quality of "able to sense how I'm feeling" was replaced with "engaging" to better capture the para-exposure component of this study and to align more closely with the literature on therapeutic alliance. Participants were asked, "On a scale from 1- 6, Echo is.…" *nonjudgmental*, engaging, and *approachable*. They were also asked, "On a Scale from 1-6, Echo makes you feel …" *hopeful*, *calm/relaxed*, and *safe /comfortable*. Each item is responded to using a 6-point ordered response scale format with responses 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). All six qualities were averaged for a total therapeutic qualities score. (See Appendix 1.1 for Therapeutic Qualities Measure).

Personality

M5-120. Participants completed the M5-120 Questionnaire. The M5-120 Questionnaire is a 120 item self-report measure designed to assess traits of normal personality (McCord, 2002). Each item is scored on a 5-point Likert-scale with answers ranging from 1 (Inaccurate) to 5

(Accurate). The M5-120 is based on the Five-Factor Model of Personality (Neuroticism,

Extroversion, Openness to Experience, Conscientiousness, and Agreeableness). There are six

descriptive facets within each of the five domains. According to McCord (2002), both at the

domain and the facet level, the M5-120 has been shown to be highly correlated with the NEO-PI-

R and has a high degree of internal reliability. Several published studies have reported suitable

levels of reliability and validity in many of the domains (Proctor & McCord, 2009a, 2009b). (See

Appendix 1.3 for Complete M5-120).

Procedures

Western Carolina University participants logged into SONA to complete the online

survey. Participants from the community accessed the Qualtrics link via Facebook, Twitter, or

Reddit. Once participants clicked on the link, an informed consent was provided. After

participants agreed to the informed consent the demographic survey appeared. See Appendix 2.1

for flow chart of procedures. Qualtrics then randomly assigned each participant to one of six

conditions. Conditions varied regarding exposure (5-minute video) or no-exposure (no video)

and dog breed (Rottweiler, Pit Bull Terrier, Mastiff) for a total of six conditions. All participants

assigned to an exposure condition watched a five-minute educational video on one of the three

dog breeds (Rottweiler, Pit Bull Terrier, Mastiff) (See Appendix 2.4). Once the video concluded,

the participants read a prompt and viewed a picture (See Appendix 2.3). The prompt was as

follows, "This is Echo, an adult (Rottweiler, Pit Bull, Mastiff) that works with their handler to

provide animal assisted intervention (AAI). AAI consists of a certified therapy animal and

handler team that visits with an individual or group of individuals with the purpose of therapeutic

improvements for those involved. Echo has been a certified therapy dog through a nationwide

reputable dog certification company for 2 years. Echo enjoys treats, playing fetch, and visiting

patients and staff in the hospital who are having a difficult time." Participants then completed the Therapeutic Qualities measure as well as the Likelihood question while the prompt and picture were still visible. Participants assigned to the no-exposure group viewed the matching prompt and picture for one of the three dog breeds (Rottweiler, Pit Bull Terrier, Mastiff) and then were asked to complete the Therapeutic Qualities measure as well as the Likelihood question. Participants in the exposure conditions were then asked, "Please describe your experience with watching the video (e.g., thoughts, feelings, comments, things that stood out)." and **"**What other information would you like to know about Echo?" to collect qualitative data for future studies. Participants in the no-exposure conditions were only asked "What other information would you like to know about Echo?". Lastly, all participants were asked to complete the M5-120 personality measure. To conclude, participants were thanked for their participation in the survey. Western Carolina University undergraduate students were awarded half credit hour for their participation (See Appendix 2).

Analyses

Multivariate normality was calculated using Mahalanobis (1936) distances, linearity of relationships via scatterplots (for content validity; e.g., Cureton, 1951), multicollinearity via a correlation matrix, and Box's test (1953) of equality of covariance matrices. These analyses were completed prior to conducting a 2 (Exposure) by 3 (Breed) two-way multivariate analysis of variance (MANOVA). A two-way MANOVA was conducted to test hypotheses one (a and b) and two. Breed (Rottweiler, Pit Bull, Mastiff) and exposure (video or no video) were the independent variables and self-report therapeutic qualities and the likelihood question were the two dependent variables. Additionally, a post-hoc test was conducted at the same time to test

hypothesis one (b). A correlation matrix was also conducted to test the exploratory hypotheses (3a, 3b, 3c) regarding personality and therapeutic qualities.

RESULTS

Two hundred fifty-three participants completed the survey; however, 38 subjects in total were removed due to missing data ($n = 23$) or duplicate participation ($n = 15$), for a total of 215. Participants included undergraduate Introductory Psychology students from Western Carolina University and individuals recruited via Facebook, Twitter, and Reddit. Data collection took place from 28 February 2022 to 28 June 2022. Participants ranged in age from 18 to 78 years, with an average of 22.73 years and a mode of 19 (27.4%). Gender identity included 125 women, 75 men, 6 non-binary, 3 transgender man, 2 genderqueer, 1 transgender woman, 1 agender individual, and 2 individuals whose identity was not listed, or they preferred not to answer. Ethnic identity captured included White (79.1%), Black (8.4%), Hispanic (5.1%), Asian (3.7%), Native American (0.9%), and not listed/fill-in (2.8%). 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 were well above the minimum level of accepted reliability. (See Appendix 3.1)

A two-way multivariate analysis of variance (MANOVA) was performed to examine the interaction effect of the dog breeds and exposure (IVs) on perceived therapeutic qualities and likelihood of working with a dog (DVs) to test hypothesis 1 (a, b). Preliminary assumption testing was conducted to check for sample size, univariate and multivariate outliers (Mahalanobis,1936), normality, linearity, homogeneity of variance-covariance matrices, and multicollinearity. Both dependent variables, therapeutic qualities (skew = -1.25, kurtosis = 1.48) and likelihood question (skew = -2.09, kurtosis = 3.54) were leptokurtotic and negatively

skewed, in violation of the -1 to +1 rule (Bulmer, 1979). Other violations include: nine outliers

on the perceived therapeutic qualities' dependent variable and 15 outliers in the likelihood

question dependent variable, one subject had Mahalanobis distances above critical value of

13.82, and Box's test of sphericity in the SPSS output was significant ($p < .001$). Adjustments

for the Box's test of sphericity violation included a reduction from alpha .05 to .01 and the use of

Wilks' Lambda (1932). (See Appendix 3.2).

There was no statistically significant interaction effect between exposure groups or breed

of the dog on the combined dependent variables, $F(4, 406) = .445$, $p = .776$; Wilks' Lambda =

.99; $\eta^2 = .004$ (see Appendix 3.2). Patrial eta squared (η^2) was interpreted as small, medium, and

large effect sizes corresponding to values 0.01, 0.09, and 0.25, respectively (Cohen, 1988). When

results for the dependent variables (therapeutic qualities and likelihood to work with the dog)

were considered separately, no significant interaction effect between exposure groups or breed

was found. Additionally, results from the exploratory post-hoc analysis did not yield any

significant differences between exposure conditions or dogs breeds when regarded separately for

both dependent variables. Hypothesis 1a, 1b, and hypothesis 2 were not supported.

An exploratory Pearson correlation coefficient matrix was conducted to evaluate the

relationship between the therapeutic qualities and the five M5-120 personality domains

(hypothesis 3 a, b, c). Results indicate a significant positive correlation between therapeutic

qualities and the Agreeableness domain, $r(195) = 0.193$, $p = .007$. In addition, a significant

positive correlation was also found between therapeutic qualities and the Openness to Experience

domain, $r(195) = 0.220$, $p = .002$, supporting hypothesis 3a and 3b. Results did not show any

other significant correlations, thus hypothesis 3c was not supported. For a complete list of

correlation coefficients see Appendix 3.3.

DISCUSSION

Results from the current study did not support the researcher's main hypotheses (1a, 1b, 2); however, important information was still gathered that can benefit the AAI literature. It was found that a five-minute video presenting facts about different negatively perceived dogs breeds is not sufficient exposure for many individuals to rate those dogs higher on perceived therapeutic qualities or likelihood of allowing that breed to visit them in a hospital setting. Although no significant difference was found between exposure and no-exposure conditions, it should be noted that the mean ratings for all exposure conditions were higher compared to the no-exposure counterparts on both dependent variables. Of the participants, 198 (92.1%) agreed that some dogs do have a negative reputation and 96 (44.7%) have had a negative experience with a dog in the past. Given this information, researchers were surprised to find that mean ratings across all conditions ranged from 4.84 to 5.32 on the perceived therapeutic qualities measures. Mean scores were higher for the current study than in Addonisio (2020) where the mean score for the "bad" dog reputation group was 4.6 for perceived therapeutic qualities. This indicated that most participants "somewhat agreed" or "agreed" that the therapeutic qualities did align well for each dog breed regardless of exposure.

Despite being aware of the breed reputation, many people appear to be comfortable with negatively perceived dog breeds. Regardless, responsible handlers of therapy dogs should still consider how the breed of their dog may impact those they seek to benefit with AAI. As addressed in Addonisio (2020), clients seeking individual treatment have more ownership over their participation or encounters with a therapy dog. Students, patients, or staff in a group setting (e.g., hospital, school, library) do not have as much control when deciding if a therapy dog can come visit. Although many participants rated the negative dog breeds relativity high on a scale

from 1-5 regardless of exposure, there were participants who did not. All handler and therapy dog teams should aim to leave a positive impact and avoid potential harm. According to the APA (2017) Code of Conduct, Principle A includes Beneficence and Nonmaleficence, meaning that clinicians should not only promote the well-being of others but also avoid harm to others. The American Counseling Association (ACA) outlines similar expectations in their preamble (ACA, 2014).

Although results from the current study did not find a significant difference in ratings when comparing exposure groups to no-exposure groups, handlers should consider longer exposure or even dog specific exposure when working with a negatively perceived dog in a group setting. Providing information about that specific dog, their traits, interests, and history as a therapy animal could be helpful in building that therapeutic alliance before the individual even encounters the dog in person. Similarly, many individuals review the online profile of a helping professional (e.g., Psychology Today) to help determine if it would be a good match. Those profiles often feature similar information and allow the individual to get a sense for that professional.

The Pearson correlation coefficient analysis yielded more fruitful results, supporting several exploratory hypotheses (3a and 3b). Results show that participates with higher levels of agreeableness and openness to experience with regards to the five-factor model of personality, rate negatively perceived dog breeds higher on the dog's therapeutic qualities. Given these results, those who are coordinating AAI visits may want to consider the personality traits of those who could be in direct contact of the therapy dog. For example, a teacher may want to assess how open and agreeable their students are if considering a visit from a therapy dog team. The same advice could be applied to a coordinator of a residential nursing home or a librarian

requesting a therapy dog team participate in a reading group. Conversely, professionals and/or agencies should consider that individuals exhibiting traits of agreeableness and openness to experiences may be less likely to communicate that they are uncomfortable with the dog/handler team. It is crucial that those who facilitate AAI provide adequate information and create a space for those participating to ask questions.

Limitations

There were several limitations to the current study. Limitations included the exposure videos (e.g., generic, length), online format of the study, and disproportionately young participant pool. Regarding the videos, researchers set out to find a realistic solution to combatting negative perceptions of certain dog breeds. One feasible solution would be to play short clips of the dog in common areas or before a visit to help acquaint those with that dog. The videos would have to be brief to maintain attention of the viewer but long enough to be effective in providing exposure and knowledge of that dog. Without prior research being available to guide in the decision, researchers chose a five-minute generic video to aid in the exposure of different dog breeds. Based on the results of the current study, it is reasonable to assume that five minutes may have not been adequate time to elicit change in perception towards a dog breed. The parasocial contact hypothesis (Schiappa et al., 2005) resulted from participants watching a minimum of a TV show (approximately 45 minutes) and as much as a full movie (100 minutes) as a way of gaining exposure to a certain group, and in turn improving one's attitudes towards that group. The generic nature of the videos selected may also be a contributing factor. Providing facts about specific breeds, although interesting, does not necessarily provide relevant information about the specific dog the person will be meeting or the behavioral differences of that dog after its extensive training to become a therapy dog.

When considering the online format of the study, researchers initially intended to conduct this study in vivo at a hospital with real handler dog teams available; however, adjustments were made due to safety guidelines during the pandemic. An in vivo design would target the exact population that this study sought to benefit with the research. Those participants would likely be experiencing higher than average levels of stress due to their hospital visit and could benefit more from a therapy dog visit. With the online design, participants were asked to rate how likely they would be to allow the dog breed to visit them in a hospital setting, but it may have been challenging for some participants to put themselves in that imaginary situation. An in vivo design would have resulted in the participant physically interacting with that dog breed if they wanted, potentially increasing attention to the exposure videos. Finally, an in-person design may have also resulted in a more diverse participant pool.

Despite the large sample size of the study, another major limitation of this study was the mean (22.73 years) and mode (19 years) of the participants. The same concern was noted in Addonisio (2020) and although modifications were put in place to combat this limitation, the sample still resulted in relatively young participants. This limitation is noted due to breed popularity across generations. In a sample taken from a nationwide veterinary agency (Banfield Pet Hospital) in 2016, the American Pit Bull Terrier has increased in popularity by 24% in the past decade and was the fifth most common breed at the time. This study did a poor job of capturing the views of individuals born in other generations. This could be particularly important for therapy dog teams who visit assisted living homes.

Future Directions

Dogs have been incorporated into AAI for decades; however, researchers have found little to no mention of how the breed of the dog may impact dog assisted interventions/therapy in

the literature. Results from Addonisio (2020) found cause to further investigate breeds, specifically negatively perceived dog breeds that were rated significantly lower than their "good" reputation counterparts. Although Addonisio (2020) should still be replicated to ensure findings are conclusive, the current study aimed to better understand how to combat negative perceptions of certain breeds. Results from the current study did not find a five-minute breed specific video to be sufficient exposure to significantly increase perception of that breed. Future researchers should consider addressing the limitations in the current study, including making the necessary design modifications.

As mentioned above, future researchers should consider creating a video that is specific to a therapy dog and handler team instead of using a generic video about the breed. It is advised to consider feasibility of implementing a longer video in school or hospital settings where the video may be playing on a loop in a waiting room or hallway. There is no standard protocol on the information that should be included in the video, but the dog should be present for the duration and should be the focal point to some degree. This is to ensure participants have a chance to become acquainted with the dog through parasocial contact.

The current study primarily included college students; however, many therapy dog and handler teams often volunteer at schools, hospitals, and assisted living facilities (Alliance of Therapy Dogs Rules and Regulations, 2023). Future researchers should consider examining other age groups and populations, including those currently in the target setting. This might be especially important given the change in popular dog breeds across generations.

In the past, AAI literature has been particularly susceptible to small sample size, poor design, lack of objective measures, and the "file drawer" effect. The "file drawer" as described by Herzog (2011), is the tendency for unremarkable research outcomes to remain unpublished. It

is important for those who wish to contribute to the literature do so with well-designed research that can be applied to AAI work. It is also important to learn from research that does not yield significant results instead of "filing" the research away in a drawer.

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APPENDICIES

1. Appendix of Measures

1.1 Therapeutic Qualities

<u>On a scale from 1-6, Echo makes you feel…</u>
(Strongly Disagree) (Disagree) (Somewhat disagree) (Somewhat agree) (Agree)
(Strongly Agree)

A. Calm/Relaxed
B. Safe/comfortable
C. Hopeful

<u>On a scale from 1-6, Echo is...</u>
(Strongly Disagree) (Disagree) (Somewhat disagree) (Somewhat agree) (Agree)
(Strongly Agree)

A. Nonjudgmental
B. Approachable
C. Engaging

1.2 Likelihood Measure

On a scale from 1-10, how likely are you to allow Echo the (Rottweiler, Pit Bull Terrier, Mastiff) and their handler to visit you in a hospital setting?
0 (*Not at all likely*) to 10 (*Extremely likely*)

1.3 Personality Measure (M5-120)

M5-120 Questionnaire

David M. McCord, Ph.D., Western Carolina University

Name: _____ Age: _____ M F Date:

- Without spending too much time dwelling on any one item, just give the first reaction that comes to mind.

- In order to score this test accurately, it is very important that you answer *every* item, without skipping any. You may change an answer if you wish.

- It is ultimately in your best interest to respond as honestly as possible. Mark the response that best shows how you really feel or see yourself, not responses that you think might be desirable or ideal.

Turn the page over now

M5-120 Questionnaire		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	Accurate **Page 2**
1	Worry about things.	O	O	O	O	O
2	Make friends easily.	O	O	O	O	O
3	Have a vivid imagination.	O	O	O	O	O
4	Trust others.	O	O	O	O	O
5	Complete tasks successfully.	O	O	O	O	O
6	Get angry easily.	O	O	O	O	O
7	Love large parties.	O	O	O	O	O
8	Believe in the importance of art.	O	O	O	O	O
9	Use others for my own ends.	O	O	O	O	O
10	Like to tidy up.	O	O	O	O	O
11	Often feel blue.	O	O	O	O	O
12	Take charge.	O	O	O	O	O
13	Experience my emotions intensely.	O	O	O	O	O
14	Love to help others.	O	O	O	O	O
15	Keep my promises.	O	O	O	O	O
16	Find it difficult to approach others.	O	O	O	O	O
17	Am always busy.	O	O	O	O	O
18	Prefer variety to routine.	O	O	O	O	O

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		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	Accurate
19	Love a good fight.	O	O	O	O	O
20	Work hard.	O	O	O	O	O
21	Go on binges.	O	O	O	O	O
22	Love excitement.	O	O	O	O	O
23	Love to read challenging material.	O	O	O	O	O
24	Believe that I am better than others.	O	O	O	O	O
25	Am always prepared.	O	O	O	O	O
26	Panic easily.	O	O	O	O	O
27	Radiate joy.	O	O	O	O	O
28	Tend to vote for liberal political candidates.	O	O	O	O	O
29	Sympathize with the homeless.	O	O	O	O	O
30	Jump into things without thinking.	O	O	O	O	O
31	Fear for the worst.	O	O	O	O	O
32	Feel comfortable around other people.	O	O	O	O	O
33	Enjoy wild flights of fantasy.	O	O	O	O	O
34	Believe that others have good intentions.	O	O	O	O	O
35	Excel in what I do.	O	O	O	O	O
36	Get irritated easily.	O	O	O	O	O
37	Talk to a lot of different people at parties.	O	O	O	O	O
38	See beauty in things that others might not notice.	O	O	O	O	O
39	Cheat to get ahead.	O	O	O	O	O
40	Often forget to put things back in their proper place.	O	O	O	O	O
		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	Accurate

M5-120 Questionnaire		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	**Page 3** Accurate
41	Dislike myself.	O	O	O	O	O
42	Try to lead others.	O	O	O	O	O
43	Feel others' emotions.	O	O	O	O	O
44	Am concerned about others.	O	O	O	O	O
45	Tell the truth.	O	O	O	O	O
46	Am afraid to draw attention to myself.	O	O	O	O	O
47	Am always on the go.	O	O	O	O	O
48	Prefer to stick with things that I know.	O	O	O	O	O
49	Yell at people.	O	O	O	O	O
50	Do more than what's expected of me.	O	O	O	O	O
51	Rarely overindulge.	O	O	O	O	O
52	Seek adventure.	O	O	O	O	O
53	Avoid philosophical discussions.	O	O	O	O	O
54	Think highly of myself.	O	O	O	O	O
55	Carry out my plans.	O	O	O	O	O
56	Become overwhelmed by events.	O	O	O	O	O
57	Have a lot of fun.	O	O	O	O	O
58	Believe that there is no absolute right or wrong.	O	O	O	O	O
59	Feel sympathy for those who are worse off than myself.	O	O	O	O	O
60	Make rash decisions.	O	O	O	O	O
61	Am afraid of many things.	O	O	O	O	O
62	Avoid contacts with others.	O	O	O	O	O
63	Love to daydream.	O	O	O	O	O
64	Trust what people say.	O	O	O	O	O
65	Handle tasks smoothly.	O	O	O	O	O
66	Lose my temper.	O	O	O	O	O
67	Prefer to be alone.	O	O	O	O	O
68	Do not like poetry.	O	O	O	O	O
69	Take advantage of others.	O	O	O	O	O
70	Leave a mess in my room.	O	O	O	O	O
71	Am often down in the dumps.	O	O	O	O	O
72	Take control of things.	O	O	O	O	O
73	Rarely notice my emotional reactions.	O	O	O	O	O
74	Am indifferent to the feelings of others.	O	O	O	O	O
75	Break rules.	O	O	O	O	O
76	Only feel comfortable with friends.	O	O	O	O	O
77	Do a lot in my spare time.	O	O	O	O	O
78	Dislike changes.	O	O	O	O	O
79	Insult people.	O	O	O	O	O
80	Do just enough work to get by.	O	O	O	O	O
		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	Accurate

M5-120 Questionnaire					
		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	Accurate
81	Easily resist temptations.	O	O	O	O	O
82	Enjoy being reckless.	O	O	O	O	O
83	Have difficulty understanding abstract ideas.	O	O	O	O	O
84	Have a high opinion of myself.	O	O	O	O	O
85	Waste my time.	O	O	O	O	O
86	Feel that I'm unable to deal with things.	O	O	O	O	O
87	Love life.	O	O	O	O	O
88	Tend to vote for conservative political candidates.	O	O	O	O	O
89	Am not interested in other people's problems.	O	O	O	O	O
90	Rush into things.	O	O	O	O	O
91	Get stressed out easily.	O	O	O	O	O
92	Keep others at a distance.	O	O	O	O	O
93	Like to get lost in thought.	O	O	O	O	O
94	Distrust people.	O	O	O	O	O
95	Know how to get things done.	O	O	O	O	O
96	Am not easily annoyed.	O	O	O	O	O
97	Avoid crowds.	O	O	O	O	O
98	Do not enjoy going to art museums.	O	O	O	O	O
99	Obstruct others' plans.	O	O	O	O	O
100	Leave my belongings around.	O	O	O	O	O
101	Feel comfortable with myself.	O	O	O	O	O
102	Wait for others to lead the way.	O	O	O	O	O
103	Don't understand people who get emotional.	O	O	O	O	O
104	Take no time for others.	O	O	O	O	O
105	Break my promises.	O	O	O	O	O
106	Am not bothered by difficult social situations.	O	O	O	O	O
107	Like to take it easy.	O	O	O	O	O
108	Am attached to conventional ways.	O	O	O	O	O
109	Get back at others.	O	O	O	O	O
110	Put little time and effort into my work.	O	O	O	O	O
111	Am able to control my cravings.	O	O	O	O	O
112	Act wild and crazy.	O	O	O	O	O
113	Am not interested in theoretical discussions.	O	O	O	O	O
114	Boast about my virtues.	O	O	O	O	O
115	Have difficulty starting tasks.	O	O	O	O	O
116	Remain calm under pressure.	O	O	O	O	O
117	Look at the bright side of life.	O	O	O	O	O
118	Believe that we should be tough on crime.	O	O	O	O	O
119	Try not to think about the needy.	O	O	O	O	O
120	Act without thinking.	O	O	O	O	O
		Innacurate	Moderately Innacurate	Neither	Moderately Accurate	Accurate

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1.4 Demographics

1. What is your age, in years?

2. Which of the following labels best describes your current gender identity?

    Transgender Woman   Transgender Man   Woman   Man   Genderqueer

    Non-binary   Agender   Not listed (write-in) _____.   Prefer not to answer

3. What is your ethnic identification?

    Asian   Black   Hispanic   Native American   White   Other option that
    is not listed here

4. Have you owned a dog before?

    Yes   No

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

6. On average, how much daily interaction do you have with dogs?

    Sliding scale from 0 hours to 12 hours

7. How much do like you like dogs?

    1 (I hate dogs)   10 (I love dogs)

8. How much do you like others' dogs?

    1 (I hate others' dogs)   10 (I love others' dogs)

9. Have you ever participated in Animal Assisted Therapy (AAT) or Animal Assisted
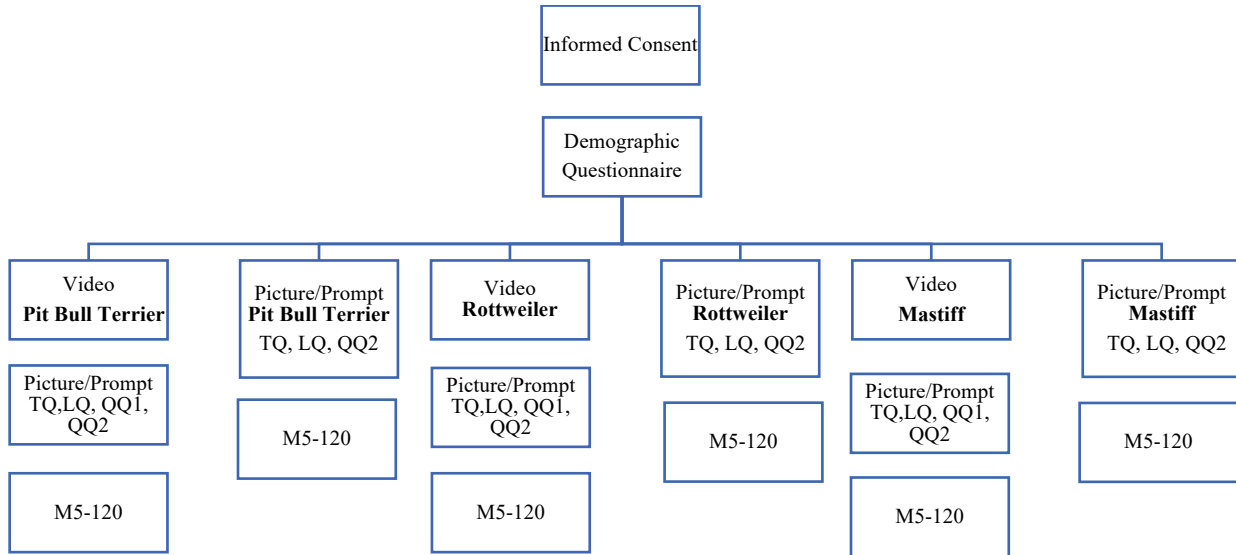   Intervention (AAI)?

    Yes (when?) No

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

    Yes   No

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

2. Appendix of Procedures

2.1 Procedures Flow Chart

Note. TQ: Therapeutic Qualities, LQ: Likelihood Question, QQ1: "Please describe your experience with watching the video (e.g., thoughts, feelings, comments, things that stood out).", QQ2: "What other information would you like to know about Echo?"

2.2 Prompt

Echo is an adult (Rottweiler, Pit Bull, Mastiff) that works with their handler to provide animal assisted intervention (AAI). AAI consists of a certified therapy animal and handler team visits with an individual or group of individuals with the purpose of therapeutic improvements for those involved. Echo has been a certified therapy dog through a nationwide reputable dog certification company, for 2 years. Echo enjoys treats, playing fetch, and visiting patients and staff in the hospital who are having a difficult time.

2.3 Pictures of Dogs

A. Pitbull Terrier

B. Rottweiler

C. Mastiff

2.4 Exposure Video Links

A. Pitbull Terrier Link: https://www.youtube.com/watch?v=w4xrStyHVAM&t=1s

B. Rottweiler Link: https://www.youtube.com/watch?v=gXqw14CBdSY&t=63s

C. Mastiff Link: https://www.youtube.com/watch?v=OWaTSbNGpc0&t=1s

Note. All videos were edited to be exactly five minutes and five seconds.

3. Appendix of Tables

3.1 Participant Demographics

Descriptive Statistics Table

Demographics	Participants					
	n	%	Mean	SD	Min	Max
Age	-	-	22.73	9.3	18	78
Gender Identity						
Woman	125	58.1	-	-	-	-
Man	75	34.9	-	-	-	-
Transgender Woman	1	0.5	-	-	-	-
Transgender Man	3	1.4	-	-	-	-
Genderqueer	2	0.9	-	-	-	-
Non-binary	6	2.8	-	-	-	-
Agender	1	0.5	-	-	-	-
Not Listed (Fill-in)	1	0.5	-	-	-	-
Ethnicity						
Asian	8	3.7	-	-	-	-
Black	18	8.4	-	-	-	-
Hispanic	11	5.1	-	-	-	-
Native American	2	0.9	-	-	-	-
White	170	79.1	-	-	-	-
Not Listed (Fill-in)	6	2.8	-	-	-	-
Negative Experience with a Dog [a]	96	44.7	-	-	-	-
Believe Some Dogs Have A Negative Reputation [a]	198	92.1	-	-	-	-
Owned a Dog [a]	183	85.1	-	-	-	-

Note. $N = 215$

[a] Reflects the number and percentage of participants answering "yes" to this question.

3.2 Two-Way MANOVA

Two-Way Multivariate Analysis of Variance (MANOVA) Examining the Interaction Effect of dog Breeds and Exposure on Therapeutic Qualities and Likelihood of Working with a Dog

Effect	$F(4, 406)$	η^2
Interaction Effect of IVs on Combined DVs	.78	.00
Exposure Isolated	.45	.00
Breed Isolated	.12	.02

Note. Reduction from alpha .05 to .01 and the use of Wilks' Lambda was utilized to account for violations.

3.3 Pearson Correlation

Correlations for Therapeutic Qualities and Personality

Variable	1	2	3	4	5	6
1. Therapeutic Qualities	—					
2. Extroversion	.10	—				
3. Agreeableness	.19**	.06	—			
4. Conscientiousness	.04	.19**	.34**	—		
5. Neuroticism	−.84	−.41**	−.10	−.46**	—	
6. Openness to Experience	−.22**	.16*	.38**	−.10	.16*	—

*$p < .05$. **$p < .01$.