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Campus Tails: An On-Campus Therapy-Dog Pilot Program and Feasibility Study

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Campus Tails:

An On-Campus Therapy-Dog Pilot Program and Feasibility Study

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DISSERTATION

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Dedication

Though they will never read it or even know that it exists, I dedicate this research to the dogs who have given their love so readily to the humans who have needed it so much.

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Abstract

College counseling centers are treating more cases of depression and anxiety than ever. Yet, despite endorsing symptoms, many students are disinclined to engage in counseling. Research shows that interacting with a therapy dog has positive psychological effects, including decreasing symptoms of depression and anxiety. I developed an on-campus therapy-dog pilot program (Campus Tails) as an alternative to counseling for students suffering from symptoms of depression and/or anxiety as measured by subscales of the Counseling Center Assessment of Psychological Symptoms-34 (CCAPS-34) Version 2009. I implemented Campus Tails at Bowdoin College in Brunswick, Maine during the spring of 2013. Fourteen participants met with a designated therapy dog for a weekly animal-assisted activity (AAA) session. I used a concurrent mixed-methods design to study the effects of AAA sessions on symptoms. I collected quantitative data via CCAPS-34 subscales, and analyzed it using a single-case design. I collected qualitative data via face-to-face semi-structured interviews, and analyzed it via interpretative phenomenological analysis (IPA). I hypothesized that symptoms would decrease. I wanted to know what psychological themes were present in participants' narratives of their experience, and if an ongoing therapy-dog program might be feasible for Bowdoin College. Findings suggest that my hypotheses were confirmed. Psychological themes are categorized as directly or indirectly increasing the perception of wellbeing. Findings suggest that further consideration of the feasibility of an ongoing therapy-dog program is justified. This study fills a gap in the literature measuring the effects of AAA on college students' mental health.

Keywords: animal-assisted activity (AAA), college students, single-case research design, interpretative phenomenological analysis (IPA)

Chapter 1

Statement of the Problem

In recent years, college counseling centers located in all parts of the United States have reported a significant increase of students seeking mental health services (Benton, Robertson, Tseng, Newton, & Benton, 2003; Eiser, 2011; Harper & Peterson, 2005; Kadison & DiGeronimo, 2004; Kitzrow, 2003). As might be expected, depression and anxiety are the two most common psychiatric disorders for which college students seek help (B. Hershberger, personal communication, September 12, 2012; Eiser, 2011). In the sixteen years between 1988 and 2004, the reported cases of depression in college students doubled (Benton et al., 2003; Kadison & DiGeronimo, 2004). In addition, approximately 25% of students endorsed feeling anxious and overwhelmed by the academic and social pressures in their life (Harper & Peterson, 2005).

College students who suffer from psychological problems frequently perform poorly on academic tasks. They may also have difficulties with affect regulation, suffer from low self-esteem, and struggle with problems in their interpersonal relationships. Thus, they may be more likely to drop out of school (Kitzrow, 2003). Despite all of this, many students are disinclined to seek mental health counseling when it is indicated (Eisenberg, Downs, Golberstein, & Zivin, 2009). Some students experiencing psychological symptoms may seek relief through participating in on-campus group wellness-oriented classes such as yoga (Adams & Puig, 2008) or meditation (Shapiro, Schwartz, & Bonner, 1998) as alternatives to traditional counseling.

As a way of making counseling more broadly appealing to a wider range of students, several schools (e.g., University of Florida, Appalachian State University, North Dakota State University) are integrating therapy dogs into traditional counseling services on a part-time basis

(B. Hershberger, personal communication, September 13, 2012). Loyola University has a full-time therapy dog that lives on campus and makes late-night dorm calls for students in emotional distress (D. deBoer, personal communication, September 6, 2012). Others schools (e.g., Tufts University, Caldwell College, Kent State University, Bowdoin College) host occasional on-campus therapy-dog "meet-and-greet" events during high-stress times, such as midterms or finals week, to help students relieve stress and have fun (Associated Press, 2010; Jersey Tomato Press, 2010; Sweeney, 2008). This study on a therapy-dog pilot program for a college campus fills a gap in the literature measuring the effects of animal-assisted activities (AAAs) on college students' mental health.

Background

Research shows that interacting with therapy dogs in a diverse assortment of settings has positive effects on humans' physical and mental health. For example, studies indicate that patients in medical (Halm, 2008; Kaminski, Pellino, & Wish, 2002) and psychiatric (Bardill & Hutchinson, 1997) hospitals benefit from therapy-dog visits in a variety of ways including experiencing improvements in mood (Halm, 2008; Kaminski et al., 2002), and increased perception of safety (Bardill & Hutchinson, 1997). In addition, the presence of a therapy dog has been shown to help some clients feel more comfortable while they are in a clinical session (Granger & Kogan, 2006). Therapy-dog visits decrease loneliness (Banks & Banks, 2002), improve mood and sociability, and decrease agitation in elderly residents in long-term care and assisted-living facilities (Churchill, Safaoui, McCabe, & Baun, 1999; Filan & Llewellyn-Jones, 2006). Prison-based therapy-dog training programs have been shown to improve participants' work ethic (Strimple, 2003), increase their self-esteem, decrease symptoms of depression (Moneymaker & Strimple, 1991; Walsh & Mertin, 1994), decrease violence among inmates (Moneymaker & Strimple, 1991), and decrease recidivism rates (Merriam-Arundi as cited in

Strimple, 2003). Therapy-dog reading programs in elementary schools have been shown to dramatically improve students' reading skills (Jalongo, Astorino, & Bomboy, 2004), and increase self-mastery and global interest in learning (Paradise, 2007).

Thus far, a few studies show that college students who interact with therapy dogs experience both psychological (Adamle, Riley, & Carlson, 2009; Aiken & Cadmus, 2011; Folse, Minder, Aycock, & Santana, 1994; Wilson, 1991) and physiological (Somerville, Kruglikova, Robertson, Hanson, & MacLin, 2008) benefits. Furthermore, Adamle et al. (2009) found that first-year college students *want* the opportunity to interact with therapy animals on campus. Additional clinically-oriented quantitative research is needed (e.g., Granger & Kogan, 2006; Kruger, Trachtenberg, & Serpell, 2004) to show whether or not interacting regularly with a therapy dog may provide sustained symptom reduction for students who are suffering from depression and/or anxiety, but are not engaged in traditional mental health counseling. Additional qualitative research is also needed to provide descriptive narratives of students' experiences of interacting with a therapy dog.

Significance and Purpose of the Research

An on-campus therapy-dog program is an innovative idea for intervening with students who suffer from symptoms of depression and/or anxiety, but are disinclined to engage in traditional counseling services. I developed and implemented *Campus Tails*, a therapy-dog pilot program and feasibility study, at Bowdoin College in Brunswick, Maine during the spring semester of 2013. Fourteen Bowdoin College students who met inclusion/exclusion criteria (see Chapter 3) participated in the pilot program. Participants interacted with a registered therapy dog for one 50 to 60-minute session each week. I asked them to participate for a minimum of eight weeks, which is consistent with the widely recommended dose for brief psychotherapy

(Shapiro et al., 2003). I then evaluated the efficacy of the pilot program using a concurrent mixed-methods research design.

This research project expands the existing literature on AAT and AAAs with college students in two ways. First, it provides quantitative data via the Counseling Center Assessment of Psychological Symptoms (CCAPS-34) Version 2009 regarding the therapy dog's effect on depression and anxiety in college students. Second, it provides qualitative data on students' narrative accounts of their experiences of interacting with a therapy dog. These sets of data will help Bowdoin stakeholders (e.g., Counseling Services, Student Affairs) decide if adding a therapy-dog program would effectively fill a gap in mental health services on campus, and if such a program is feasible.

Statement of the Research Hypotheses and Questions

The following two research hypotheses apply to the quantitative segment of this project. The two research questions and their relevant subquestions apply to the qualitative segment.

- Hypothesis 1: Symptoms of depression as measured by the Depression subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails.
- Hypothesis 2: Symptoms of anxiety as measured by the Generalized Anxiety subscale and/or the Social Anxiety subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails.
- Question 1: What psychological themes are present in Campus Tails' participants' descriptive narratives of their involvement in the program?
    - Subquestion 1: What attracted them to the program?
    - Subquestion 2: Did they report perceived change as a result of participation?

    - Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?
    - Subquestion 4: Did I reach students who had symptoms of depression and/or anxiety who did not want to go to counseling?
- Question 2: Is an on-campus therapy-dog program feasible at Bowdoin College?
    - Subquestion 1: What did I do to recruit participants? How much time and energy went into it?
    - Subquestion 2: What did I do to recruit therapy dogs? How much time and energy went into it?

Definition of Key Terms

- An animal-assisted therapy (AAT) is a therapy in which a clinician uses an animal in treatment to improve outcomes (Delta Society, n.d.b; Kruger, Trachtenberg, & Serpell, 2004; Zilcha-Mano, Mikulincer, & Shaver, 2011).
- An animal-assisted activity (AAA) is an activity in which an animal is used to enhance a person's perception of his or her quality of life (Delta Society, n.d.c).
- A therapy dog is a dog who is trained and registered for the purpose of interacting with humans in any therapeutic setting (Delta Society, n.d.d).

Summary

Cases of depression and anxiety among college students have risen dramatically over the past two decades, and more students than ever before are in treatment for psychiatric disorders at college counseling centers all over the country. Yet, research shows that many students are disinclined to engage in traditional counseling (Eisberg et al., 2009). Those students may benefit from access to effective alternatives to traditional on-campus mental health counseling services.

In an effort to extend self-care options, many colleges and universities offer wellness-oriented classes as an outreach of their health and counseling services programs. In addition, several college counseling centers have added AAT with therapy dogs to their traditional counseling services. Several colleges and universities have also added AAAs to their outreach efforts by offering therapy-dog "meet-and-greet" events to give students opportunities to relieve stress and have fun during particularly high-stress times.

In order to determine whether or not AAAs with therapy dogs may provide college students with effective alternatives to traditional counseling, more quantitative (e.g., Granger & Kogan, 2006; Kruger et al., 2004) and qualitative research is needed. My study addresses this gap in the literature.

Chapter 2: A Review of the Literature

In the following literature review, I provide details about the history of the human-dog connection that are relevant to my study, beginning with speculations regarding why humans and dogs became friendly, and facts about the various roles that dogs have played in human culture over time. I then describe attachment theory and the notion of the triune brain as they relate to the emotional bond shared between humans and dogs. I emphasize the significance of nonverbal communication, and the value of interspecies play in the formation of the human-dog bond. Next, I outline the development of animal-assisted therapy (AAT) utilizing dogs, and I make the important distinction between AAT and an animal-assisted activity (AAA). AAT has been shown to be beneficial to human health and wellbeing. I describe some of the psychological and physiological benefits researchers and clinicians have been documenting since AAT was first developed as a field of study. I review the literature describing the benefits of AATs and AAAs as they are practiced in various medical, mental health, correctional, and educational settings. I conclude the chapter with a discussion of current applications of AAT and AAAs using therapy dogs on the campuses of colleges and universities. Finally, I describe the ways in which my study will add to the existing research on the benefits of AAAs using therapy dogs on college campuses.

A Brief History of the Human-Dog Connection

Archeological evidence suggests that humans and dogs have shared a special connection for tens of thousands of years. Most scholars agree that, from the beginning, the relationship has been "voluntary and mutually beneficial" (Wendt, 1996, p. 96). In this section, I highlight several historical details about the human-dog connection that are relevant for my study.

The long journey with "man's best friend." Recent deoxyribonucleic acid (DNA) testing suggests that humans and dogs have a history that goes back at least 80,000 years (Wendt, 1996), and perhaps more than 100,000 years (Corrieri, 2008). Some scholars suggest that the relationship between humans and dogs initially formed around the enterprise of hunting. It may have been that dogs helped early humans in hunting for food by separating individual prey animals from the herd and surrounding them in order for human hunters to kill them, as depicted by some ancient cave art. Alternatively, it may have been that dogs simply followed human hunters or lived near human settlements in order to scavenge for scraps of food, as suggested by the ethologist Konrad Lorenz (Wendt, 1996). Either way, the bonding between the two species has been a work in progress since the Stone Age. And, as early humans migrated from Africa to parts of southwest Asia and eventually to Europe, they took their dogs with them (Wendt, 1996).

Domesticated dogs in ancient Egypt. Relatively more recent records from the banks of the Nile River in ancient Egypt (72,000 years or so later), show that the dog, now fully domesticated and trained, rose to its highest position of dignity in recorded history (Walsh, 2009; Wendt, 1996). Early Egyptians utilized dogs to help with their daily physical burdens by having them pull carts and herd livestock. They also declared that dogs had healing powers and customarily employed dogs as co-therapists to accompany and collaborate with human healers as they attended to sick and wounded people in temple hospitals. Most notably, early Egyptians entrusted dogs to guard their children and royalty, and even honored them by memorializing them with pharaohs in sacred tombs (Wendt, 1996). From that point in time forward, dogs have been regularly utilized as bodyguards for royal families, nobility, and shopkeepers in many parts of the world because of their faithful and obedient nature, their keen visual and olfactory senses, and their quick reflexes, agility and strength (Wendt, 1996).

The archetype of the therapy dog evolves. Dogs were utilized as part of the "therapie naturelle" in providing care for handicapped people in Gheel, Belgium during the 9th century in Europe. Nine centuries later, during the 1790s, the Quaker Society of Friends established the York Retreat for the pervasively mentally ill in York, England as an alternative to the treatment that was routinely provided at the insane asylums of the day (Catanzaro, 2003; Pichot & Coulter, 2011). Rather than using the harsh physical restraints that were commonplace in those days, the York Retreat utilized interactions with animals, including dogs, to help teach patients healthy caregiving skills for nurturing others, and skills for mastering self-control.

By the 1800s, many inpatient psychiatric institutions in England and in parts of Europe provided patients with opportunities to interact with pets as part of their treatment protocol (Serpell, 2006). For example, dogs in Vienna, Austria were being trained to guide the blind and, beginning in 1867, animals were used as part of the protocol for treating epileptic patients at the Bethel Institution for the mentally ill in Bielefield, Germany (Wendt, 1996). Beginning in 1919, dogs began to be utilized in the United States when the St. Elizabeth Hospital in Washington, DC introduced animal visits as a regular part of their treatment for mentally ill patients.

During the 20th century, people began developing standardized techniques for training dogs to provide specific, therapeutically-focused services for humans. By the 1970s, several veterinary programs at American universities included classes emphasizing topics on the human-animal bond (Hines, 2003). The notion that animals could provide various forms of emotional support to humans was beginning to catch on within mainstream institutions.

Summary. Dogs have played various roles in human culture for tens of thousands of years. Throughout recorded history, images and words have indicated that humans and dogs have developed a relationship that is mutually beneficial and mutually adoring. Although the

archetype of the therapy dog dates back at least seven to eight thousand years to ancient Egypt when dogs inhabited temple hospitals, it is only in the past 120 years or so that humans have created specialized therapy-dog programs.

A Psychological Perspective of the Human-Dog Bond

What is it that makes many humans feel such a strong bond with the dogs in their lives and feel so compelled to spend time with them? In this section, I postulate that attachment theory and the attributes of the paleomammalian brain provide a basis for understanding our psychological pull toward other animals, especially dogs. I also discuss some of the characteristics of nonverbal communication that make our relationships with dogs mutually rewarding.

The human-dog bond and attachment theory. Attachment theory is "an ethological approach" to understanding human relationships (Bowlby, 1988, p. 3). Ethologists study animals in their natural habitats for the purpose of gaining an understanding of their instinctive behaviors (Sable, 2004). Attachment theory is based on the notion that people of all ages have an "inherent need for secure connection to others" in order to feel a sense of safety and belonging, particularly during periods of acute or chronic psychological distress (Sable, 2000, p. xii). Feeling psychologically secure and accepted by specific others that we experience as attachment figures helps us regulate distressing psychobiological states that create an uncomfortable sense of hyper- or hypo-arousal in our nervous system (Ogden, Minton, & Pain, 2006). In fact, according to the principles of attachment theory, emotions such as fear and anxiety actually activate particular instinctive behaviors, referred to as the attachment system, in humans (Sable, 2004) and other animals.

The most prominent characteristic of attachment behavior is proximity seeking. Just the simple act of being close to an attachment figure can alleviate negative emotions and make us

feel comfortable (Sable, 2000). When an attachment figure is attuned to our emotional state and responds to our need for proximity, our attachment to him or her is supported and strengthened. Sable (2000) says it best in stating that there is nobody more responsive "than a devoted dog that just wants to be close by and is always attuned" to those with whom he or she feels emotionally connected (p. 308). Whether in times of emotional distress or in times of joyfulness, dogs, in their constant readiness to be close and attentive, can meet many of our emotional and physical needs for attachment.

Affect regulation, college students, and therapy dogs. Attachment theory can be thought of as a way of understanding the mechanism of affect regulation (Sable, 2004). Our instinctive psychological need to feel a secure bond, safety, and belonging with attachment figures begins during infancy and persists throughout our lifetime. When those basic psychological needs are threatened, we may become anxious about being separated from an attachment figure, become fearful of losing him or her, or become sad as a result of a real or perceived loss. At that point, our attachment system becomes implicitly activated and we seek ways in which to regulate those distressing psychobiological states (Ogden et al., 2006; Sable, 2004).

Separation from attachment figures, including beloved family pets, is a predictable feature of going away to college. This transitional period of emerging adulthood marks a time when many young people may yearn for a greater sense of personal freedom, but feel inadequately prepared to contend with the intense feelings that emerge from being far from home, and what is familiar (Kadison & DiGeronimo, 2004). Particularly at the beginning of each semester, many students endure a period of emotional turmoil as they adjust or readjust to being away from attachment figures. This sense of separation and isolation can be especially

painful for first-year students. For them, the campus environment and all of the people occupying it are likely to be unfamiliar.

Many students feel emotionally overwhelmed by the physical, social, and academic stressors associated with being at college (Kasison, & DiGeronimo, 2004). However, a significant number of them are reluctant to seek counseling to help them reduce symptoms (Eisenberg et al., 2009). For some, connecting with a friendly therapy dog may provide a combination of proximity, comforting presence (safety), and nonverbal emotional support (belonging), thereby providing attachment-related functions by supplying some of the missing elements of attachment relationships back home (Beck & Madresh, 2008; Melson, 2002). In such cases, regularly spending time with a therapy dog may provide the student with an opportunity to co-regulate his or her distressing psychobiological states enough to sufficiently smooth out the bumpy transition to campus life (Adamle et al., 2009).

Interspecies attachment. The theory of the triune brain, from the field of neurobiology, provides a way for us to conceptualize the mechanisms that make the emotional bond between humans and dogs both possible and meaningful (Corrieri, 2008). According to this theory, the human brain consists of three hierarchical, evolutionarily-stratified complexes: the protoreptilian brain, the paleomammalian brain, and the neomammalian brain (Ploog, 2003). Of those three complexes, the paleomammalian brain is most relevant to a discussion of interspecies attachment between humans and dogs because it comprises the limbic system, which is common to all mammals and is considered to be the brain's emotional center.

The paleomammalian region of the brain is structurally symmetrical in all mammals. The concept of functional symmetry, which is based on the discovery of structural symmetry, provides a framework for hypothesizing why dogs often seem able to scan, interpret, and respond

to the subtle nonverbal emotionally-laden cues humans convey before making noticeable movements, gestures, or auditory statements (Lewis, Amini, & Lannon, 2000; Walsh, 2009). In short, this symbiotic reaction occurs because the limbic system in any paleomammalian brain is emotionally resonant with other limbic systems (Corrieri, 2008; Lewis et al., 2000), and, as such, it is responsible for activating the attachment system (Allen, 2001, as cited in Sable, 2004). This capacity for mutual emotional attunement and exchange is called "limbic resonance" (Lewis et al., 2000, p. 63). The behavioral developments that occurred in mammals with the formation of the paleomammalian brain included the provision of maternal care to offspring, audio-vocal communication between mothers and offspring, and "play, which seems to be indispensible for the development of social behavior" (Ploog, 2003, p. 489).

Nonverbal communication. The relationship between humans and dogs is established by proximity, touch, vocalizations, and interspecies interactions (Hart, 1996; Myers, 1996). For example, humans may stroke a dog's fur and talk to him or her by giving voice commands (e.g., "come," "sit," "stay"), telling him or her bits of information about ordinary things ("I'm going out for a while and I'll be right back."), or sharing worries ("Nobody on the soccer team likes me, but you do, right?"). Although dogs can sometimes be very expressive with nuanced vocalizations or barking, they cannot have a linguistic dialogue with humans per se. Consequently, the dialogue we have together involves fewer words and more proximity, body contact, eye contact, interactive motion, and limbic resonance (Hart, 1996; Myers, 1996). This is not bad news. On the contrary, it is good news because "nonverbal communication is authentic and difficult to influence deliberately," which means that neither the human nor the dog can fake liking the other (Prothmann et al., 2005, p. 43). Furthermore, nonverbal communication influences affect regulation more than verbal communication does (Prothmann et al., 2005).

The power of interspecies play. One of the most mutually gratifying, psychologically beneficial, and fun activities that humans and dogs do together is play. Findings from the field of affective neuroscience indicate that playing activates regions in the brain that are common across mammalian species (Panksepp, 1998, 2007). According to Panksepp (2007), "because of advances in psychopharmacology, based on homologous neurochemical systems in all mammalian species, many cross-species emotional predictions can now be generated from animal brain research to human physiological responses" (p. 236). Based on this research, we can say that play not only encourages social engagement, it makes humans and other mammals, including dogs, feel happy (Panksepp, 1998, 2007). During roughhousing play together, both humans and dogs make "happy-type sounds, outwardly resembling laughter" (Panksepp, 2007, p. 236). Dog laughter sounds like a "breathy exhalation" that is qualitatively different from panting, and elicits more play from other dogs (Milius, 2001, p. 55), and, I would hypothesize, from humans, too. Laughter has been shown to buffer the effects of stress and produce positive emotions in humans (Kuiper & Martin, 1998). It also promotes intraspecific bonding and may promote interspecific bonding (Panksapp, 2007; Valeri, 2006). One of the many wonderful qualities that dogs have is that they make us laugh with their endearing antics, and by engaging us in play (Valeri, 2006).

Play is a great way to distract our mind away from stressors and toward having fun (Kaminski et al., 2002). Connecting with another species through play can diminish the sense of difference or isolation that humans may feel between themselves and others (Irvine, 2001). In a study designed to determine if dogs respond to bids for playing expressed by humans, Rooney, Bradshaw, and Robinson (2001) identified bowing and lunging as successful interspecific play signals that occurred spontaneously in both humans and dogs.

Summary. Attachment theory provides us with an ethologically-informed conceptual framework for understanding the psychological bond between humans and dogs (Geist, 2011; Zilcha-Mano et al., 2011). It explains why just being around a dog can help us feel better when we are experiencing a variety of distressing negative emotions including homesickness—that dreaded combination of emotions that many college students are all too familiar with. The concept of the triune brain (Corrieri, 2008; Ploog, 2003) and the notion of limbic resonance (Lewis et al., 2000) provide us with a neurobiologically-informed conceptual framework for understanding why humans and dogs seem to naturally emotionally resonate with one another without the use of words to make our intentions or our meaning clear. The common language between humans and dogs is primarily nonverbal, and play is a significant feature of our interactions together.

A Brief History of Animal-Assisted Therapy Featuring Dogs

While dogs have made good companions for tens of thousands of years (Wendt, 1996), it turns out that they make good therapists, too. In this section, I describe the lineage of the therapy dog, and the development of animal-assisted therapy and animal-assisted activities.

Documenting a tradition. The first record of using dogs for psychotherapeutic purposes comes from the Society of Friends who included dogs in their treatment protocol with pervasively mentally ill people at the York Retreat in York, England (Catanzaro, 2003; Levinson, 1965; Pichot & Coulter, 2011). During the 19th century, the practice of using animals for the purpose of improving human's mental health began to catch on (Serpell, 2006). In fact, Freud himself is known to have his chow chow, Jofi, accompany him in his consulting room (Gay, 1988). However, animal-assisted therapy (AAT), as we now understand it, was more formally established in the 1960s by the American child psychologist Boris M. Levinson (Serpell, 2006; Wilkes, 2009; Zilcha-Mano, Mikulincer, & Shaver, 2011).

Dr. Levinson (1969) developed animal-assisted intervention techniques with his dog, Jingles, while working with his young clients. He documented the clinical outcomes of his interventions and recommended his method of working with dogs as co-therapists to other clinicians (Serpell, 2006; Wilkes, 2009; Zilcha-Mano et al., 2011). Though a variety of animals (e.g., horses, cats, hamsters) are currently utilized by clinicians who practice AAT, dogs are the most commonly chosen animal co-therapists (Nimer & Lundahl, 2007; Parshall, 2003). This may be because dogs easily give and receive affection through proximity, touch, and body language, and play. In addition, they readily respond to human voice commands and hand gestures (Hart, 1996).

A new field of study. In 1977, a group of medical and veterinary doctors founded the Delta Foundation in Portland, Oregon as one of the first organizations in the world to promote research on the effects of animals in human's lives. The Delta Foundation changed its name to the Delta Society in 1981. During the late 1980s and into the 1990s, they developed "the first comprehensive, standardized training in animal-assisted activities and therapy for volunteers and health-care professionals" (Delta Society, n.d.a). The Delta Society changed its name to Pet Partners in 2012 to better reflect their mission of creating human-animal teams that work together to make people's lives better. Pet Partners continues to provide training for people who are interested in registering their dog (or other animal) to provide a variety of therapeutic services in many health, mental health, educational, and correctional settings.

Animal-assisted therapy. The Delta Society/Pet Partners established the standard of using the term AAT to describe any approach to therapeutic interventions in which an animal is utilized by a clinician as part of the treatment process in a manner that is goal-directed and intended to improve therapeutic outcomes (Delta Society, n.d.b; Kruger et al., 2004;

Zilcha-Mano et al., 2011). Treatment planning using AAT includes setting individualized therapeutic goals for the client, and regularly assessing and documenting progress toward meeting those goals (Delta Society, n.d.b). In traditional psychotherapeutic contexts, AAT can be integrated into many theoretical frameworks including person-centered, cognitive-behavioral, behavioral, psychodynamic, existential, and solution-focused therapies (Chandler, Portrie-Bethke, Minton, Fernancdo, & O'Callaghan, 2010). According to the Delta Society/Pet Partners (n.d.b), AAT is essentially "designed to promote improvement in human physical, social, emotional, and/or cognitive functioning."

Animal-assisted activities. In practice, an animal-assisted activity (AAA) may look similar to AAT (e.g., petting or playing fetch with a dog). However, AAAs do not have to be part of a formal treatment plan and are not designed to meet particular therapeutic goals. AAAs are intended to enhance the recipient's perception of his or her quality of life but are less structured than AAT interventions are (Delta Society, n.d.c).

Summary. It may be that dogs, in their steady willingness to bestow companionship, have always provided therapeutic benefits to humans. Maybe that is one of the reasons why the human-dog connection has spanned so many years and traversed so many miles. Today, human therapists are working with canine co-therapists in a variety of settings with clinically-oriented intentions. Therapists are conducting research about the effects of their work, documenting their findings, and advancing the field of animal-assisted therapy. Our scientific understanding of the psychological and physiological benefits of AAT and the mechanisms that make it effective is still developing. However, findings to date indicate that AAT shows great promise as an adjunct to traditional psychotherapy or as a primary therapy for some mental health clients (Beck & Katcher, 2003; Parshall, 2003). Although there are many theories and activities associated with

AAT, the one feature common to all of the interventions is the addition of an animal—usually a dog—to help achieve treatment goals.

Benefits of Animal-Assisted Therapy for Clients

Clinicians use AAT in a variety of ways depending on their theoretical framework and the client's needs. According to Chandler et al. (2010), most clinicians using AAT claim that it helps them build rapport with a client, strengthens the therapeutic alliance, and offers them a way to work creatively. For example, the presence of a friendly therapy dog in the consulting room has an anxiolytic effect on some clients, thereby making treatment a less stressful process. Some clients, especially children, may find it easier to talk to a therapy dog than to the clinician, and may tell the clinician stories about their life that incorporate the dog. Therapy dogs can be utilized in helping clients build social and relational skills. They can also play a role in increasing clients' sense of confidence and self-mastery. In some cases, playing with the dog may be offered as a reward for good behavior during the session (Chandler et al., 2010). AAT has many potential applications that add breadth and depth to the therapeutic process.

The practice of AAT is growing and, as more clinicians and researchers document their observations and findings, so is the literature about its beneficial psychological and physiological effects (Cirulli, Borgi, Berry, Francia, & Alleva, 2011; Fine, 2006; Parshall, 2003). AAT is used by a variety of clinicians (e.g., psychologists, social workers, psychiatrists, nurses, dentists, physicians). It is used with people of all ages (Kruger et al., 2004; Palley, O'Rourke, & Niemi, 2010), and is effective in the treatment of many mental health problems including (but not limited to) anxiety, mood, eating, posttraumatic stress, conduct, and oppositional defiant disorders, suicidality, sexual abuse, and attachment disorders (Kruger et al., 2004).

Psychological benefits. Most of the research on the psychological benefits of AAT has focused on its potential to help decrease loneliness, depression, stress, and anxiety (Friedmann &

Tsai, 2006). Another notable emphasis in the AAT research has been on animals as social support (e.g., Allen, Blascovich, Tomaka, & Kelsey, 1991; McNicholas & Collis, 2006; Netting et al., 2013; Serpell, 2006; Wilkes, 2009; Willens, 2013). However, there is evidence suggesting that AAT has positive effects ameliorating the symptoms of pervasive developmental disorders including autism (Cirulli et al., 2011; Green, 2012; Martin & Farnum, 2002; Nimer & Lundahl, 2007), and behavioral problems in children (Kogan, Granger, & Fitchett, 1999; Levinson, 1965, 1969). Interaction with animals also encourages empathy and social development in children (Fawcett & Gullone, 2001; Melson, 2003). AAT has been found to reduce signs of agitation in patients with Alzheimer's disease (Filan et al., 2006; Churchill et al., 1999). It has also been found to provide comfort and emotional support to sexually abused children who are in therapy. According to Reichert (1998), the presence of an animal provides a sense of safety for the children through the process of disclosing the story of their abuse.

Loneliness. Banks and Banks (2002) found that even short sessions (e.g., 30 minutes) a week of AAT with a dog significantly decreases the loneliness experienced by residents in long-term care facilities. In addition, therapy dog visits encourage more social interactions among residents, both during and after the visit, thereby increasing interpersonal interactions and decreasing isolation (Wells, 2009). Animal-assisted activity (AAA) programs, such as Project Pooch at the McLaren Juvenile Correctional Facility in Oregon, have been found, similarly, to reduce loneliness and increase the perception of wellbeing in juvenile inmates (Wells, 2009).

Depression and self-esteem. A meta-analysis of five studies conducted on American adults ranging from 47 to 85 years old showed that both AAT and AAAs with a dog produces significant improvements in the symptoms of depression (Souter & Miller, 2007). In a similar vein, Folse et al. (1994) examined the effects of AAT using two dogs with 44 traditional-age,

mixed gender college undergraduates who met criteria for depression as measured by the Beck Depression Inventory (BDI). They found AAT to be effective in reducing symptoms of depression and report that some students enthusiastically expressed gratitude for being allowed to participate in the study. Another study on Pets as Therapy (PAT), an AAA program utilizing women inmates to train dogs for the elderly and people with disabilities, showed a reduction of symptoms in inmates suffering from depression as measured by the Institute for Personality and Ability Testing (IPAT) depression scale. The study also showed that inmates who participated in the program experienced increases in self-esteem as measured by the Coppersmith Self-Esteem Inventory (CSEI), and increases in feelings of self-efficacy as reported by the program participants themselves (Walsh & Mertin, 1994). Kaminski et al. (2002) similarly found that AAT improved the mood and affect of children hospitalized for various medical reasons.

Stress and anxiety. AAT with a therapy dog has been found to reduce symptoms of anxiety in hospitalized psychiatric patients with a wide range of disorders including psychosis, eating disorders, conduct disorder, and posttraumatic stress disorder (Bardill & Hutchinson, 1997; Barker & Dawson, 1998). AAT has also been associated with decreased symptoms of anxiety in hospitalized cardiac patients (Cole, Gawlinski, Steers, & Kotlerman, 2007). Interestingly, AAT has also been found to reduce perceived stress in the healthcare professionals who are present in the settings where AAT is being conducted with patients (Barker, Knisely, McCain, & Best, 2005). Wilson (1991) concluded that simply petting a dog reduced anxiety in a group of mixed-gender, mixed-race undergraduate college students as measured by the Spielberg State Trait Anxiety Inventory (STAI), and blood pressure monitoring; results were not dependent on the student having grown up with pets.

Physiological benefits. Studies have shown that the presence of a therapy dog has a positive effect on the physiological indicators of stress (e.g., blood pressure, heart rate, behavioral distress, cortisol levels) experienced by children (Friedmann & Tsai, 2006; Kaminski et al., 2002), and adults (Barker, Knisely, McCain, Schubert, & Pandurangi, 2010) in various controlled experimental situations. AAT has also been found to decrease the stress hormone cortisol and increase hormones (e.g., beta endorphin, oxytocin, prolactin, and phenylacetic acid) and neurotransmitters (e.g., dopamine) that contribute to positive feeling states (Odendaal, 2000), and increase immune functioning (Charnetsky, Riggers, & Brennan, 2004). Cole et al. (2007) found that interactions with a therapy dog are associated with improved cardiopulmonary functioning in hospitalized patients with heart failure. Tsai, Friedmann, and Thomas (2010) found that interactions with a therapy dog had a positive effect on the systolic blood pressure of medically hospitalized children. AAT with a dog has also been found to be associated with a decrease in the perception of pain in children hospitalized for medical reasons (Stoffel & Braun, 2006; Sobo, Eng, & Kassity-Krich, 2006) and in children undergoing dental procedures (Havener et al., 2006).

Summary. Our multidisciplinary knowledge of the benefits of AAT is growing as more clinicians from a variety of health and mental health fields and clinical settings practice AAT and conduct research on its psychological and/or physiological effects. Studies and observations of AAT indicate that it is useful in treating a wide range of psychological problems, including those that are most often encountered in college counseling services such as loneliness, depression, stress, and anxiety (B. Hershberger, personal communication, September 12, 2012). The presence of a therapy dog has been associated with decreased physiological markers of stress and

increased physiological markers of wellbeing for people of all ages, and across a vast range of diagnostic concerns.

AAT, AAA, and Therapy Dogs in Various Settings

Therapy dogs are showing up in unexpected places, such as the sites of earlier terrorist attacks (Kuriansky, 2003), and dentist offices (Vocus, 2010). However, the most common settings for AAT, AAAs, and therapy dog visits are hospitals, nursing homes, prisons, and schools. The fact that AAT and AAAs are used in medical, mental health, correctional, and educational settings reflects the versatility of their therapeutic effects. It also suggests that the psychological and physiological benefits of spending time with a therapy dog may be universal, regardless of context. In this section, I describe the effects of AAT as it is practiced in some common settings.

Hospitals. Patients in both medical (Halm, 2008; Kaminski et al. 2002) and psychiatric hospitals benefit from AAT (Bardill & Hutchinson, 1997). In addition to functioning as a welcome diversion, AAT improves the mood and increases positive affect of children receiving inpatient medical treatment for a variety of conditions (Halm, 2008; Kaminski et al., 2002), it also has the effect of making the hospital environment seem more normal (Halm, 2008). Adolescents in a psychiatric inpatient unit reported that the therapy dog that visited with them made them feel accepted and safe, and gave the unit a more friendly feeling (Bardill & Hutchinson, 1997).

Nursing homes. Therapy dogs frequently visit the residents of long-term care and assisted-living facilities for the elderly. Residents who spend time with the dogs report improved mood and positive feelings, and improved sociability (Churchill et al., 1999; Cirulli et al., 2011; Geisler, 2004). Many facilities have live-in therapy dogs who freely mingle with the residents throughout the day and night (Geisler, 2004). Nursing home residents who suffer from Sundown

Syndrome or Alzheimer's disease show a decrease in agitation during and after AAT (Churchill et al., 1999; Filan et al., 2006).

Prisons. Some prisons (e.g., Coleman Federal Complex in Florida, the U.S. penitentiaries in Kansas and Kentucky, McLaren Juvenile Correctional Facility in Oregon, and the Ohio Reformatory for Women) have recently developed AAA programs that involve the inmates in training puppies and/or shelter dogs to become therapy or service dogs for other people (Strimple, 2003; Walsh & Mertin, 1994). The programs have been shown to improve the work ethic of participants. Upon release from prison, some former inmates have completed veterinary technician programs, or have become certified as dog trainers or dog groomers and established a career as a result of program participation (Strimple, 2003).

Prison-based AAA programs have also been shown to increase self-esteem and self-efficacy, and decrease depression (Moneymaker & Strimple, 1991; Walsh & Mertin, 1994). One study found that AAA program participants at McLaren Juvenile Correctional Facility had a recidivism rate of zero, leading to a reduction of correction-related costs for the state of Oregon (Merriam-Arduini as cited in Strimple, 2003). A study on the People, Animals, Love (PAL) program at the Lorton Correctional facility in Virginia showed that program participation was associated with a lower rate of inmate-to-inmate altercations. In addition, when program graduates were released from prison they continued to be less aggressive to others when compared to inmates who did not participate in the program (Moneymaker & Strimple, 1991).

Elementary schools. School-based AAT programs are increasing in popularity as research indicates that there are educational benefits of AAT and AAA for school-age children (Friesen, 2010; Jalongo et al., 2004). For example, therapy dogs have been shown to help young children learn to read by nonjudgmentally listening to them practice sounding out words, and by

responding quickly and correctly to words such as *sit* (Friesen, 2010), thereby instilling a sense of self-mastery. The Reading Education Assistance Dogs (R.E.A.D.) program is specifically designed to facilitate reading proficiency in young students. Research on R.E.A.D. shows that students gain two to four grade levels in their reading ability by participating in the program (Jalongo et al., 2004). In addition to improving reading skills, participants of AAT reading programs develop a more positive attitude about learning in general, participate more in a variety of classroom activities, develop better critical thinking skills, and become more self-confident (Paradise, 2007).

Colleges and universities. Therapy dogs are also making appearances on college and university campuses across the country. Most often, the dogs are brought to campus for "meet-and-greet" sessions by volunteers in the community associated with a therapy-dog organization, such as Pet Partners, Therapy Dogs International, or Therapy Dogs Inc. Students report that spending time with the dogs provides them with a much-needed stress-relief break, especially when the dogs are present during midterms or finals (Associated Press, 2010; Jersey Tomato Press, 2010; Sweeney, 2008). Adamle et al. (2009) conducted a study to determine if first-year college students were interested in having pet therapy available to them on campus. They found that many students reported missing beloved pets, and thought pet therapy would help fill a void and ameliorate the emotional pain they experienced. Students also stated that they thought pet therapy would provide them with some of the emotional support they needed during the stressful adjustment period of transitioning to college life.

One therapy dog, Monty, a small brown border terrier mix, has made a name for himself outside of the typical "meet-and-greet" format. Monty was part of a pilot project done at the Yale Law School library (Lalwani & Tan, 2011). The library ran a three-day event during the

spring semester of 2011 to see if a therapy dog program would provide stress relief to students, and if the program would make the library more welcoming, thereby increasing library usage. During the pilot, small groups of three or four students were able to "check Monty out" and spend time with him in a designated library room for scheduled periods of time. Findings indicated that student interest in spending time with Monty exceeded expectations, and that student feedback about the program and Monty's presence in the library was positive. Monty paved the way for other college library therapy dogs including Cooper, a shih-tzu who started his job at Harvard Medical School's Countway Library in June 2011 when he was four years old (Junge & MacDonald, 2011).

Some universities have begun to offer students AAT as part of traditional counseling services. For example, there are therapists at the University of Florida, Appalachian State University in North Carolina, and North Dakota State University who bring their therapy dogs to work with them on specific days. The dogs are present in the office while the therapists meet with clients (B. Hershberger, personal communication, September 13, 2012). Finally, at least one university campus has a permanent, live-in, full-time therapy dog. Tivo, a 5-year old black Labrador retriever, is part of the Wellness Center staff at Loyola University. According to the center's associate director, David deBoer, PhD, Tivo was brought on staff as a campus therapy dog because of the tremendous success the university had with visiting therapy dogs. Dr. deBoer reports that Tivo "is often able to comfort students in crisis and help them deescalate when human therapists can't get through" (D. deBoer, personal communication, September 6, 2012).

Summary. Therapy dogs bring their considerable talents to many types of medical, mental health, correctional, and educational settings. Regardless of the setting, evaluations of the effects that the dogs have on the people they interact with remain consistent. Again and

again, research and observations confirm that AAT and AAAs improve people's lives in ways that are both measurable and immeasurable.

Implications for the Direction of the Proposed Study

As previously noted, research on the psychological effects of AAT and AAA has emphasized the constructs of loneliness, depression, stress, anxiety (Friedmann & Tsai, 2006), and social support (Allen et al., 1991; McNicholas & Collis, 2006; Netting et al., 2013; Serpell, 2006; Wilkes, 2009; Willens, 2013). These are the same psychological problems reported by most college students seeking counseling (B. Hershberger, personal communication, September 12, 2012). However, many students struggling with these issues may not seek help from a therapist because of a personal stigma associated with being in treatment (Eisenberg et al., 2009). AAT or AAAs may provide a viable alternative to traditional counseling services for students who are aware that they need emotional support, but are disinclined to engage in counseling. For them, a relationship with a therapy dog who furnishes friendly, nonverbal attunement may provide a safe haven, increasing their ability to regulate distressing psychobiological states, and even enjoy themselves.

A small body of literature indicates that students are interested in AAT and AAAs (Adamle et al., 2009), and that they experience both psychological (Adamle et al., 2009; Aiken & Cadmus, 2011; Folse et al., 1994; Wilson, 1991) and physiological (Somerville et al., 2008) benefits from interactions with therapy dogs. This concurrent mixed-methods study expands upon the existing literature on AAT and AAAs with college students in two ways. First, it provides quantitative data regarding each participant's symptoms of depression and anxiety as measured by the Depression, Generalized Anxiety, and Social Anxiety subscales of the Counseling Center Assessment of Psychological Symptoms-34 (CCAPS-34) Version 2009. Second, it provides qualitative data regarding the psychological themes present in participants'

narratives of their experience in the program. In addition to contributing to the growing body of literature on AAT and AAAs with college students, these sets of data are available to Bowdoin College stakeholders who may use them to inform decisions regarding adding AAT and/or AAAs as adjunctive options to current mental health services on campus. Findings reported in this study may also have implications for other college campus mental health services.

Chapter Summary

The human-dog connection has been a vibrant part of human culture for tens of thousands of years. During our history together, dogs have played important roles (e.g., laborer, guardian, healer, friend) in the lives of humans. Given all of the ways in which humans have come to rely on dogs for various types of support, it comes as no surprise that there may be a psychological explanation for the bond humans feel with the dogs in their lives. Attachment theory, the concept of the triune brain, and the notion of limbic resonance provide a conceptual framework for understanding why dogs elicit such a strong instinctual pull for many humans, why many humans experience dogs as positively affecting their wellbeing, and why the neocortical distraction of verbal dialogue is unnecessary in the connection between the two species. The bond that many humans feel with dogs and other animals has led to the development of the field of AAT and AAAs, both of which capitalize on the beneficial effects that interactions with animals have on humans across multiple settings.

Chapter 3: Campus Tails Therapy-Dog Pilot Program

The Campus Tails therapy-dog pilot program (Campus Tails) was designed as a feasibility study with rolling enrollment. I conducted it three days a week during the spring semester of 2013 for 13 weeks (allowing for spring break) with the help of two registered therapy dogs, Emma, an eight-year-old border collie mix, and Lucy a four-year-old boxer. Screening for student participation began at the start of the spring semester. Thirty-two students inquired about participating in Campus Tails: 25 attended a participant-screening interview and 15 met criteria for participation and enrolled in the program. Participation terminated when (a) a student decided to withdraw from the program, (b) a student missed two consecutive scheduled sessions with a therapy dog without contacting the researcher, or (c) the semester ended. I added new participants as space allowed until the last 4 weeks of the semester. Fourteen of the 15 enrolled participants attended therapy-dog sessions. One participant withdrew from the program after the initial screening interview due to time constraints.

Program Objectives

Campus Tails offered students a therapeutic alternative to traditional counseling services. Program objectives included helping students decrease symptoms of depression and/or anxiety, as indicated by self-report and as measured by the CCAPS-34, and increase perceived wellbeing, as indicated by self-report, and as inferred by the CCAPS-34.

Mental Health of American College Students

Over the past 15 to 20 years, college counseling centers across the country have reported a rise in students seeking services (Benton et al., 2003; Eiser, 2011; Harper & Peterson, 2005; Kadison & DiGeronimo, 2004; Kitzrow, 2003). Students in treatment for severe psychological problems increased from 16% in 2000 to 44% in 2010 (Eiser, 2011). Depression and anxiety are

the most common serious disorders for which students seek therapy. One national survey of students found that 45.6% of respondents endorsed feeling hopeless and 30.7% endorsed having psychological symptoms that interfered with normal daily functioning (Eiser, 2011). From 1988 to 2004, the reported cases of depression in college students doubled (Benton et al., 2003; Kadison & DiGeronimo, 2004). One study showed that the rate of students in treatment for depression increased nearly 5% from 2001 to 2005 (Harper & Peterson, 2005). Studies also suggest that students are more anxious than ever. One study found that 25% of students endorse feeling overwhelmed by academic and other life pressures (Harper & Peterson, 2005).

Students experiencing psychological problems may exhibit poor academic performance, have difficulty with affect regulation, and have problems with interpersonal relationships. In addition, their behaviors may negatively affect other students (Kitzrow, 2003). Unresolved psychological issues may increase the likelihood that a student will drop out of school (Kitzrow, 2003). Studies show that students who receive psychological support experience increased perception of wellbeing (Eiser, 2011; Kitzrow, 2003), improved academic performance, and decreased rates of attrition (Backels & Wheeler, 2011; Eiser, 2011; Harper & Peterson, 2005; Kitzrow, 2003).

This campus. The therapists at the Bowdoin Counseling Services (CS) provided a record-breaking number of counseling sessions—3,228—during the 2011–2012 academic year. The increase represented a 4.6% rise over the number of counseling sessions provided during the 2010–2011 academic year, which had also been a record-breaking year of 3085 sessions. Overall, CS accommodated 24% of Bowdoin students during 2011–2012. According to the director of CS, Bernie Hershberger, PhD, the number of students counseled at CS over the past eight years has increased by 30%, and the number of sessions has increased by 80%

(Hershberger, 2012). In keeping with national trends, depression and anxiety are among the most common psychological problems encountered at Bowdoin CS (B. Hershberger, personal communication, September 12, 2012).

Help-seeking behavior among college students. Students who fear a personal stigma associated with being in mental health treatment may be disinclined to seek help from traditional college counseling services (Eisenberg et al., 2009). Therefore, although the increased rate in students' use of counseling services is remarkable, it may still underestimate the level of students' need for psychological support. Students who are reluctant to go to counseling but who suffer from symptoms such as loneliness, difficulty concentrating, irritability, depressed mood, and/or increased worrying, may be more willing to turn to alternative therapeutic modalities for the support they need.

Alternatives to therapy. Many college counseling centers have begun offering adjuncts or alternatives to traditional counseling services in the form of self-care options. For example, it is common to see yoga classes offered on college campuses as a way to achieve wellness and address "physical, psychological, and spiritual" suffering (Adams & Puig, 2008). Studies indicate that yoga may be useful in treating the symptoms of depression. However, more research is needed to determine if it is useful in treating the symptoms of anxiety (Adams & Puig, 2008). Another self-care option that is becoming popular on many campuses is group meditation offerings, such as mindfulness and loving-kindness (metta) meditation. Mindfulness practice may increase positive and decrease negative emotional states (Brown & Ryan, 2003), and mindfulness-based stress reduction classes have been shown to reduce symptoms of depression and anxiety in college students (Shapiro et al., 1998), reduce their perceived level of stress (Hoffman, 2006), and increase perceived wellbeing (Hoffman, 2006; Trotter, 2010).

Loving-kindness meditation has been shown to increase perceived wellbeing (Corcoran, 2007; Pryor, 2012).

Bowdoin offerings and remaining needs. Bowdoin College has a beautiful yoga room in the Peter Buck Center for Health and Fitness. Yoga classes, including Power Yoga, Vinyasa Flow Yoga, and Yin Yoga, are regularly available (Bowdoin 2012b). Students who are interested in practicing meditation in a group setting will find regular offerings of both mindfulness and loving-kindness meditation meetings.

Yoga and meditation may provide useful alternatives to counseling for some students suffering from psychological symptoms. However, neither provides them with the opportunity to connect with another being who gazes at them with "adoring eyes," and, without words, communicates, "I am so glad to see you. . . . I care about you. You are wonderful. I have nothing more important to do, no one I'd rather be with" (Straus, 2010, p. 219–220). Adoring eyes may activate attachment-related experiences, such as proximity seeking, safety, and belonging, that may be missing from a student's life. They may also be a bridge that emotionally connects humans with dogs, thereby enabling the attuned dog's mere presence to help in the co-regulation of negative psychobiological states.

In addition to all of the alternatives to traditional counseling that many colleges and universities already offer, students report that they actually *want* to have some form of on-campus pet therapy available to them (Adamle et al., 2009). In some ways, an on-campus therapy-dog program may offer students a combination of the best of what traditional counseling and self-care alternatives have to offer. For example, similar to being in traditional counseling, regularly spending quality one-on-one time with a therapy dog may provide students with the experience of being seen and relationally known by an attentive, engaging other. Second, unlike

human therapists, therapy dogs do not require a student to disclose potentially uncomfortable, dysregulating narrative information about his or her internal state(s) or personal history. Therefore, a student is able to be present with a therapy dog primarily in an embodied, nonverbal, nonlinguistic way that is similar to the self-care, therapy alternatives.

Program Setting

Campus Tails was conducted at Bowdoin College in Brunswick, Maine in association with Bowdoin Counseling Services. Bowdoin College has approximately 1,750 undergraduate students. The class of 2016 consists of 497 students of which 49% are men, 51% are women, and 32% are students of color. The classes of 2013, 2014, and 2015 have similar demographics (Bowdoin College, 2012a). The campus comprises 215 acres and has many walking paths, cross-country running trails, fields, and open green spaces.

Target population

Campus Tails was designed as an alternative to traditional counseling. It was intended for students who were not engaged in therapy, but nonetheless identified as having symptoms consistent with depression and/or anxiety as indicated by self-report and as measured by the CCAPS-341. Prior to enrollment, I screened students interested in participating in Campus Tails for program eligibility (see inclusion/exclusion criteria below).

Participant recruitment. On the first day of the spring semester, I placed participant recruitment posters (Appendix A) on campus in public places (e.g., Health Services, library, dining halls, Peer Health, Center for Learning, the psychology department, Women's Resource Center, bookstore, Safe Space). I also placed ads in the Bowdoin Orient (the campus newspaper), and the Bowdoin Daily Sun (the electronic newsletter).

[1] Data on the CCAPS-34 is presented in Chapter 4: Methods.

Screening procedures. I invited students who inquired about Campus Tails to an information meeting followed by a screening interview. During the meeting, I explained the screening process and provided a verbal introduction to the research project (Appendix B). The introduction included a description of (a) the purpose of the research, (b) the duration of the research, eligibility, and the number of participants, (c) procedures to be followed during the research, (d) potential physical and psychological risks of being involved in the research, (e) procedures taken to minimize risks, (f) potential benefits of being involved in the research, (g) the right to withdraw from the research, (h) limits of confidentiality, (i) data storage procedures, and (j) compensation for participation. I asked students who remained interested in being screened for the program to read and sign an Informed Consent form (Appendix C). I advised them that signing the form indicated they were volunteering to be screened for the research, and potentially participate in it. In order to further ensure that students understood what they were volunteering for, I gave them an opportunity to ask questions at any point during the meeting and/or screening interview about the project and about signing the form. Those who consented to being screened signed the Informed Consent form in duplicate. I kept one signed form for my research records, and gave the other to the participant. I then gave potential participants a brief, semi-structured interview (Appendix D), and asked them to complete the computerized version of the CCAPS-34. I received 32 inquiries by email, text, or telephone from students who were interested in getting more information about Campus Tails. I interviewed 25 students. Fifteen students met inclusion/exclusion criteria and enrolled in the program. One student withdrew from enrollment after the initial screening interview and before beginning therapy-dog sessions, citing time constraints. I processed enrollment applications daily in order of receipt.

Inclusion/exclusion criteria. The following criteria outline points I considered to include or exclude students wishing to participate in Campus Tails.

Campus Tails Inclusion criteria. I considered students for participation if they

- were at least 18 years old;
- were enrolled for classes at Bowdoin College;
- reported that they liked dogs and felt comfortable interacting with them; and
- suffered from a moderate to a high level of symptoms of depression and/or anxiety as indicated by self-report and as measured by T-scores on the Depression, Generalized Anxiety, and/or Social Anxiety subscales of the CCAPS-34.

Campus Tails Exclusion criteria. I did not consider students for participation if they

- reported that they were allergic to dogs;
- reported that they had a history of abusing animals;
- were involved in counseling on or off campus;
- reported that they used psychotropic medication(s);
- suffered from an acute mental disorder requiring immediate or intensive care (e.g., major depression, panic attacks, a psychotic disorder, eating disorder, a substance-related disorder)2 as indicated by self-report and as measured by severely elevated scores on the Depression, Generalized Anxiety, Social Anxiety, Eating Concerns, Hostility, or Alcohol Use subscales on the CCAPS-34, and/or as assessed by the researcher's clinical judgment3; or
- endorsed current or recent suicidal ideation or intent4.

[2] Students suffering from an acute mental disorder requiring intensive care were referred to CS.
[3] I am a doctoral candidate in clinical psychology with training and experience in working with college students.
[4] Students endorsing suicidal ideation or intent were refereed to CS.

Program Implementation

I enrolled eligible students in Campus Tails on a first-come first-served basis, and had room for up to 25 participants. I notified students about participation eligibility via email. I gave students who accepted the invitation to participate in Campus Tails a numerical identifier (e.g., CT01), which I wrote on a page containing all participants' names. During the project, I kept one document with student codes and names in a locked drawer. I shredded the document after the data collection period was complete. I used student identifiers on student documents. I am keeping printed screening documents and CCAPS-34 records in a locked drawer and will shred them in May 2018 after the five-year data retention period is met as suggested by the American Psychological Association (American Psychological Association, 2010). I routinely deleted email correspondences between students and me after communications were complete.

I asked enrolled participants to commit to a regular weekly time to meet with one therapy dog for a minimum of eight sessions (e.g., Shapiro et al., 2003). I matched each participant with a dog based on scheduling availability and, whenever possible, participant preferences. Participants completed the computerized version of the CCAPS-34 at screening, and again after each therapy-dog session.

Introductory training sessions. In order to ensure that participants had adequate dog-handling skills, I provided each of them with one to three 45-minute basic dog-training sessions. Training sessions included the dog the participant would be meeting with. In addition to ensuring dog-handling safety, training sessions provided the participant and the dog with a warm handoff. During the session(s) I instructed each participant on interacting with a dog using common voice commands (e.g., "sit" "stay" "come," etc.) and hand signals. I instructed him or her on the proper procedure for walking a dog (i.e., dog on the left, loose leash, use both voice and hand commands, stop before crossing the street). I also provided information on the

fundamentals of positive reinforcement and intermittent reward-based training using small treats to encourage the dog's behavioral cooperation, and to avoid overfeeding her. I demonstrated to each participant the correct procedure for picking up dog waste. After a participant satisfactorily demonstrated an understanding of basic dog handling, as evidenced by the ability to engage with the dog in a safe and appropriate manner, he or she was eligible to spend one-on-one time with the dog. Most participants already had good dog handling skills and needed only one introductory training session to satisfy safety protocols. One student had little prior experience with dog handling and needed two training sessions in order to practice her skills, and gain comfort and proficiency.

One-on-one time. Each participant had one regularly scheduled 50 – 60 minute weekly meeting time with his or her assigned therapy dog. During that time, they were allowed to walk or jog on campus and the surrounding area, hang out in the Campus Tails office for quiet time, or sit outside with the dog. Participants agreed to keep the dog on a leash while outside. Activity options were available based on the dog's temperament, daily energy level, and weather conditions. On four occasions during inclement weather, participants opted to stay in the Campus Tails' office and hang out or snuggle and take a nap with their therapy dog. Participants agreed to be available by cell phone while they were with the dog, and agreed to call me immediately if a dog-related problem arose that they needed assistance with. No such problems arose. Participants carried a few treats to use as rewards and a plastic bag to pick up dog waste if necessary. Cell phone contact information was deleted upon each participant's termination from the program.

Termination and exit interview. Although I asked participants to commit to at least eight sessions, I explained that they had the right to terminate participation from Campus Tails

without penalty by withdrawing at any time. Campus Tails concluded on May 17, 2013 at the end of the spring semester. I invited all participants to complete a brief semi-structured exit interview in order to have the opportunity to reflect on their participation experience with me (Appendix E). I randomly selected seven participants to audio record during their exit interview. I transcribed those interviews and qualitatively analyzed them in this research[5].

Support for Campus Tails

Early in the process of conceptualizing Campus Tails, the director of Counseling Services and I solicited support from key campus departments. The program proposal met with initial approval from Counseling Services, Health Services, and the Senior Associate Dean of Student Affairs. In addition, the campus library expressed interest in participating in Campus Tails, and two faculty and one staff member expressed interest in involving their dog in the program.

Resources

The resources needed to operate Campus Tails were minimal. In addition to participants, the program required (a) a director, (b) volunteers to help with logistics and advertising, (c) dogs, (d) office space, and (e) assorted dog supplies.

Human resources. Maureen Sanford, M.A., M.S. was the director of Campus Tails. Maureen is a lifelong dog lover who began volunteering at animal shelters when she was seven years old. She has operated a dog rescue organization for over eight years, and has done basic obedience training with several dogs. Bowdoin College Director of Counseling Services, Bernie Hershberger, PhD, provided program oversight and immediate on-campus supervision. Lindsay Moore, CS administrative coordinator, provided logistical support and advertising assistance as needed. One student provided advertising assistance.

[5] See the Design section in Chapter 4 for more information.

Dogs. I recruited dogs from Bowdoin College faculty and staff because I believed that utilizing dogs from the Bowdoin community would add to the potential benefits to this research by giving a few Bowdoin dog owners a safe, fun, and nearby place for their dogs to spend the day while they were at work. As it turned out, utilizing dogs from the Bowdoin community added richness and community building to this project because some students knew their therapy dog's owner and chose to disclose that they were spending time with the dog. In two cases, disclosure resulted in program participants accepting dog owner's invitations to dog sit/house sit *with pay* while the owners were away. Each participant reported that they were happy for the opportunity to maintain an ongoing relationship with the dog they had become emotionally bonded with during the program.

Each of the two Campus Tails' dogs was registered as therapy dogs by Therapy Dogs Inc. This step ensured that (a) each dog's veterinary records were up to date, (b) the dogs were properly screened for behavioral issues by an objective professional organization not associated with this research, (c) each passed temperament testing, and (d) each met the obedience requirements of the registering organization. Dog owners agreed to keep the dogs clean, groomed, up-to-date with vaccinations, and free of internal and external parasites while they were associated with the program.

I collaborated with dog owners regarding each dog's drop-off and pick-up times to and from the Campus Tails office. I also communicated with them about their dog's physical and mental status on days that she was scheduled to work in order to ensure that the program operated safely for everyone involved. At the end of the dog's workday, I informed the owner of the dog's activities, and physical and mental status.

Dogs require time to rest during the days and therapy dogs should not be overworked

(Kruger et al., 2004). Campus Tails' dogs were available to interact with students for four to five hours a day. I placed limits on high-energy activities based on each dog's apparent preferences. For example, while Lucy was happy to intermittently walk/jog throughout the day Emma preferred mostly to walk and would jog for very brief intervals, then stop to sniff the ground or play in the snow (which participants found very endearing). Participants reported no problems with keeping high-energy activities within a range that each dog tolerated well.

Space and equipment. The sunroom of the Dudley Coe building served as Campus Tails' office. Dogs were in that room with me when they were not with participants. Dog handlers used the office entrance that leads directly outside to enter and exit the building as opposed to using the entrance that leads to the main hallway in order to avoid infringing upon people who did not want to interact with a dog. I kept the office door to the main hallway closed but unlocked while the dogs were in the office. I provided a clean dog bed and fresh water for the dogs while they were in the office. I kept leashes, waste disposal bags, treats, and interactive dog toys (e.g., squeak toys, tug toys) in the office. I cleaned the Campus Tails office daily as necessary.

Program Standards and Ethical Guidelines

- Participants were expected to respect the rights of others on campus who may not have wanted to interact with the dog.
- Participants were expected to keep dogs on a leash when they were outdoors.
- Participants were expected to keep dogs away from kitchen or dining areas.
- Participants were expected to use a dog waste bag to pick up dog waste immediately and put the bag into an outdoor trashcan.
- Participants were expected to treat dogs kindly and be sensitive to their physical needs.

Liability

Risk management was an important consideration for this project, and I took appropriate steps to reduce potential risks to both humans and dogs. For example, I ensured that the dogs were registered as therapy dogs, that the participants were instructed on proper dog handling procedures, and that the dogs were kept on a leash when they were outside of the Campus Tails office. There are, however, always risks associated with interacting with animals. Therefore, I informed students about potential risks as part of the informed consent process (Appendix C). In signing the Informed Consent form, participants acknowledged that they were aware of these risks and voluntarily agreed to accept them as part of participating in the program. Likewise, I informed dog owners of potential risks as part of their informed consent process (Appendix F), and I required them to provide proof of liability insurance coverage through their registering agency for their therapy dog.

Chapter Summary

The prevalence of depression and anxiety in college students has increased dramatically over the past several years; more than 30% of students endorse having psychological symptoms that interfere with their ability to function in their daily lives. The need for on-campus mental health services is higher than ever. Yet, for various reasons, some students may not seek the psychological help they need. Research findings show that alternative therapeutic modalities, including yoga, meditation, AAT and AAAs, decrease symptoms of depression and anxiety. In addition, interacting with a therapy dog may promote positive attachment-related functions in many individuals, which, in turn, increases their ability to better regulate distressing psychobiological states.

The Campus Tails therapy-dog pilot program was offered to Bowdoin college students during the spring semester of 2013. Campus Tails was designed as an alternative to counseling

for students who endorsed having symptoms of depression and/or anxiety, but were not in treatment for their symptoms. Both students and dogs participating in Campus Tails were appropriately screened prior to enrollment. Participants were instructed on proper dog handling procedures prior to being allowed to interact with the dogs one-on-one, and met regularly with the same therapy dog for approximately 50 – 60 minutes each week. Although Campus Tails concluded at the end of the spring semester, students were free to terminate participation earlier.

Early in the process of conceptualizing an on-campus therapy-dog program, I addressed preliminary organizational issues such as receiving initial support for Campus Tails from key campus departments, gathering resources, establishing program standards and ethical guidelines, and considering issues of liability to the best of my ability. Though I anticipated making small adjustments to Campus Tails throughout the project as necessitated by feedback from various campus stakeholders, no requests for programmatic change were forthcoming. Therefore, the program operated according to the original design outlined here.

Chapter 4: Methods

In this chapter, I describe the research design I used for this project beginning with a restatement of the research hypotheses and questions. I then outline the research methods, including descriptions of the sampling methods, research paradigms, data collection procedures, data analysis procedures, and provisions for quality control and validity. Next, I comment on the notion of reflexivity and its application for helping the qualitative researcher identify areas of potential bias in her role as researcher. Finally, I specify the ethical considerations that are relevant to this project. Details regarding the research setting, target population, participant recruitment, participant screening procedures, and inclusion/exclusion criteria for participation were provided in Chapter 3.

Restatement of Research Hypotheses and Questions

- Hypothesis 1: Symptoms of depression as measured by the Depression subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails.
- Hypothesis 2: Symptoms of anxiety as measured by the Generalized Anxiety subscale and/or Social Anxiety subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails.
- Question 1: What psychological themes are present in Campus Tails' participants' descriptive narratives of their involvement in the program?
    - Subquestion 1: What attracted them to the program?
    - Subquestion 2: Did they report perceived change as a result of participation?
    - Subquestion 3: Where they satisfied enough with the program to recommend it to a friend?

    - Subquestion 4: Did we actually reach students who had symptoms of depression and/or anxiety who did not want to go to counseling?
- Question 2: Is an on-campus therapy-dog program feasible at Bowdoin College?
    - Subquestion 1: What did I do to recruit participants? How much time and energy went into it?
    - Subquestion 2: What did I do to recruit therapy dogs? How much time and energy went into it?

Research Design

I used a concurrent mixed-methods research design in this project. A mixed methodology for data collection and data analysis provided a more comprehensive and rich understanding of the psychological effects of participating in Campus Tails (Mertens, 2010). First, a quantitative approach using the single-case design methodology as articulated by Kazdin (2003) enabled me to address my research hypotheses using numerical data to establish patterns over time in the dependent variables (scores on the Depression, Generalized Anxiety, and Social Anxiety subscales on the CCAPS-34). I have illustrated these data in tables and figures, and, in the Quantitative Analysis section of Chapter 5, I have provided the details of data analysis. Analyzing the quantitative data enabled me to infer whether the AAA intervention had a favorable, neutral, or unfavorable effect on each participant's reported symptoms of depression and/or anxiety. Second, a qualitative approach using interpretative phenomenological analysis (IPA) as articulated by Smith, Flowers, and Larkin (2009) enabled me to construct a collective description of the experience of participating in Campus Tails by compiling themes from all of the participants' narratives, thereby answering my first research question and relevant subquestions (Mertens, 2010). In order to answer my second research question, I used notes

from my reflexive journal (e.g., Ortlipp, 2008; Watt, 2007) regarding the process of developing and operationalizing Campus Tails.

Sample. I used a mixed-methods sampling approach for this project. First, I selected program participants by using the purposeful, homogeneous sampling method described by Mertens (2010). Participants represented a small subgroup of the general population in that they were students of Bowdoin College who met criteria for depression and/or anxiety as measured by self-report and the Depression, Generalized Anxiety, and/or Social Anxiety subscales of the CCAPS-34. The principle sample consisted of 14 participants. Second, for the qualitative segment of the research, I used the purposeful random nested sampling method described by Mertens (2010). Specifically, I wrote each participant's name on a 2-inch-by-2-inch piece of paper, folded all of the papers in half twice and put them in an opaque bowl; I then had a friend randomly select seven papers from the bowl. I recorded and analyzed the exit interviews of the participants whose names were drawn from the bowl. I chose a sample size of seven because it is consistent with recommendations for qualitative research using IPA (Smith et al., 2009).

Quantitative section. In this section, I describe the quantitative research paradigm, quantitative data collection procedures, and quantitative data analysis procedures including my process of data analysis. I conclude this section with a description of the provisions I have made in order to ensure quality control and validity for the quantitative segment of this project.

Quantitative research paradigm. The single-case research design (Kazdin, 2003), is part of the postpositivist epistemological tradition in quantitative research. The postpositivist perspective assumes that we can study psychological phenomena by using an objective scientific method in order to make observations, measure relationships between variables, and describe the probability of causes and effects between the variables being studied based on our discoveries

(Mertens, 2010). From the postpositivist perspective, "one reality exists," but the researcher cannot know it completely because she is constrained by "human limitations" (Mertens, 2010, p. 14). Consequently, the researcher must only discuss the probability and strength of her findings as opposed to suggesting the findings have proven anything (Mertens, 2010). The researcher must also strive to assume a neutral attitude during the research process because her "theories, hypotheses, and background knowledge . . . can strongly influence what is observed" (Mertens, 2010, p. 15). In assuming a neutral attitude as much as possible, the researcher ensures that her personal values and biases do not influence the research participants and, ultimately, the research findings.

Quantitative data collection procedures. In order to assess each participant's level of depression and/or anxiety, I collected quantitative data via T-scores from the Counseling Center Assessment of Psychological Symptoms-34 (CCAPS-34) Version 2009 from all participants as part of the screening process and as an outcome measure after each session with a therapy dog. Participants completed the computerized version of the CCAPS-34 consistently using a numerical code, as opposed to their name, as their identifier. I printed the results from each completed CCAPS-34. The documents are stored in a locked drawer, and will be shredded after the five-year data retention period suggested by the American Psychological Association (American Psychological Association, 2010).

The CCAPS-34 is a 34-item multi-dimensional instrument that is designed for use with college students (Lockeet al., 2012). It has seven subscales (Depression, Generalized Anxiety, Social Anxiety, Eating Concerns, Alcohol Use, Academic Distress, and Hostility). I have used T-scores from the Depression, Generalized Anxiety, and Social Anxiety subscales in this study. Students responded to subscale items using a 5-point Likert rating scale. An example of an item

from the Depression subscale is, “I don’t enjoy being around people as much as I used to.” An example of an item from the Generalized Anxiety subscale is, “I feel tense.” An example of an item from the Social Anxiety subscale is “I feel uncomfortable around people I don’t know.”

Subscale scores are reported as T-scores that correspond to percentile indicators. For the purposes of this study, T-scores corresponding with the 15th percentile or below indicate low psychological distress. T-scores corresponding with the 16th to 49th percentile indicate moderate psychological distress. T-scores corresponding with the 50th to the 84th percentile indicate high psychological distress. T-scores corresponding with the 85th percentile or above indicate severe psychological distress (B. Hershberger, personal communication, September 13, 2012). According to the Center for the Study of Collegiate Mental Health (2010), specific percentile cutoffs between “‘healthy’ and ‘unhealthy’ populations” have not yet been determined, but are under consideration for the upcoming version of the CCAPS (p. 4).

I used baseline T-scores corresponding with percentile indicators suggesting a minimum of moderate psychological distress on at least one subscale as criteria for program inclusion. Students whose baseline subscale T-scores corresponded with percentile indicators suggesting mild psychological distress did not meet research inclusion criteria and were eliminated from participation eligibility. Students whose baseline T-scores on any subscale indicated severe psychological distress were eligible for participation after a more thorough clinical interview during which I explored lines of inquiry relevant to the particular subscale of concern.

The CCAPS-34 was developed from the CCAPS-62 in response to requests from college counseling centers for a shorter version of the instrument to use as a repeated measurement. It retains “the structure, interpretability, and construct validity of the CCAPS-62,” and is a “valid measure of psychological symptoms” (Center for the Study of Collegiate Mental Health, 2010, p.

6). According to Locke et al. (2012), the CCAPS-34 has "good discrimination power . . . strong convergent validity, and adequate test-retest reliability" (p. 151).

Quantitative data analysis procedures. One of my goals for this research was to establish the practical, clinical effectiveness of using AAAs, as outlined in the previous chapter, as opposed to establishing statistical effect sizes. To this end, I used a two-condition, A–B single-case research design as a method for analyzing the quantitative data (Kazdin, 2003; Mertens, 2010). The A in this design equation represents the pre-intervention phase of the research and the B represents the intervention phase. The single-case research design offers "a distinct advantage for treatment research . . . [because it] provides the means to investigate treatments empirically with individual" participants (Kazdin, 2003, p. 289), and/or small groups thereby providing a good way to "test the effectiveness of a specific . . . therapeutic technique" (Mertens, 2010, p. 207). In the case of this study, the single-case design allowed me to examine a small number of individual students as one representative group (Nock, Michel, & Photos, 2008).

During phase A of the research, I took one measurement of the Depression, Generalized Anxiety, and Social Anxiety subscales to establish a baseline of each dependent variable. I used the baseline measurements to (a) indicate each participant's beginning degree of reported distress in the domains under study, and (b) predict the degree of distress in each domain that would presumably have continued in the immediate future in the absence of an intervention, thus enabling me to infer the effects of the AAA intervention involved in my research (Kazdin, 2003). Kazdin recommends taking continuous measurements of dependent variables until the data are stable. However, Mertens (2010) states that the number of measurements for establishing a baseline is often determined by what is feasible based on the confines of the particular research

project. For the purposes of this pilot program, it was feasible to take one pre-intervention measurement to establish a baseline of each subscale that could be considered "reasonably consistent" (Kazdin, p. 275).

During phase B of the research, I took measurements of the dependent variables for each participant after his or her weekly session with a therapy dog and recorded the results in a table (Tables 2 – 15 shown in Chapter 5). This continuous assessment approach enabled me to "examine the pattern and stability" of each participant's symptoms over time (Kazdin, 2003, p. 274). In addition, this approach alerted me to participants whose symptoms might have been increasing and, therefore, who may have benefited from a referral to Counseling Services for an increased level of care.

Process of data analysis. I used the table of the dependent variables I developed for each participant to create the data points for his or her line graphs. I then analyzed the plotted data visually and descriptively, as opposed to statistically (Kazdin, 2003). In order to standardize the language in this visual analysis, I use the descriptive terms *small, modest, remarkable, significant, and no change* to describe the shifts in level of performance and the magnitude of change. I use the terms *slow, gradual, moderate, and rapid* to describe the rate of change. As a rough gauge, slow/small corresponds with a change in score of 1 – 2 points, gradual/modest corresponds with a change in score of 3 – 6 points, moderate/remarkable corresponds with a change in score of 7 – 14 points, and rapid/significant corresponds with a change in score of 15 – 22 points.

My quantitative data analysis emphasizes the shifts in level of performance and magnitude of the changes between phases, the rate of changes, and the trend of the data (Kazdin, 2003). The magnitude of change is determined by the change in the mean subscale T-scores

between research phases as illustrated by the line graphs. Visually analyzing the differences in each participant's "average rate of performance" between phases A and B (Kazdin, 2003, p. 292) enabled me to infer whether or not the AAA intervention seemed to have an effect.

The rate of change between research phases is determined by a short or long *latency period* and the shift in level of change between phase A and phase B. According to Kazdin (2003), latency is the "period between the onset or termination of one condition . . . and changes in performance" (p. 294). A change in T-score at the first measurement of phase B on any subscale indicates an immediate shift in level of performance on that measure, which is associated with an immediate change in reported symptoms and a short latency period. No change in the T-score at the first measurement of phase B on any subscale indicates stability in performance, which is associated with no immediate change in reported symptoms and a long latency period. The effect of an intervention is often more apparent with a short latency period (i.e., faster changes in the data). However, as Kazdin points out, "the importance of the latency of the change after the onset of the intervention depends on the type of intervention and the behavior studied" (p. 296). For the purposes of this study, I do not expect to see a rapid rate of change between phases. The rate of change over time is determined by the trend of the line illustrated on the graph representing all of the data points over time, and the shift in level of performance from phase A.

The trend is the course of change in the data of each subscale as illustrated by the slope of the graphed line representing T-scores of reported symptoms over time. A positive trend indicates an increase in reported symptoms, a negative trend indicates a decrease in reported symptoms, and a horizontal line (i.e., stability in the data) indicates no change in reported symptoms over time (Kazdin, 2003).

Quality control and validity. As recommended by Mertens (2010), in order to provide quality control and increase validity in the quantitative segment this research, I used an objective measure (i.e., CCAPS-34) to collect data on the dependent variables under study. In addition, I replicated the AAA interventions with 14 participants "who [differed] on a variety of characteristics" (Mertens, 2010, p. 211). During the data analysis process, I used an external assessor to provide a second opinion of the visual analysis of the graphic data. The external assessor was not otherwise involved in this project and only had access to the anonymous tables and figures. He verified whether or not my interpretations of the data seemed plausible (Mertens, 2010). The external assessment occurred prior to showing findings to participants and stakeholders or publishing them for a wider audience. Finally, I used a continuous assessment approach in this study and made "repeated observations of performance" over time in order to increase validity (Kazdin, 2003, p. 274).

Qualitative section. In this section, I describe the qualitative research paradigm, qualitative data collection procedures, qualitative data analysis procedures, and steps involved in data analysis. I conclude this section with a description of the provisions I made in order to ensure quality control and validity for the qualitative segment of this project.

Qualitative research paradigm. I chose interpretative phenomenological analysis (IPA), as articulated by Smith et al. (2009), as the qualitative paradigm for my research because it allowed me to account for the unique meaning each participant made of his or her experience while enabling me to identify similarities within the group of participants. IPA is part of the constructivist epistemological tradition in qualitative research (Mertens, 2010). The constructivist perspective states that reality is socially constructed and pluralistic because people interpret their experiences based on preexisting understandings of their multiple, intersecting

social and psychological contexts (Appleton & King, 2002; Mertens, 2010). From the constructivist perspective, research findings are created and shaped by interactions between the researcher, her research questions, her interview questions, the research participants, their interpretation of the interview questions, the researcher's interpretations of the participant's responses, and so on. In other words, findings are not discovered as a result of an objective analysis of the data. They emerge from an interactive process that is socially constructed and enacted throughout the project, which is then interpreted by the researcher as one possible reality that makes meaning of the topic being studied (Appleton & King, 2002; Mertens, 2010).

Qualitative data collection procedures. I collected qualitative data from seven randomly-selected participants via one face-to-face semi-structured exit interview at the completion of Campus Tails during the week beginning May 13th of 2013 (Appendix E). With each participant's permission, as obtained from the informed consent process, I recorded his or her exit interview in order to later transcribe it. I designed my interview questions to encourage participants to reflect on the meaning(s) they made of their experience of participating in Campus Tails. I transcribed the recordings at a later date and deleted them from my recording device. I am storing the printed transcriptions in a locked drawer and will destroy them after the five-year data retention period suggested by the American Psychological Association (American Psychological Association, 2010).

Qualitative data analysis procedures. IPA's three conceptual principles, *phenomenology, hermeneutics, and idiography*, make it useful for analyzing how a person makes sense of particular experiences by providing a structure with which to identify *emergent* and *super-ordinate* themes (Smith et al., 2009).

According to Smith et al. (2009), "phenomenology is a philosophical approach to the study of experience" that focuses on what a person's experience of a particular thing is "like," what aspects of the experience "matter," and what the experience means to him or her (p. 11). In assuming a phenomenological perspective, I engaged each participant in conversation that guided him or her to intentionally reflect on and talk about his or her subjective understanding of participating in Campus Tails. The dialogue that ensued enabled me to begin to construct an understanding of the participant's experience based on the way in which the participant him- or herself interpreted it (Mertens, 2010).

"Hermeneutics is a theory of interpretation" that continually links the part to the whole and the whole back to the parts (Smith et al., 2009, p. 21). In analyzing the data, I interpreted the meaning that the participant made of the experience of participating in Campus Tails by identifying some of the psychological themes present in his or her descriptive narrative. This process added another level of meaning to the narrative of which the participant may or may not have been aware. In so doing, it *thickened* (i.e., increased the richness or complexity of) the data (Smith et al., 2009). I then went back to the data to see if the meaning I made through my interpretation made sense when I recontextualized it into the participant's whole narrative. I performed this iterative process during the analysis of each interview, and then again during the analysis of the group of interviews as a whole.

Smith et al. (2009) state that, "idiography is concerned with the particular" (p. 29). I assumed an idiographic perspective when analyzing each person's interpretation of his or her particular experience as it was situated within a particular context. Specifically, I accounted for each participant's interpretation of his or her experience of interacting with a therapy dog while participating in the Campus Tails Therapy-Dog Program on the Bowdoin College campus in

Brunswick, Maine during the spring semester of 2013. I did not account for psychosocial factors such as academic stressors/achievements, interpersonal problems or increased social support, etc., that may have been contributing to the participant's overall lived experience. Attending closely to the particular details of each participant's data using the IPA method enabled me to infer what the general experience of interacting with a therapy dog in the Campus Tails program was like for participants, what aspects of the experience mattered most to them, and what meaning(s) they made of the experience (Smith et al.).

Emergent theme is an IPA classification given to groups of concepts within the raw qualitative data that are similar enough in meaning to be clustered in order to represent the same construct. For example, concepts such as "makes me smile," "I laugh," and "I had a good time" might be clustered under the emergent theme heading "Fun." The emergent theme is a higher level of analysis than the raw data of the concepts in the narratives themselves (Smith et al., 2009). Similarly, super-ordinate theme is an IPA classification given to groups of emergent themes that the researcher has clustered because they all contribute to a larger meaning of something. For example, emergent themes such as "Fun," and "Relaxing" might be clustered under the super-ordinate heading "Stress Relief." The super-ordinate theme is a higher level of analysis than the emergent theme (Smith et al., 2009), and it was the highest level of analysis that I used in this project.

Steps in data analysis. I used the following six steps for data analysis described by Smith et al. (2009):

1. reading and re-reading,
2. initial noting,
3. developing emergent themes,

4. searching for connections across emergent themes,
5. moving to the next case, and
6. looking for patterns across cases.

Step one of the IPA data analysis process involved multiple line-by-line readings of the transcript. This step turned my focus toward the participant and helped me engage the data. Step two involved writing detailed initial impressions of the words that the participant used during the interview and the meaning(s) associated with those words. My initial notes for step two included descriptive, linguistic, and conceptual comments. Step three involved looking for emergent themes in the data, which was a process of making connections between different parts of the participant's story, identifying patterns in the initial notes, and creating themes from the patterns. Step four involved interpreting the ways in which the emergent themes fit together. Not all emergent themes fit together, so I discarded some (Smith et al., 2009).

Smith et al. (2009) identify six specific ways that researchers can look for patterns among emergent themes: (a) *abstraction,* (b) *subsumption,* (c*) polarization,* (d) *contextualization,* (e) *numeration,* and (f) *function*. Abstraction is the process of "identifying patterns between emergent themes and developing . . . a 'super-ordinate' theme" (Smith et al., p. 96). Subsumption is the process of recognizing an emergent theme as holding other themes within it, so the emergent theme itself becomes a super-ordinate theme. Polarization is the process of analyzing the dichotomous differences between emergent themes for potential super-ordinate themes. Contextualization is the process of locating emergent themes within a particular context (e.g., developmental, cultural) that is relevant in the participant's life, and using the context itself as a way of organizing the data. Numeration is the process of noting how often an emergent theme is identified in a participant's data and granting repeated themes more significance.

Function is the process of identifying the role that the emergent theme plays within the context of the participant's life. While the function of an emergent theme may be linked to the meaning the participant makes of it, it may also lead to a deeper level of analysis and new understanding (Smith et al.)

The completion of step four concluded the analytic process for each participant's data. Step five involved moving to the next participant's data and repeating steps one through five until I had analyzed each participant's data. Before moving on to the next participant, I engaged in a reflexive practice (described below) to help me *bracket* (i.e., set aside) the ideas and assumptions I developed while working with the previous participant's data. Step six involved looking for emergent themes occurring across the group of participants' data and making connections at the collective level. The connections made at the collective level became the super-ordinate themes between participants.

Quality control and validity. In order to provide quality control and increase validity in the qualitative segment of the proposed research I used an external reader to provide an independent audit. The reader was not otherwise involved in this project. He had access to the seven anonymous annotated transcripts, the tables of emergent and super-ordinate themes that I constructed from my readings of the transcripts, and the final summary of the qualitative data. He verified the credibility of my qualitative findings by affirming whether or not there was a plausible connection between the transcripts and the emergent and super-ordinate themes (Cresswell, 1998; Smith et al., 2009). The audit occurred prior to showing findings to participants and stakeholders or publishing them for a wider audience.

Reflexivity and the qualitative researcher's role. Reflexivity can be thought of as "a process of self-examination that is informed primarily by the thoughts and actions of the

researcher" (Russell & Kelly, 2002, Reflexivity section para 4). Taking a reflexive stance enabled me to examine my perspective about this research topic and the meanings it has for me based on what I noticed about how I was thinking about and interacting with it as the research progressed. Similarly, I reflexively examined the relationship I had with the research participants, and with the research process itself.

Qualitative researchers often keep a reflexive journal in order to help them identify personal values and beliefs about the research as they continually emerge (Ortlipp, 2008; Watt, 2007). With this in mind, I kept a journal to help me become more aware of my personal biases regarding this project, and to help me document important milestones from the project's inception to its completion. Maintaining awareness of my biases enabled me to bracket them more effectively in order to keep them from unduly influencing all aspects of the research (e.g., interviewing, interpreting the content of interviews, writing; Smith et al., 2009). Reflexivity added transparency to the research process by enabling me to develop critical awareness of my role as researcher. Part of the reflexive researcher's process includes being transparent to participants about her values and beliefs regarding the research (Smith et al., 2009). To this end, I included relevant details of entries from my reflexive journal as comments on the interview transcriptions and included observations about them in the discussion section of this dissertation.

Ethical Considerations

This project was subject to approval by the Antioch University New England Human Research Committee Institutional Review Board (IRB) and the Bowdoin College Research Oversight Committee (ROC). I submitted an application for approval to each institution prior to meeting with potential human participants. As detailed in Chapter 3, students who were interested in participating in Campus Tails were given a comprehensive description of the project. The description included information about potential risks and benefits of participation,

the limits of confidentiality, the voluntary nature of participation and freedom to withdraw from the project at any time without penalty as detailed in the Informed Consent form (Appendix C). It also included information about the implementation of the therapy-dog program itself (Appendix B). Students who wished to be screened for participation eligibility signed the Informed Consent form.

As noted in the Belmont Report (U.S. Department of Health, Education, and Welfare, 1979), I honored the principles of respect for persons, beneficence, and justice. I respected participants by treating them as autonomous agents capable of acting in accordance with their personal goals and self-interest. I listened to their ongoing feedback regarding research-related topics and was prepared to make appropriate procedural changes to Campus Tails in the event that they were necessary. I did not intentionally harm participants, and I took steps to maximize potential benefits and minimize potential physical and psychological risks associated with participation. To this end, I screened both participants and dogs prior to enrollment in Campus Tails and provided participants with ample instruction in proper dog-handling techniques. I assessed risk to participants throughout the project. If a participant suffered from either physical or psychological distress as a result of involvement in this research, I was prepared to make appropriate referrals to on-campus health or mental health providers. I treated participants equally by providing them with comparable opportunities for interacting with a therapy dog and by using the same quantitative and qualitative measures for all participants (U.S. Department of Health, Education, and Welfare, 1979). Finally, I offered participants the opportunity to receive feedback about the findings of the research (Locke et al., 2007).

Chapter 5: Results

I conducted the Campus Tails Therapy-Dog Pilot Program at Bowdoin College during the spring semester of 2013. I received 32 inquiries from students who were interested in obtaining more information about the program. Of those who inquired, 25 met with me for a screening interview. Of those I interviewed, 15 met inclusion/exclusion criteria (see Chapter 3) and enrolled in the program. One student withdrew from enrollment after the initial screening interview and before beginning therapy-dog sessions citing time constraints. Twelve of the 14 students who participated in the program were women and two were men; 12 were Caucasian, one was Asian, and one was Latina. All participants spoke English, and all were between 18 and 22 years old. No participant had a physical disability. I enrolled students into the program until the last four weeks of the semester. I initially asked participants to commit to completing at least eight sessions with a therapy dog in order to strengthen my research findings. However, as the semester progressed, that goal became unattainable. Table 1 shows how many therapy-dog sessions (phase B) each participant attended. The highest number of sessions attended by a participant was 11 and the lowest number of sessions was three.

Table 1

Number of Sessions Each Participant Attended

Participant	Sessions
Participant 1	11
Participant 2	8
Participant 3	7
Participant 4	9
Participant 5	10
Participant 6	6
Participant 7	6
Participant 8	5
Participant 9	5
Participant 10	6
Participant 11	3
Participant 12	4
Participant 13	3
Participant 14	3

Quantitative Data Analysis

At the beginning of this study, I hypothesized that interacting with a therapy dog would prompt a decrease in a participant's experience of symptoms of (a) depression, and/or (b) anxiety. In order to test my hypotheses, I took continuous measurements of symptoms of depression, generalized anxiety, and social anxiety by administering the CCAPS-34 to get a baseline measurement of symptoms during the screening interview, and again after each therapy-dog session.

Process of quantitative data analysis. In order to determine the magnitude of change, I visually analyzed (a) the difference in the mean T-scores between phases A and B of the research for each subscale as indicated in the line graphs. In order to determine the rate of change

between phases I visually analyzed the latency of changes between phase A and the first measurement of phase B, and the shift in level of change. In order to determine the rate of change over time I visually analyzed the trend of the line resulting from the continuous subtest measurements in phase B, and the shift in level of performance from phase A.

I have included subscale T-scores and mean T-score values in my analytical comments to better orient the reader to the graphs and to clarify any curiosities you may have regarding specific data points. Similarly, I have included the CCAPS-34 descriptive distress indicators that correspond with subscale T-scores and percentiles in order to enable the reader to easily re-situate the data within the context of the inclusion/exclusion criteria previously outlined (see Chapter 3). However, I have not relied on the T-scores or the distress indicators per se to guide my formal visual analysis nor has the external assessor. Table 2 shows the points range I use as a guide for the descriptive terms I use in each analysis.

Table 2

Points Range for Descriptive Terms

Descriptive Term	Change in Points
Neutral / Stable	<1 pt
Small / Slow	1 – 2 pts
Modest / Gradual	3 – 6 pts
Remarkable / Moderate	7 – 14 pts
Significant / Rapid	15 – 22 pts

Results of quantitative data analysis. My analysis of the raw quantitative data with a brief summary for each participant follows. An external assessor has corroborated my analysis. Though I have used numbers to identify participants, the sequence does not signify the participant's order of enrollment into Campus Tails.

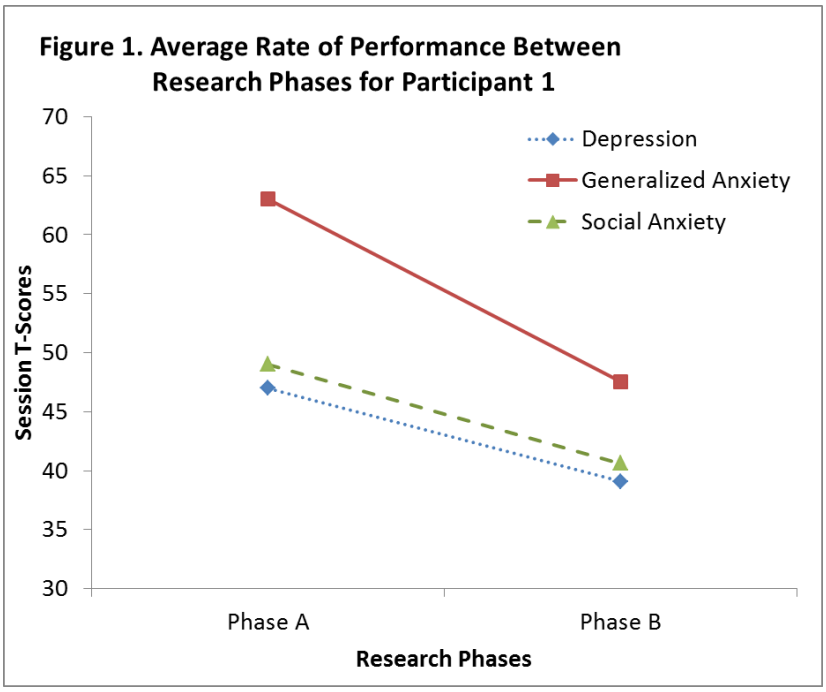
Participant #1(P1). P1 attended eleven therapy-dog sessions over the course of the study. Table 3 shows P1's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 3

Participant 1 Subscale T-Score Data Table

Subscales	Session T-Scores											
	Baseline	1	2	3	4	5	6	7	8	9	10	11
Depression	47	48	42	44	42	42	37	35	35	35	35	35
Generalized Anxiety	63	60	55	57	43	52	45	40	42	47	42	40
Social Anxiety	49	45	47	41	37	43	43	41	39	39	37	35

Visual analysis of the data shown in Figure 1 reveals that P1 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the T-mean scores for the respective subscales.



Specifically, Figure 1 shows that P1's mean T-score on the Depression subscale in phase A is 47, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 39, indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P1's mean T-score on the Generalized Anxiety subscale in phase A is 63, indicating severe psychological distress in this domain; the mean T-score in phase B decreased to 47.5 indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is significant. The trend is negative. The rate of change over time is rapid. P1's mean T-score on the Social Anxiety subscale in phase A is 49, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 40.6, still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

Figure 2. Subscale T-Score Data Points for Both Research Phases for Participant 1

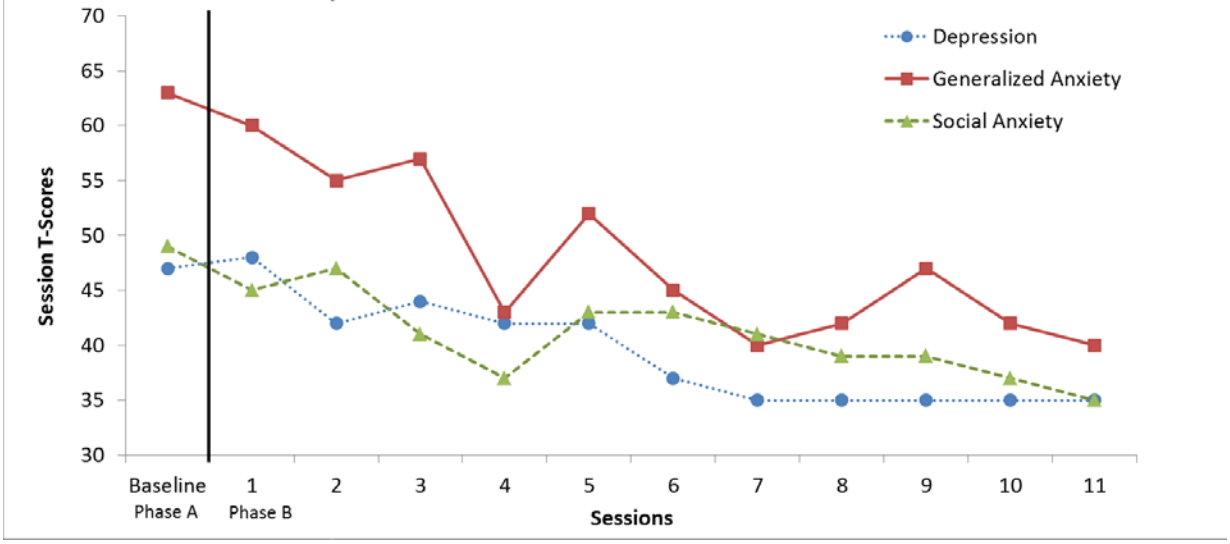


Figure 2 shows that P1's T-score on the Depression subscale went from 47 to 48 at the first measurement of phase B. Both measurements fall within the moderate psychological

distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Depression subscale is positive and the rate of change is slow. P1's T-score on the Generalized Anxiety subscale went from 63 to 60 at the first measurement of phase B. The phase A measurement falls within the severe psychological distress category; the phase B measurement falls within the high psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative, and the rate of change is gradual. P1's T-score on the Social Anxiety subscale went from 49 to 45 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend on the Social Anxiety subscale B is negative, and the rate of change is gradual.

Figure 2 shows that the AAA intervention seems to have ultimately had a remarkably favorable effect on P1's symptoms of depression over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is slow to moderate, until gradually becoming more stable at the end of phase B. The intervention seems to have ultimately had a significantly favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is slow to moderate with variability throughout phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is

slow to moderate with variability primarily at the beginning of phase B. The AAA intervention seems to have had the most potent effect on P1's reported symptoms of generalized anxiety.

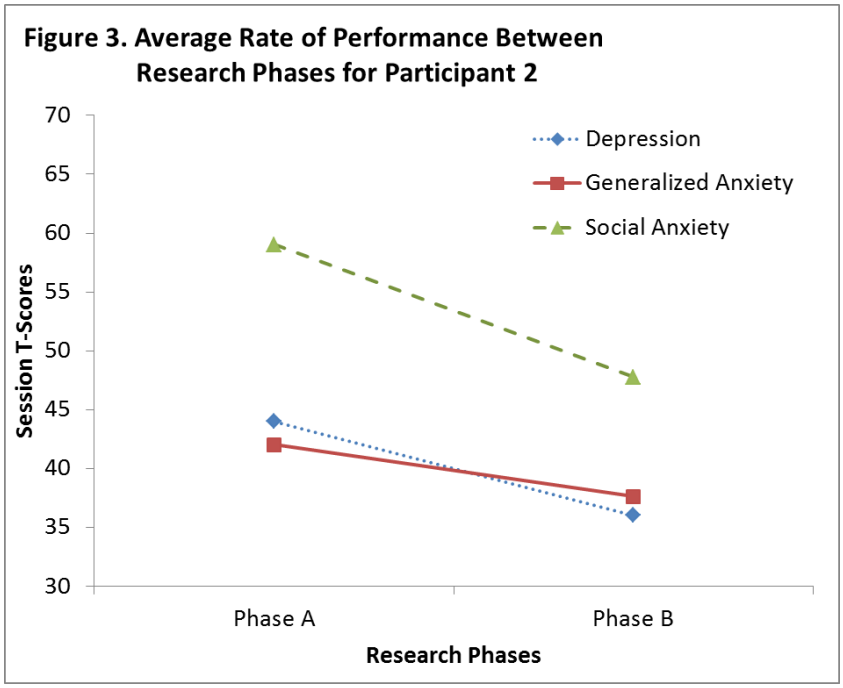
Participant #2 (P2). P2 attended eight therapy-dog sessions over the course of the study. Table 4 shows P2's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 4

Participant 2 Subscale T-Score Data Table

Subscales	Session T-Scores								
	Baseline	1	2	3	4	5	6	7	8
Depression	44	37	39	37	35	35	35	35	35
Generalized Anxiety	42	38	35	37	40	39	42	35	35
Social Anxiety	59	53	49	47	45	47	49	45	47

Visual analysis of the data shown in Figure 3 reveals that P2 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the T-mean scores for the respective subscales.



Specifically, Figure 3 shows that P2's mean T-score on the Depression subscale in phase A is 44, indicating moderate psychological distress in this domain; the mean T-score in phase B

decreased to 36 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P2's mean T-score on the Generalized Anxiety subscale in phase A is 42, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 37.6 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P2's mean T-score on the Social Anxiety subscale in phase A is 59, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 47.7, indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

Figure 4. Subscale T-Score Data Points for Both Research Phases for Participant 2

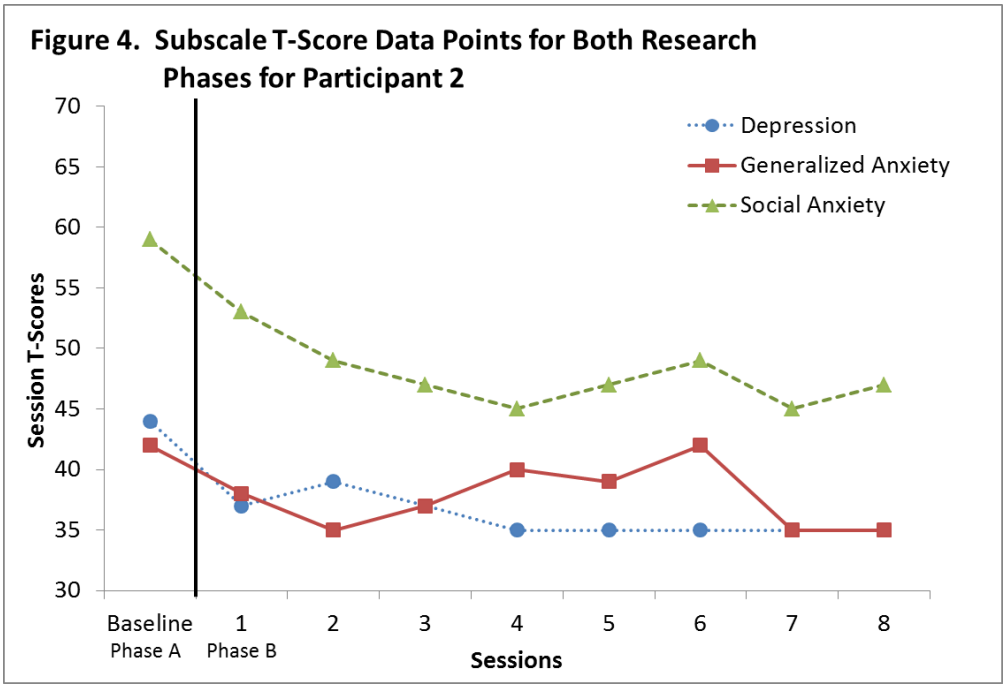


Figure 4 shows that P2's T-score on the Depression subscale went from 44 to 37 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological

distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend on the Depression subscale is negative and the rate of change is moderate. P2's T-score on the Generalized Anxiety subscale went from 42 to 38 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is modest. The latency period is between the termination of phase A and change in performance in phase B was short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is gradual. P2's T-score on the Social Anxiety subscale went from 59 to 53 at the first measurement of phase B. Both measurements fall within the high psychological distress category. The shift in level of change is modest. The latency period is between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is gradual.

Figure 4 shows that the AAA intervention seems to have ultimately had a remarkably favorable effect on P2's symptoms of depression over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change begins as moderate, quickly tapers to slow, until becoming more stable for the second half of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is gradual to slow with variability throughout most of phase B, until becoming stable for the last two measurements. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative

trend in the plotted data. The stability in the overall rate of change is gradual to slow throughout phase B. The AAA intervention seems to have had the most potent effect on P2's reported symptoms of social anxiety.

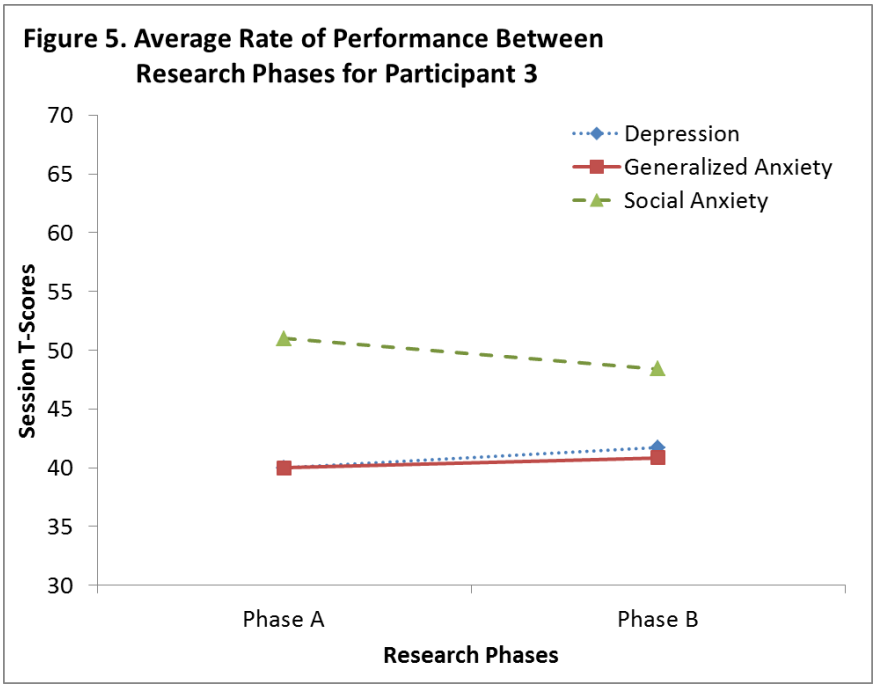
Participant #3 (P3). P3 attended seven therapy-dog sessions over the course of the study. Table 5 shows P3's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 5

Participant 3 Subscale T-Score Data Table

Subscales	Session T-Scores							
	Baseline	1	2	3	4	5	6	7
Depression	40	39	44	42	39	42	42	44
Generalized Anxiety	40	43	40	43	38	42	40	40
Social Anxiety	51	49	51	47	51	47	49	45

Visual analysis of the data shown in Figure 5 reveals that P3 reported experiencing an increase in symptoms of depression and generalized anxiety between phase A and B of the research as indicated by the positive trend of each of the lines graphing the mean T-scores for the respective subscales. He or she reported a decrease in symptoms of social anxiety between phase A and phase B as indicated by the negative trend of the line graphing the mean T-scores of the Social Anxiety subscale.



Specifically, Figure 5 shows that P3's mean T-score on the Depression subscale in phase A is 40, indicating moderate psychological distress in this domain; the mean T-score in phase B increased to 41.7 still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is small. The trend is positive. The rate of change over time is slow. P3's mean T-score on the Generalized Anxiety subscale in phase A is 40, indicating low psychological distress in this domain; the mean T-score in phase B increased to 40.85 still indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is neutral. The trend is positive. The rate of change over time is slow. P3's mean T-score on the Social Anxiety subscale in phase A is 51, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 48.4, indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual.

Figure 6. Subscale T-Score Data Points for Both Research Phases for Participant 3

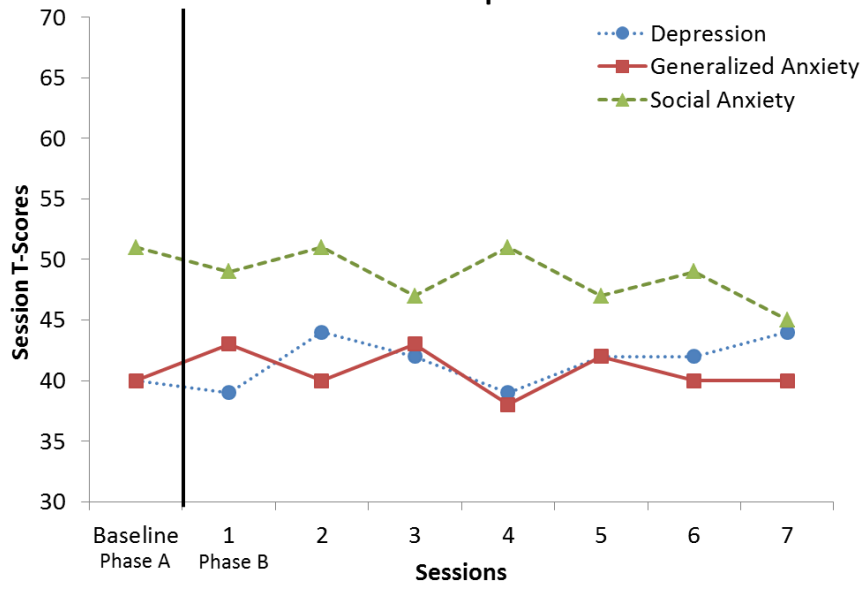


Figure 6 shows that P3's T-score on the Depression subscale went from 40 to 39 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Depression subscale is negative and the rate of change is slow. P3's T-score on the Generalized Anxiety subscale went from 40 to 43 at the first measurement of phase B. The phase A measurement falls within the low psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is positive and the rate of change is gradual. P3's T-score on the Social Anxiety subscale went from 51 to 49 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is slow.

Figure 6 shows that the AAA intervention seems to have ultimately had a modestly unfavorable effect on P3's symptoms of depression over time as indicated by the positive trend of the plotted data. The stability in the overall rate of change is gradual to slow with variability throughout phase B. The intervention seems to have had a neutral on his or her symptoms of

generalized anxiety over time as indicated by the relatively stable trend of the plotted data. The stability in the overall rate of change is gradual to slow with variability throughout phase B, but ultimately produced no appreciable clinical effect. The intervention seems to have ultimately had a modestly favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is slow to gradual with variability throughout phase B. The AAA intervention seems to have ultimately had the most potent effect on P3's reported symptoms of social anxiety.

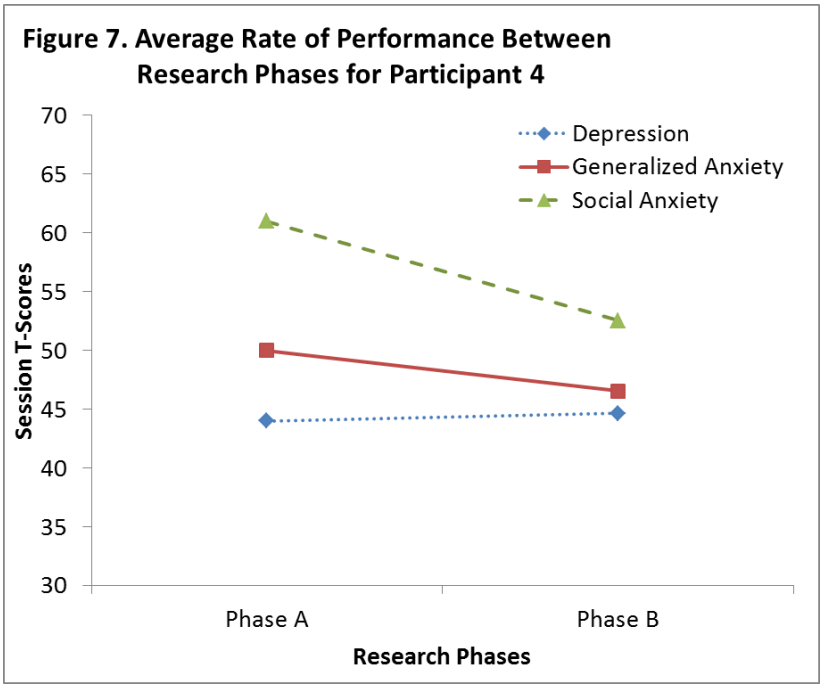
Participant #4 (P4). P4 attended nine therapy-dog sessions over the course of the study. Table 6 shows P4's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 6

Participant 4 Subscale T-Score Data Table

Subscales	Session T-Scores									
	Baseline	1	2	3	4	5	6	7	8	9
Depression	44	44	45	44	45	48	44	44	44	44
Generalized Anxiety	50	50	43	45	47	47	47	45	48	47
Social Anxiety	61	59	57	51	57	49	49	53	53	45

Visual analysis of the data shown in Figure 7 reveals that P4 reported experiencing an increase of symptoms of depression between phase A and phase B of the research as indicated by the positive trend of the line graphing the mean T-scores for the Depression subscale. He or she reported experiencing a decrease of symptoms of generalized anxiety and social anxiety between phase A and B as indicated by the negative trend of the lines graphing the mean scores for the respective subscales.



Specifically, Figure 7 shows that P4's mean T-score on the Depression subscale in phase A is 44, indicating moderate psychological distress in this domain; the mean T-score in phase B increased to 44.6 still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is neutral. The trend is positive. The rate of change overt time is slow. P4's mean T-score on the Generalized Anxiety subscale in phase A is 50, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 46.5 still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P4's mean T-score on the Social Anxiety subscale in phase A is 61, indicating severe psychological distress in this domain; the mean T-score in phase B decreased to 52.5, indicating high psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

Figure 8. Subscale T-Score Data Points for Both Research Phases for Participant 4

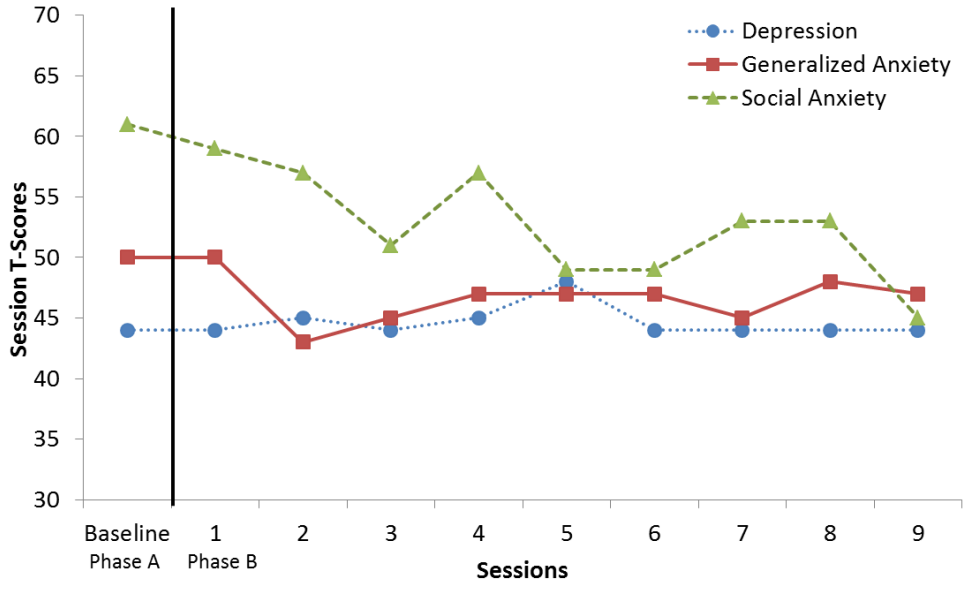


Figure 8 shows that P4's T-score on the Depression subscale stayed stable at 44 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. There is no shift in level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of the Depression subscale is stable and the rate of change is stable. P4's T-score on the Generalized Anxiety subscale stayed stable at 50 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. There is no shift in level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of the Generalized Anxiety is subscale is stable and the rate of change is stable. P4's T-score on the Social Anxiety subscale went from 61 to 59 at the first measurement of phase B. The phase A measurement falls within the severe psychological distress category; the phase B measurement falls within the high psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is slow.

Figure 8 shows that the AAA intervention seems to have had a neutral effect on P4's symptoms of depression over time as indicated by the relatively stable trend of the plotted data. The stability in the overall rate of change is slow to gradual with variability predominantly toward the middle of phase B and becoming stable for the final measurements, but ultimately produced no appreciable clinical effect. The intervention seems to have ultimately had a modestly favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is moderate to slow at the beginning of phase B with stability in the middle, then becoming slow for the final

measurements. The intervention seems to have ultimately had a significantly favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is slow to gradual with variability throughout phase B. The AAA intervention seems to have had the most potent effect on P4's reported symptoms of social anxiety.

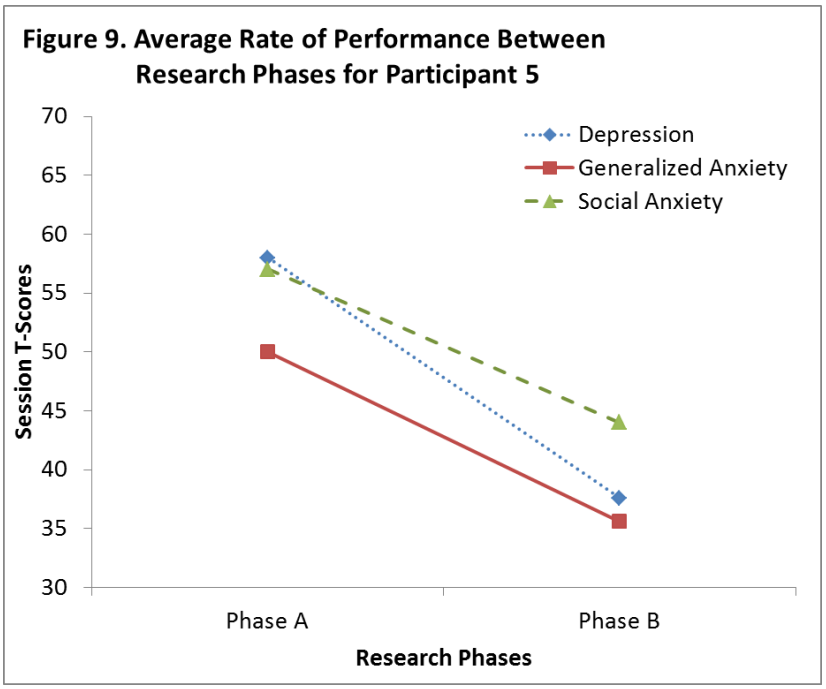
Participant #5 (P5). P5 attended ten therapy-dog sessions over the course of the study. Table 7 shows P5's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 7

Participant 5 Subscale T-Score Data Table

Subscales	Session T-Scores										
	Baseline	1	2	3	4	5	6	7	8	9	10
Depression	58	45	39	35	35	35	37	39	35	39	37
Generalized Anxiety	50	38	42	33	35	33	37	37	33	33	35
Social Anxiety	57	59	47	45	47	37	45	45	37	39	39

Visual analysis of the data shown in Figure 9 reveals that P5 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 9 shows that P5's mean T-score on the Depression subscale in phase A is 58, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 37.6 indicating low psychological distress in this domain. The magnitude of change

in mean T-scores between phase A and B is significant. The trend is negative. The rate of change over time is rapid. P5's mean T-score on the Generalized Anxiety subscale in phase A is 50, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 35.6 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P5's mean T-score on the Social Anxiety subscale in phase A is 57, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 44, indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

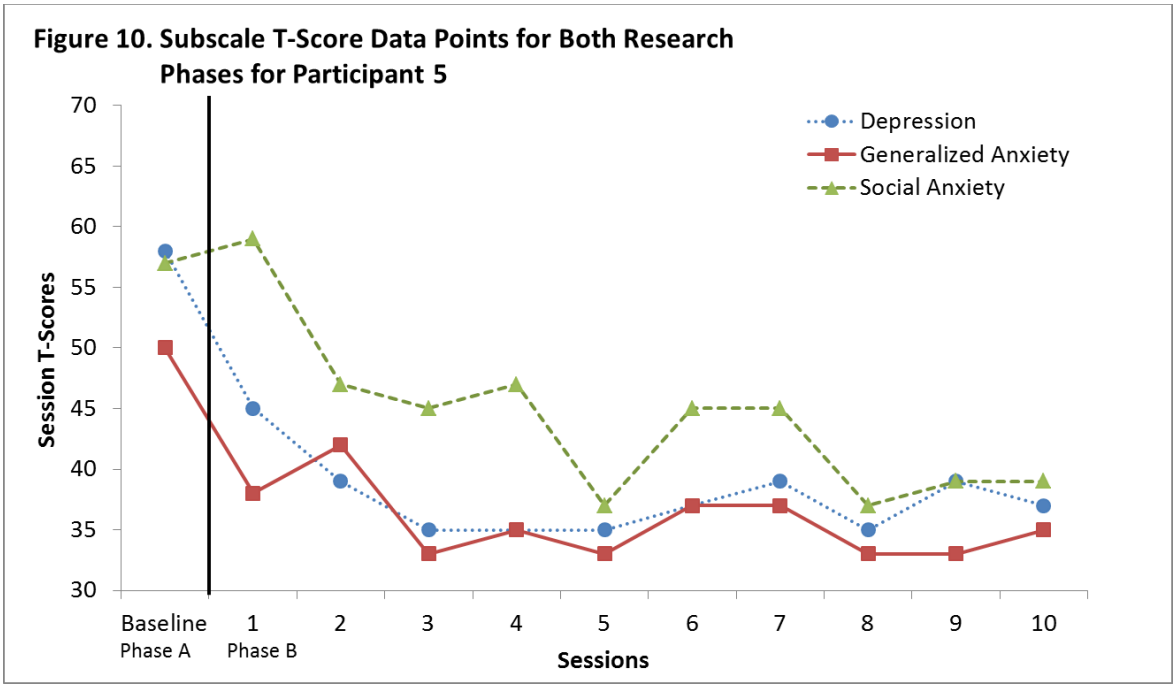


Figure 10 shows that P5's T-score on the Depression subscale went from 58 to 45 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change is remarkable. The latency period between the termination

of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Depression subscale is negative and the rate of change is moderate. P5's T-score on the Generalized Anxiety subscale went from 50 to 38 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is moderate. P5's T-score on the Social Anxiety subscale went from 57 to 59 at the first measurement of phase B. Both measurements fall within the high psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is positive and the rate of change is slow.

Figure 10 shows that the AAA intervention seems to have ultimately had a significantly favorable effect on P5's symptoms of depression over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change begins as moderate, becoming gradual to slow with a period of stability in the first half of phase B. The intervention seems to have ultimately had a significantly favorable effect in his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change begins as moderate, becoming predominantly gradual with variability throughout phase B. The intervention seems to have ultimately had a significantly favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is moderate to slow with variability throughout phase B.

The AAA intervention seems to have had the most potent effect on P5's reported symptoms of depression.

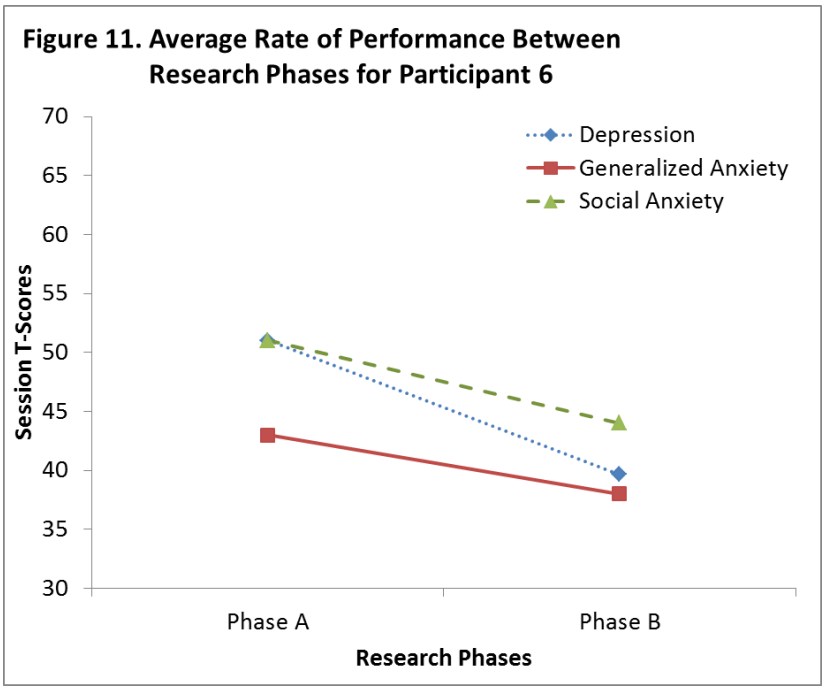
Participant #6 (P6). P6 attended six therapy-dog sessions over the course of the study. Table 8 shows P6's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 8

Participant 6 Subscale T-Score Data Table

Subscales	Session T-Scores						
	Baseline	1	2	3	4	5	6
Depression	51	40	42	40	40	37	39
Generalized Anxiety	43	40	38	35	40	38	37
Social Anxiety	51	45	45	43	45	47	39

Visual analysis of the data shown in Figure 11 reveals that P6 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 11 shows that P6's mean T-score on the Depression subscale in phase A is 51, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 39.6 indicating low psychological distress in this domain. The magnitude of change

in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P6's mean T-score on the Generalized Anxiety subscale in phase A is 43, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 38 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P6's mean T-score on the Social Anxiety subscale in phase A is 51, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 44, indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

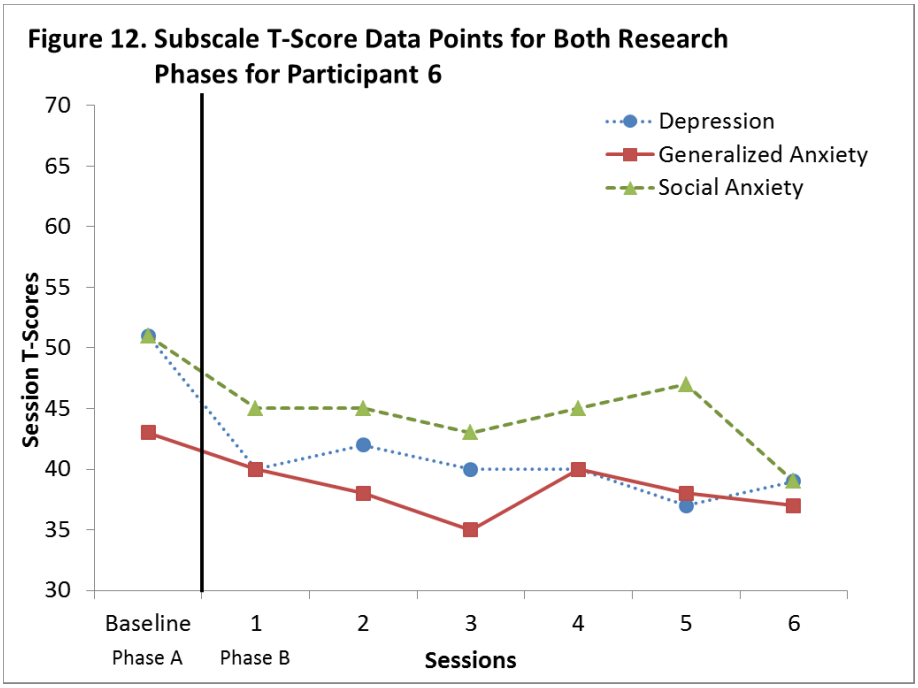


Figure 12 shows that P6's T-score on the Depression subscale went from 51 to 40 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of

phase B, the trend of the Depression subscale is negative and the rate of change is moderate. P6's T-score on the Generalized Anxiety subscale went from 43 to 40 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is moderate. P6's T-score on the Social Anxiety subscale went from 51 to 45 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is gradual.

Figure 12 shows that the AAA intervention seems to have ultimately had a remarkably favorable effect on P6's symptoms of depression over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change starts as moderate, quickly becoming predominantly slow. The intervention seems to have ultimately had a modestly favorable effect in his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is predominantly gradual with variability in the second half of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change ranges from moderate to slow

with variability throughout phase B. The AAA intervention seems to have had the most potent effect on P5's reported symptoms of depression and social anxiety.

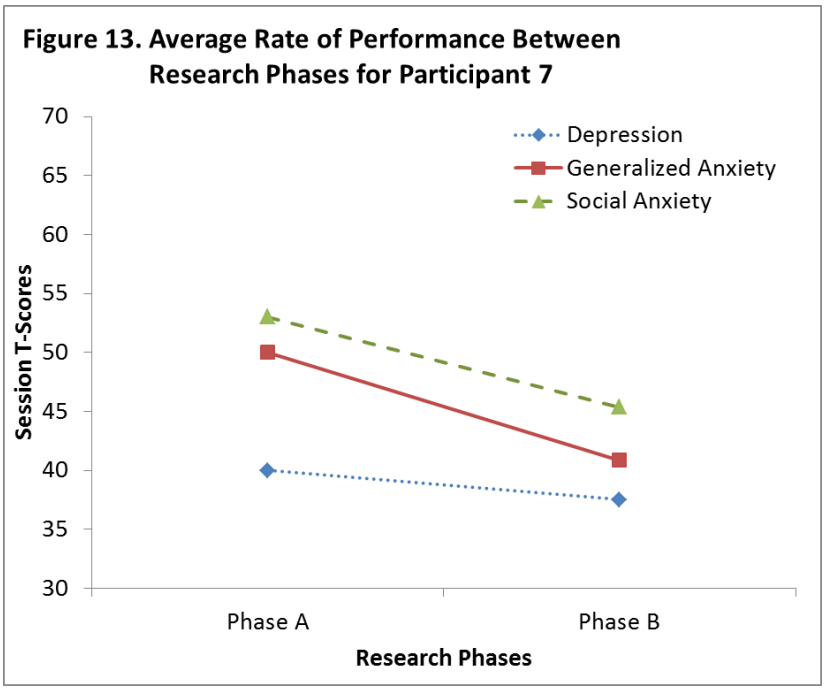
Participant #7 (P7). P7 attended six therapy-dog sessions over the course of the study. Table 9 shows P7's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 9

Participant 7 Subscale T-Score Data Table

Subscales	Session T-Scores						
	Baseline	1	2	3	4	5	6
Depression	40	40	39	37	35	39	35
Generalized Anxiety	50	47	47	42	33	38	38
Social Anxiety	53	49	51	41	45	47	39

Visual analysis of the data shown in Figure 13 reveals that P7 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 13 shows that P7's mean T-score on the Depression subscale in phase A is 40, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 37.5 indicating low psychological distress in this domain. The magnitude

of change in mean T-scores between phase A and B is small. The trend is negative. The rate of change over time is gradual. P7's mean T-score on the Generalized Anxiety subscale in phase A is 50, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 40.8 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P7's mean T-score on the Social Anxiety subscale in phase A is 53, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 45.3, indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

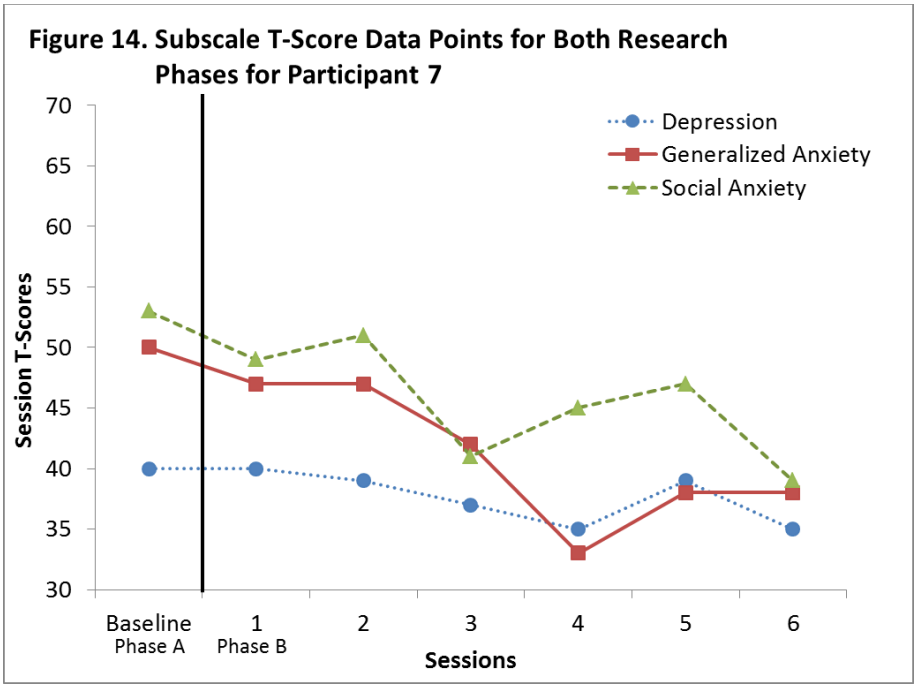


Figure 14 shows that P7's T-score on the Depression subscale stayed stable 40 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. There is no shift in level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of

the Depression subscale is stable and the rate of change is stable. P7's T-score on the Generalized Anxiety subscale went from 50 to 47 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is gradual. P7's T-score on the Social Anxiety subscale went from 53 to 49 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change was modest. The latency period between the termination of phase A and change in performance in phase B was short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is gradual.

Figure 14 shows that the AAA intervention seems to have ultimately had a modestly favorable effect on P7's symptoms of depression over time as indicated by negative trend of the plotted data. The stability in the overall rate of change is slow to gradual with one point of variability toward the end of phase B. The intervention seems to have ultimately had a remarkably favorable effect in his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is predominantly gradual with one moderate measurement toward the end of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is gradual to slow with one moderate measurement in the middle of

phase B. The AAA intervention seems to have had the most potent effect on P7's reported symptoms of social anxiety.

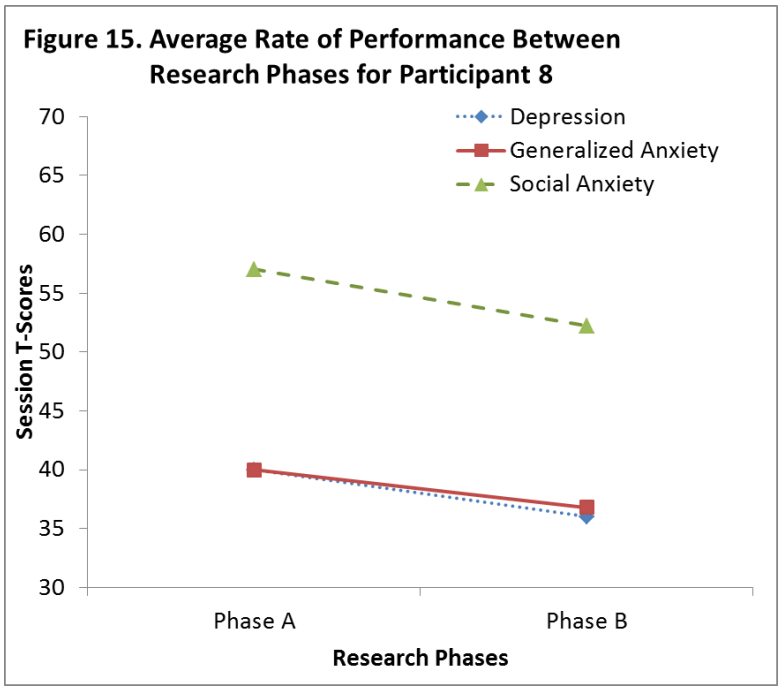
Participant #8 (P8). P8 attended five therapy-dog sessions over the course of the study. Table 10 shows P8's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 10

Participant 8 Subscale T-Score Data Table

Subscales	Session T-Scores					
	Baseline	1	2	3	4	5
Depression	40	35	40	35	35	35
Generalized Anxiety	40	35	37	37	35	40
Social Anxiety	57	57	59	51	47	47

Visual analysis of the data shown in Figure 15 reveals that P8 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 15 shows that P8's mean T-score on the Depression subscale in phase A is 40, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 36 indicating low psychological distress in this domain. The magnitude of

change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P8's mean T-score on the Generalized Anxiety subscale in phase A is 40, indicating low psychological distress in this domain; the mean T-score in phase B decreased to 36.8 still indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P8's mean T-score on the Social Anxiety subscale in phase A is 57, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 52.2, still indicating high psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is moderate.

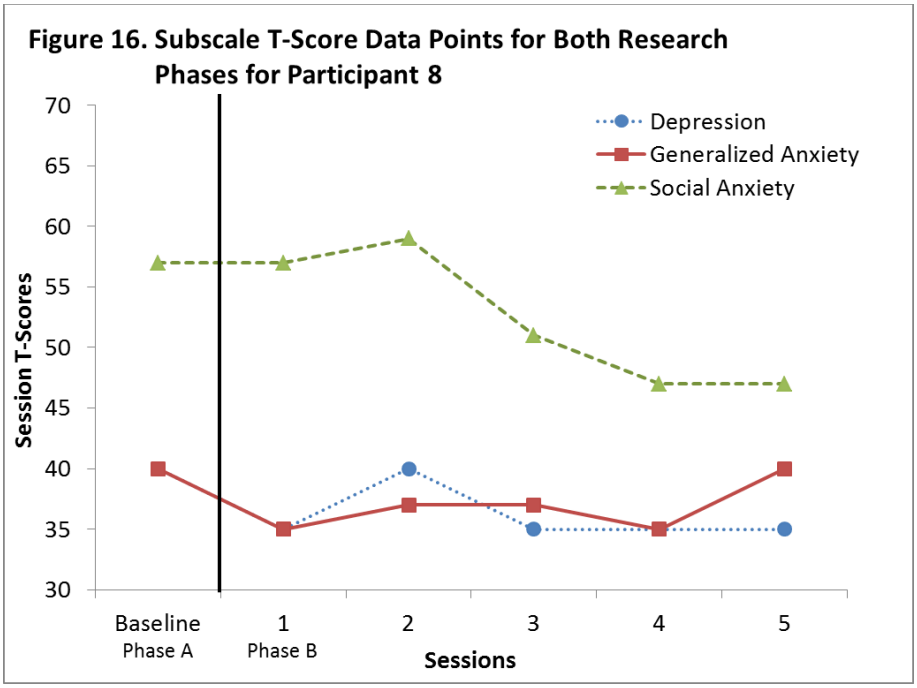


Figure 16 shows that P8's T-score on the Depression subscale went from 40 to 35 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change was modest. The latency period between the

termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Depression subscale is negative and the rate of change is gradual. P8's T-score on the Generalized Anxiety subscale went from 40 to 35 at the first measurement of phase B. Both measurements fall within the low psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is gradual. P8's T-score on the Social Anxiety subscale stayed stable at 57 indicating no change in reported symptoms of social anxiety at the first measurement of phase B. Both measurements fall within the high psychological distress category. There was no shift in level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of the Social Anxiety is subscale is stable and the rate of change is stable.

Figure 16 shows that the AAA intervention seems to have ultimately had a modestly favorable effect on P8's symptoms of depression over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is gradual for the first half of phase B, becoming stable for the second half. The intervention seems to have initially had a small-to-moderate effect in his or her symptoms of generalized anxiety, but ultimately had a neutral effect at the end of phase B as indicated by the relatively stable trend of the plotted data that returns to the baseline measurement. The stability in the overall rate of change is gradual to slow at the beginning of phase B, ending with an inverse measurement. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time. The stability in the overall rate of change is slow to modest throughout phase B. The

AAA intervention seems to have had the most potent effect on P8's reported symptoms of social anxiety.

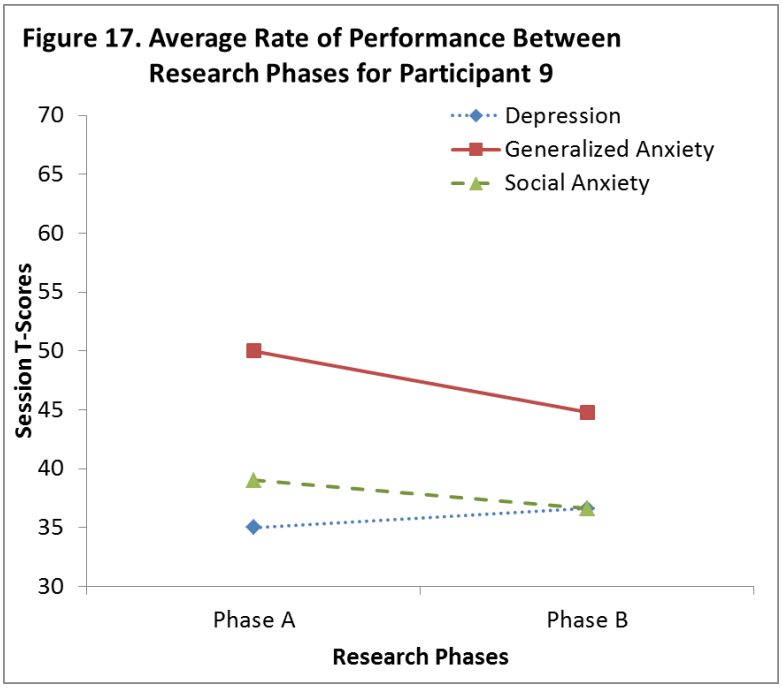
Participant #9 (P9). P9 attended five therapy-dog sessions over the course of the study. Table 11 shows P9's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 11

Participant 9 Subscale T-Score Data Table

Subscales	Session T-Scores					
	Baseline	1	2	3	4	5
Depression	35	35	39	39	35	35
Generalized Anxiety	50	47	43	47	45	42
Social Anxiety	39	39	35	35	37	37

Visual analysis of the data shown in Figure 17 reveals that P9 reported experiencing an increase in symptoms of depression between phase A and phase B of the research as indicated by the positive trend of the line graphing the mean T-scores of the Depression subscale. He or she reported experiencing a decrease in symptoms of generalized and social anxiety between phase A and phase B of the research as indicated by the negative trend of the lines graphing the mean T-scores of the respective subscales.



Specifically, Figure 17 shows that P9's mean T-score on the Depression subscale in phase A is 35, indicating low psychological distress in this domain; the mean T-score in phase B increased to 36.6 still indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is small. The trend is positive. The rate of change over time is slow. P9's mean T-score on the Generalized Anxiety subscale in phase A is 50, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 44.8 still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P9's mean T-score on the Social Anxiety subscale in phase A is 39, indicating low psychological distress in this domain; the mean T-score in phase B decreased to 36.6, still indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is small. The trend is negative. The rate of change over time is slow.

Figure 18. Subscale T-Score Data Points for Both Research Phases for Participant 9

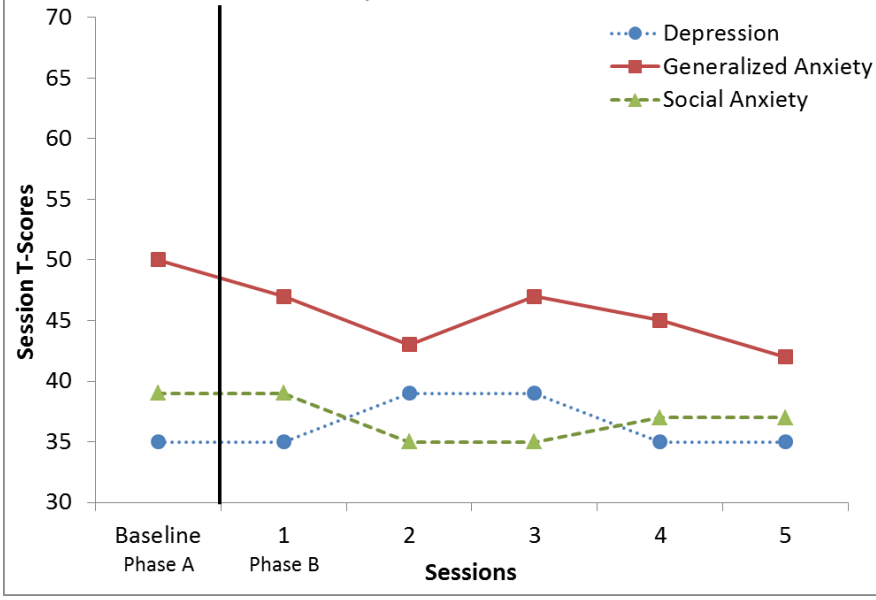


Figure 18 shows that P9's T-score on the Depression subscale stayed stable at 35 at the first measurement of phase B. Both measurements fall within the low psychological distress category. There is no shift in level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of the Depression subscale is stable and the rate of change is stable. P9's T-score on the Generalized Anxiety subscale went from 50 to 47 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is gradual. P9's T-score on the Social Anxiety subscale stayed stable at 39 at the first measurement of phase B. Both measurements fall within the low psychological distress category. There is no shift in the level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of the Social Anxiety subscale is stable and the rate of change is stable.

Figure 18 shows that the AAA intervention seems to have ultimately had a neutral effect on P9's symptoms of depression over time as indicated by the return to baseline stability in the data after a short period of variability in the middle of phase B. The stability in the overall rate of change is slow to gradual, but ultimately produced no appreciable clinical effect. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is predominantly gradual throughout phase B. The intervention seems to have ultimately had a small favorable effect on his or her symptoms of

social anxiety over time. The stability in the overall rate of change is slow to gradual throughout phase B. The AAA intervention seems to have had the most potent effect on P9's reported symptoms of generalized anxiety.

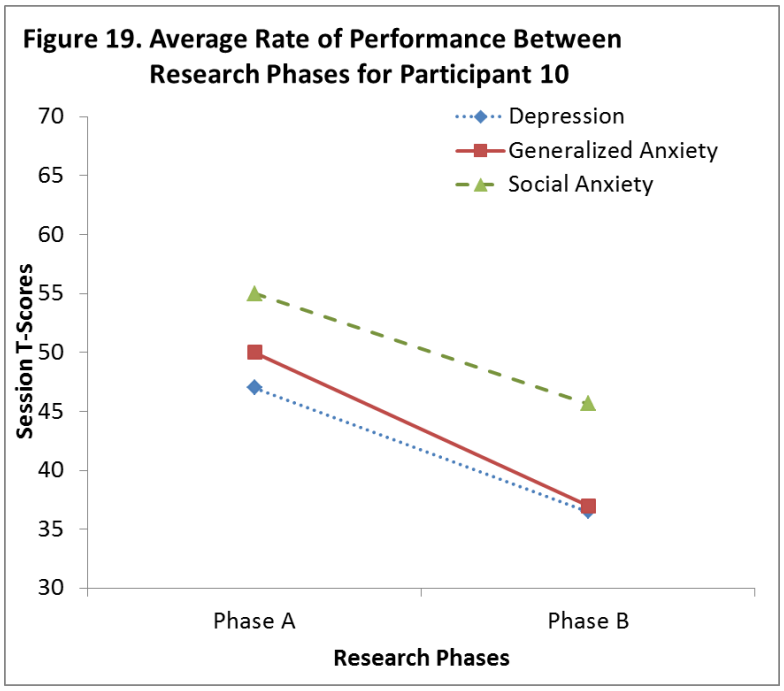
Participant #10 (P10). P10 attended six therapy-dog sessions over the course of the study. Table 12 shows P10's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 12

Participant 10 Subscale T-Score Data Table

Subscales	Session T-Scores						
	Baseline	1	2	3	4	5	6
Depression	47	40	37	35	37	35	35
Generalized Anxiety	50	42	40	35	37	35	33
Social Anxiety	55	45	47	49	45	45	43

Visual analysis of the data shown in Figure 19 reveals that P10 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 19 shows that P10's mean T-score on the Depression subscale in phase A is 47, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 36.5 indicating low psychological distress in this domain. The magnitude

of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P10's mean T-score on the Generalized Anxiety subscale in phase A is 50, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 37 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P10's mean T-score on the Social Anxiety subscale in phase A is 55, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 45.6, indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate.

Figure 20. Subscale T-Score Data Points for Both Research Phases for Participant 10

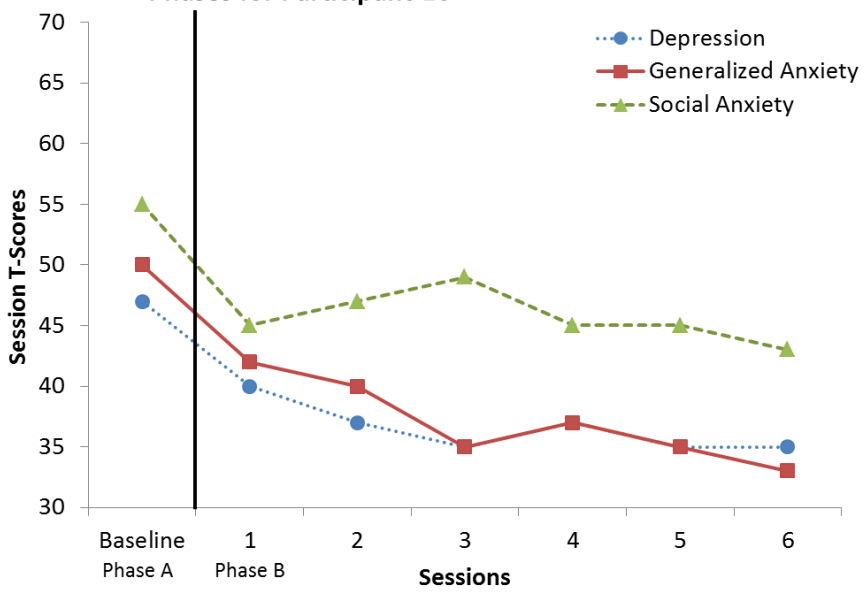


Figure 20 shows that P10's T-score on the Depression subscale went from 47 to 40 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of

phase B, the trend of the Depression subscale is negative and the rate of change is moderate. P10's T-score on the Generalized Anxiety subscale went from 50 to 42 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B was short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is moderate. P10's T-score on the Social Anxiety subscale went from 55 to 45 at the first measurement of phase B. The phase A measurement falls with the high psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B was short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is moderate.

Figure 20 shows that the AAA intervention seems to have ultimately had a remarkably favorable effect on P10's symptoms of depression over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change begins as moderate, tapering to slow by the middle of phase B. The intervention seems to have ultimately had a significantly favorable effect in his or her symptoms of generalized anxiety over time as indicated by the negative trend of the plotted data. Again, the stability in the overall rate of change begins as moderate, tapering to slow by the middle of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is gradual to slow throughout phase B. The AAA intervention seems to have had the most potent effect on P10's reported symptoms of generalized anxiety.

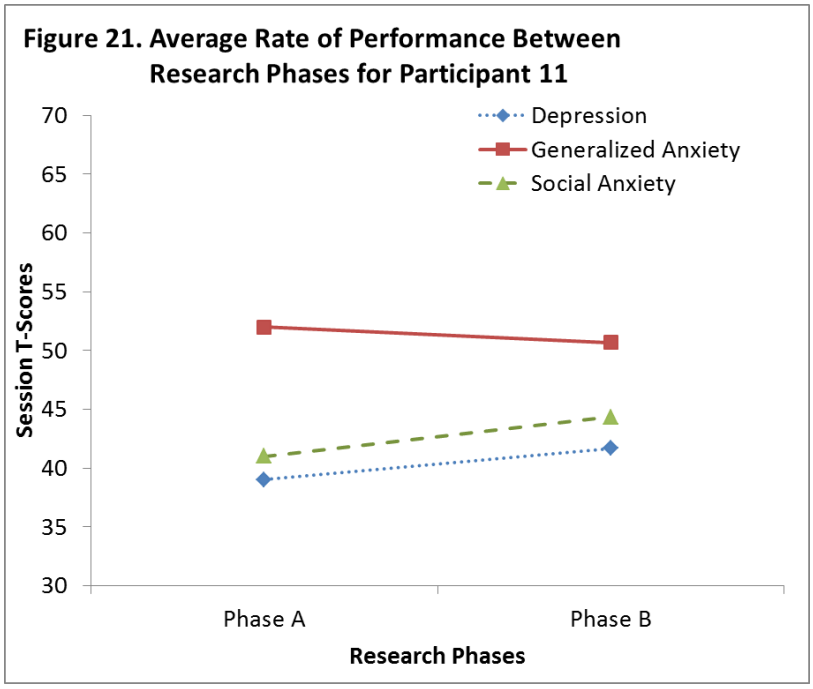
Participant #11 (P11). P11 attended three therapy-dog sessions over the course of the study. Table 13 shows P11's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 13

Participant 11 Subscale T-Score Data Table

Subscales	Session T-Scores			
	Baseline	1	2	3
Depression	39	39	47	39
Generalized Anxiety	52	50	53	49
Social Anxiety	41	49	43	41

Visual analysis of the data shown in Figure 21 reveals that P11 reported experiencing an increase in symptoms of depression and social anxiety between phase A and phase B of the research as indicated by the positive trend of each of the lines graphing the mean T-scores for the respective subscales. He or she reported experiencing a decrease in generalized anxiety between phase A and phase B of the research as indicated by the negative trend of the line graphing the mean T-scores for the Generalized Anxiety subscales.



Specifically, Figure 21 shows that P11's mean T-score on the Depression subscale in phase A is 39, indicating low psychological distress in this domain; the mean T-score in phase B increased to 41.6 indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is small. The trend is positive. The rate of change over time is slow. P11's mean T-score on the Generalized Anxiety subscale in phase A is 52, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 50.6 indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is small. The trend is negative. The rate of change over time is slow. P11's mean T-score on the Social Anxiety subscale in phase A is 41, indicating moderate psychological distress in this domain; the mean T-score in phase B increased to 44.3, still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is positive. The rate of change over time is gradual.

Figure 22. Subscale T-Score Data Points for Both Research Phases for Participant 11

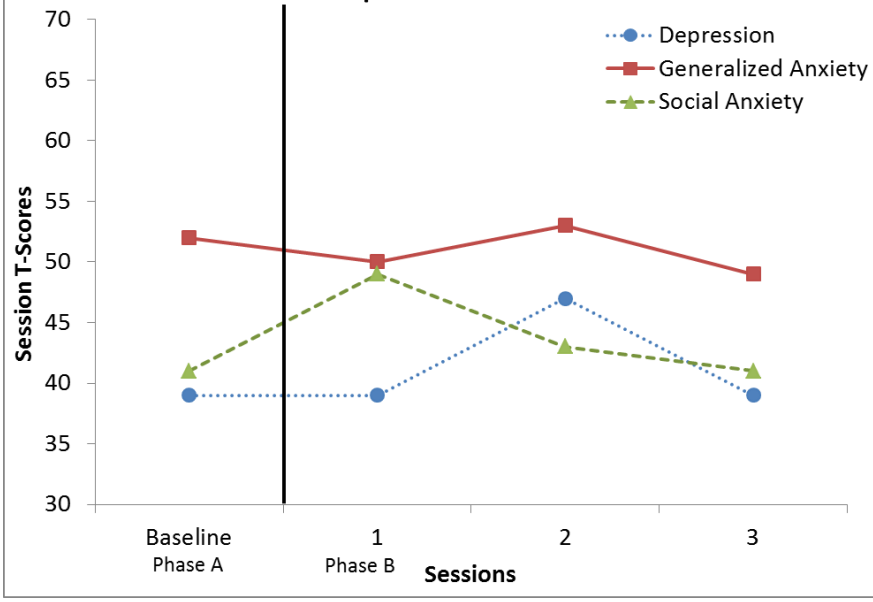


Figure 22 shows that P11's T-score on the Depression subscale stayed stable at 39 at the first measurement of phase B. Both measurements fall within the low psychological distress category. There is no shift in level of change. The latency period between the termination of phase A and change in performance in phase B is long. At the beginning of phase B, the trend of the Depression subscale is stable and the rate of change is stable. P11's T-score on the Generalized Anxiety subscale went from 52 to 50 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category; the phase B measurement falls within the moderate psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is slow. P11's T-score on the Social Anxiety subscale went from 41 to 49 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is positive and the rate of change is moderate.

Figure 22 shows that the AAA intervention seems to have ultimately had a neutral effect on his or her symptoms of depression over time as indicated by the predominantly stable trend in the plotted data. The stability in the overall rate of change is stable with one point of remarkable variability in the middle of phase B, but ultimately produced no appreciable clinical effect. The intervention seems to have ultimately had a modestly favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is slow to gradual throughout phase B. The intervention seems to

have ultimately had a neutral effect on his or her symptoms of social anxiety over time as indicated by the return to baseline stability in the data after one point of remarkable variability in the middle of phase B. The stability in the overall rate of change is predominantly slow with one moderate measurement during phase B, but ultimately produced no reportable clinical effect. The AAA intervention seems to have had the most potent effect on P11's reported symptoms of generalized anxiety.

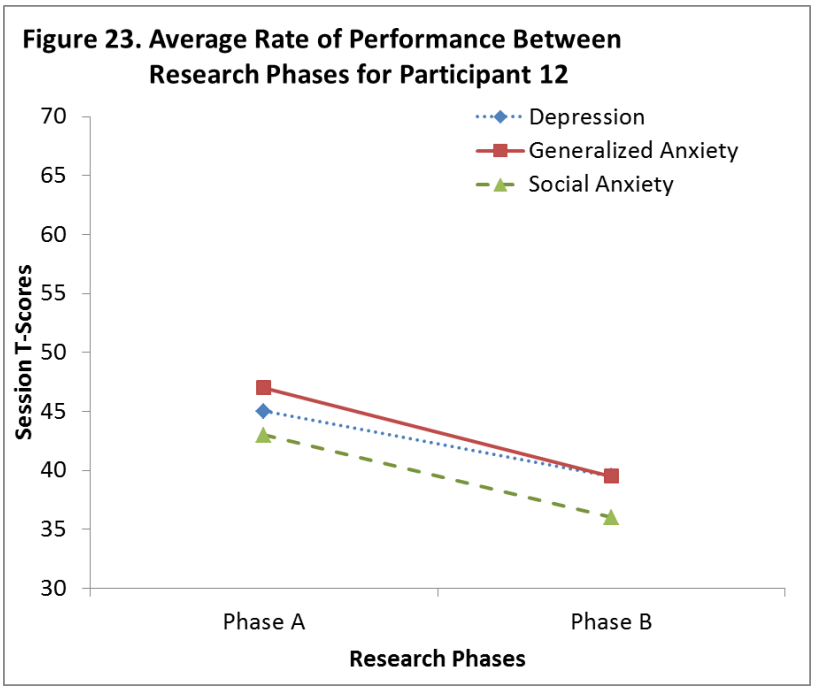
Participant #12 (P12). P12 attended four therapy-dog sessions over the course of the study. Table 14 shows P12's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 14

Participant 12 Subscale T-Score Data Table

Subscales	Session T-Scores				
	Baseline	1	2	3	4
Depression	45	37	45	39	37
Generalized Anxiety	47	40	43	38	37
Social Anxiety	43	39	39	33	33

Visual analysis of the data shown in Figure 23 reveals that P12 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 23 shows that P12's mean T-score on the Depression subscale in phase A is 45, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 39.5 indicating low psychological distress in this domain. The magnitude

of change in mean T-scores between phase A and B is moderate. The trend is negative. The rate of change over time is gradual. P12's mean T-score on the Generalized Anxiety subscale in phase A is 47, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 39.5 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P12's mean T-score on the Social Anxiety subscale in phase A is 43, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 36, indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is moderate.

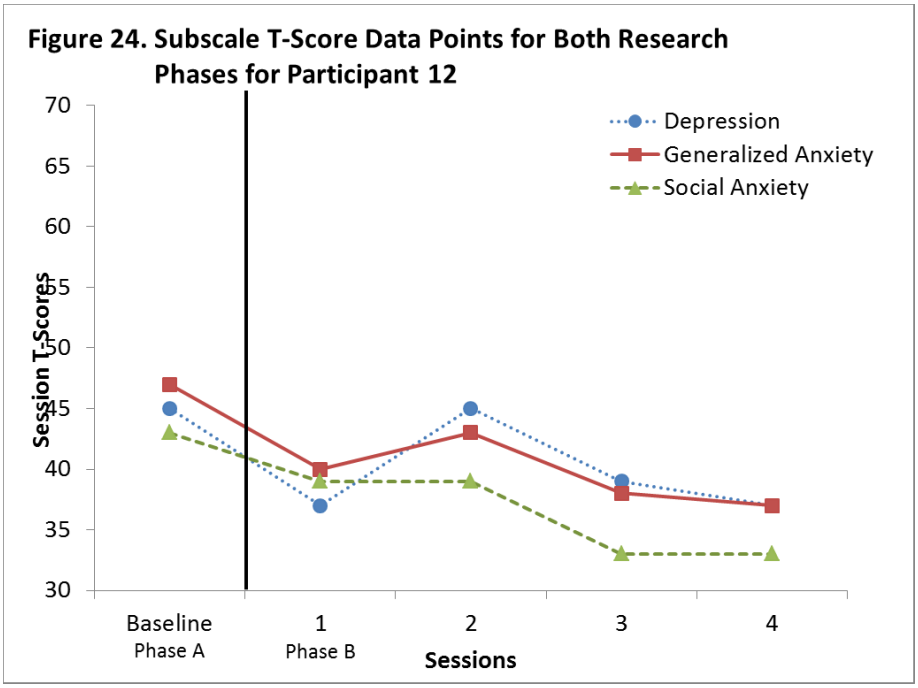


Figure 24 shows that P12's T-score on the Depression subscale went from 45 to 37 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is remarkable. The latency period between the

termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Depression subscale is negative and the rate of change is moderate. P12's T-score on the Generalized Anxiety subscale went from 47 to 40 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is moderate. P12's T-score on the Social Anxiety subscale went from 43 to 39 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is gradual.

Figure 24 shows that the AAA intervention seems to have ultimately had a remarkably favorable effect on P12's symptoms of depression over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change begins as moderate and gradually tapers to slow by the end of phase B. The intervention seems to have ultimately had a remarkably favorable effect in his or her symptoms of generalized anxiety over time as indicated by the negative trend in the plotted data. Again, the stability in the overall rate of change begins as moderate and gradually tapers to slow by the end of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is

gradual with some stability throughout phase B. The AAA intervention seems to have had the most potent effect on P12's reported symptoms of generalized anxiety and social anxiety.

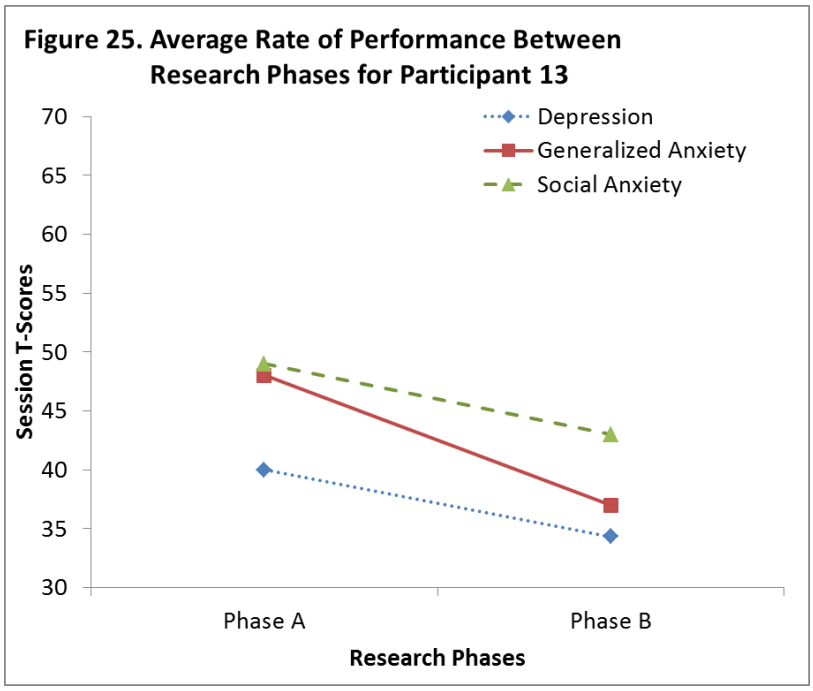
Participant #13 (P13). P13 attended three therapy-dog sessions over the course of the study. Table 15 shows P13's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 15

Participant 13 Subscale T-Score Data Table

Subscales	Session T-Scores			
	Baseline	1	2	3
Depression	40	35	35	33
Generalized Anxiety	48	37	37	37
Social Anxiety	49	45	43	41

Visual analysis of the data shown in Figure 25 reveals that P13 reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 25 shows that P13's mean T-score on the Depression subscale in phase A is 40, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 34.3 indicating low psychological distress in this domain. The magnitude

of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P13's mean T-score on the Generalized Anxiety subscale in phase A is 48, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 37 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is remarkable. The trend is negative. The rate of change over time is moderate. P13's mean T-score on the Social Anxiety subscale in phase A is 49, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 43, still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual.

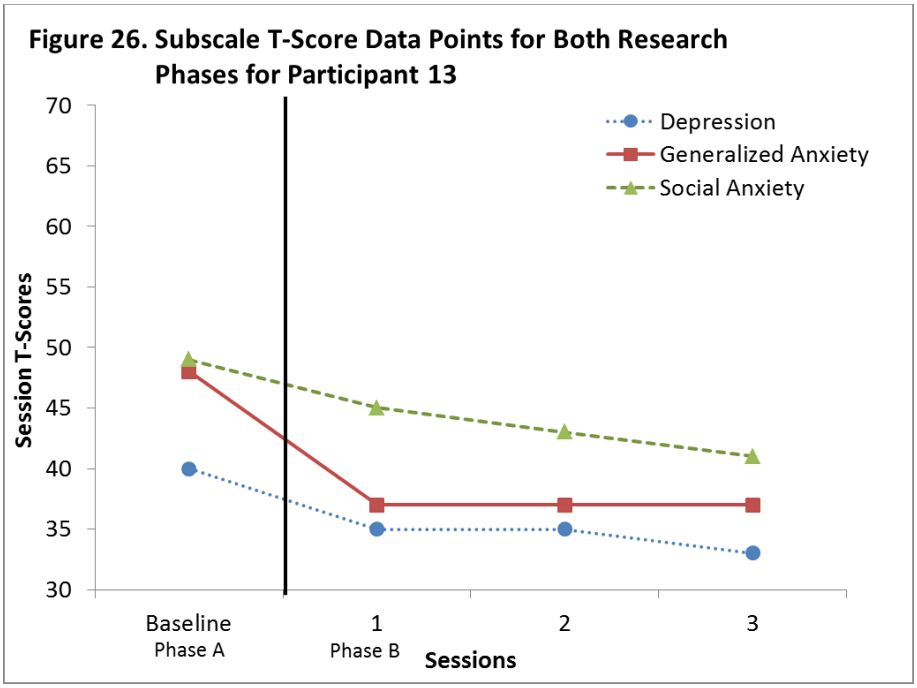


Figure 26 shows that P13's T-score on the Depression subscale went from 40 to 35 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is modest. The latency period between the

termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Depression subscale is negative and the rate of change is gradual. P13's T-score on the Generalized Anxiety subscale went from 48 to 37 at the first measurement of phase B. The phase A measurement falls within the moderate psychological distress category; the phase B measurement falls within the low psychological distress category. The shift in level of change is remarkable. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is moderate. P13's T-score on the Social Anxiety subscale went from 49 to 45 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is negative and the rate of change is gradual.

Figure 26 shows that the AAA intervention seems to have ultimately had a remarkably favorable effect on P13's symptoms of depression over time as indicated by the negative trend of the plotted data. The stability in the overall rate of change is gradual to slow with stability in the data during the middle of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change begins as moderate, quickly becoming stable after the first measurement of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is

gradual throughout phase B. The AAA intervention seems to have had the most potent effect on P13's reported symptoms of generalized anxiety.

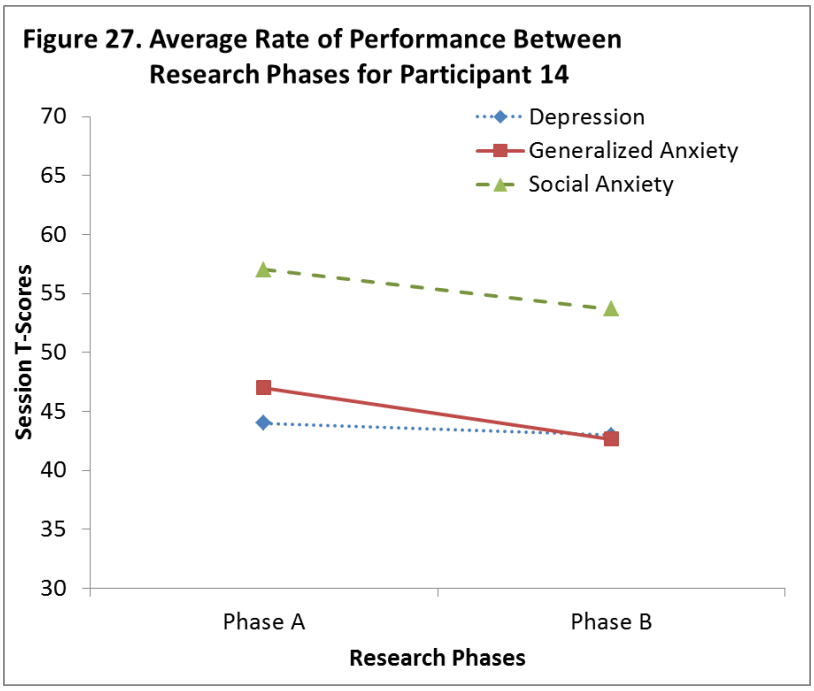
Participant #14 (P14). P14 attended three therapy-dog sessions over the course of the study. Table 16 shows P14's T-scores for the CCAPS-34 Depression, Generalized Anxiety, and Social Anxiety subscales for each session attended.

Table 16

Participant 14 Subscale T-Score Data Table

Subscales	Session T-Scores			
	Baseline	1	2	3
Depression	44	45	44	40
Generalized Anxiety	47	45	42	41
Social Anxiety	57	61	51	49

Visual analysis of the data shown in Figure 27 reveals that P14 or she reported experiencing a decrease in symptoms of depression, generalized anxiety, and social anxiety between phase A and phase B of the research as indicated by the negative trend of each of the lines graphing the mean T-scores for the respective subscales.



Specifically, Figure 27 shows that P14's mean T-score on the Depression subscale in phase A is 44, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 43 still indicating moderate psychological distress in this domain. The

magnitude of change in mean T-scores between phase A and B is small. The trend is negative. The rate of change over time is slow. P14's mean T-score on the Generalized Anxiety subscale in phase A is 47, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 42.6 still indicating moderate psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual. P14's mean T-score on the Social Anxiety subscale in phase A is 57, indicating high psychological distress in this domain; the mean T-score in phase B decreased to 53.6, still indicating high psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative. The rate of change over time is gradual.

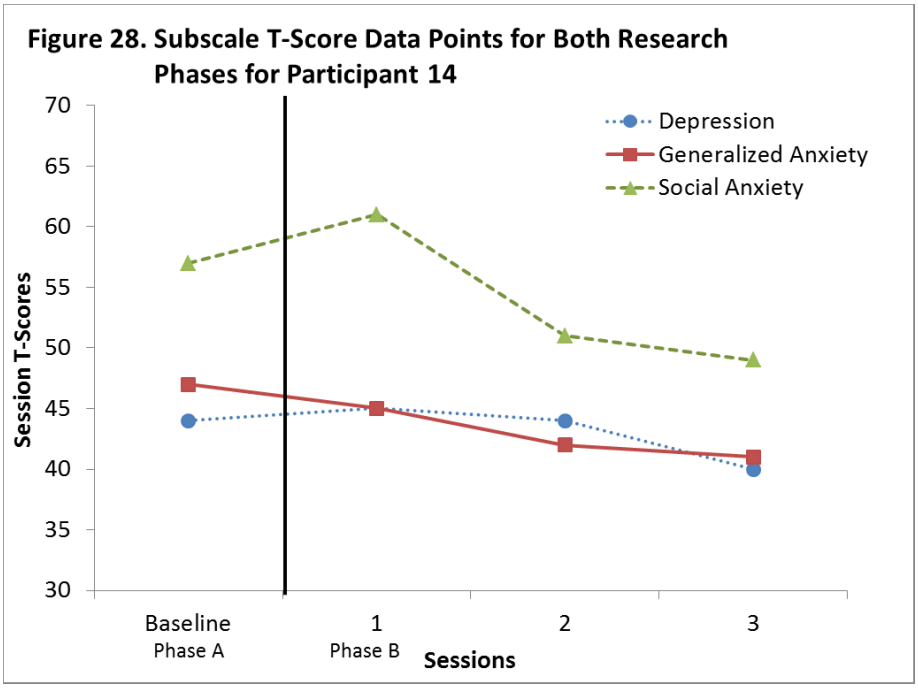


Figure 28 shows that P14's T-score on the Depression subscale went from 44 to 45 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of

phase B, the trend of the Depression subscale is positive and the rate of change is slow. P14's T-score on the Generalized Anxiety subscale went from 47 to 45 at the first measurement of phase B. Both measurements fall within the moderate psychological distress category. The shift in level of change is small. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Generalized Anxiety subscale is negative and the rate of change is slow. P14's T-score on the Social Anxiety subscale went from 57 to 61 at the first measurement of phase B. The phase A measurement falls within the high psychological distress category; the phase B measurement falls within the severe psychological distress category. The shift in level of change is modest. The latency period between the termination of phase A and change in performance in phase B is short. At the beginning of phase B, the trend of the Social Anxiety subscale is positive and the rate of change is gradual.

Figure 28 shows that the AAA intervention seems to have ultimately had a modestly favorable effect on P14's symptoms of depression over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is slow to gradual over the course of phase B. The intervention seems to have ultimately had a modestly favorable effect on his or her symptoms of generalized anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change is slow to gradual over the course of phase B. The intervention seems to have ultimately had a remarkably favorable effect on his or her symptoms of social anxiety over time as indicated by the negative trend in the plotted data. The stability in the overall rate of change begins as gradual, becoming moderate, and tapering to slow at the end of phase B. The AAA intervention seems to have had the most potent effect on P14's reported symptoms of social anxiety.

Summary of quantitative results in relation to research hypotheses. In the following section, I comment on whether my quantitative results confirm or defy my expectations for the AAA intervention as indicated by my two research hypotheses. I further explore the quantitative results, and provide broader speculation and additional commentary in Chapter 6.

Results regarding symptoms of depression. Hypothesis 1 states that symptoms of depression as measured by the Depression subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails. The data in Table 17 show that 10 out of 14 Campus Tails participants experienced a reduction in symptoms of depression over time.

Table 17
Summary of Effects for Depression Subscale

		Level of Change			
Subscale Effect	n	Small	Modest	Remarkable	Significant
Depression					
Favorable	10	2	3	4	1
Neutral	1				
Unfavorable	3	3			

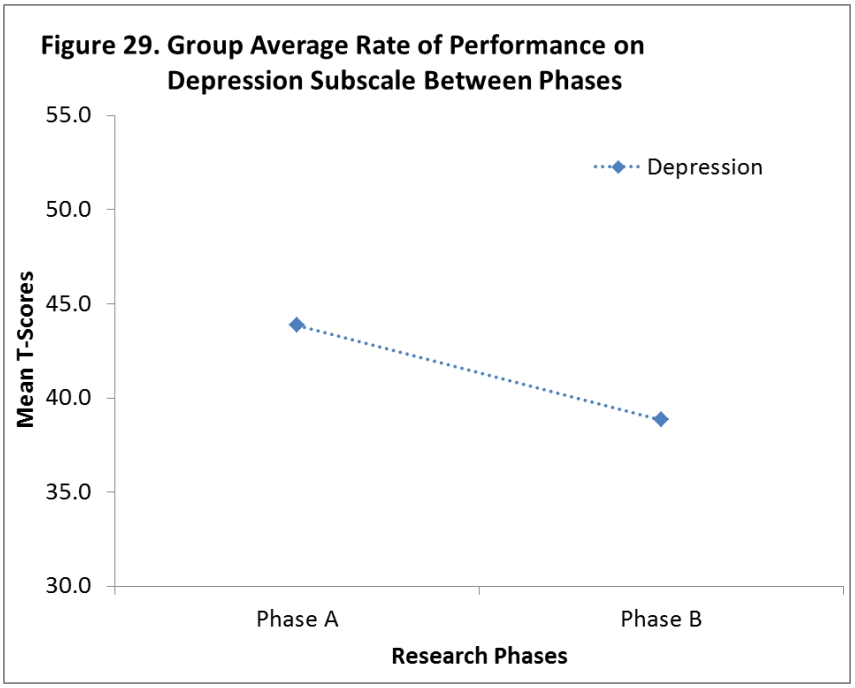
Table 18 shows each participant's mean T-scores for phase A and phase B for the Depression subscale.

Table 18

Depression Subscale Mean Summary for Phases A and B for Group of Participants

	Mean Subscale T-Scores for Participants Between Phases													
Subscale	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Phase A	47.0	44.0	40.0	44.0	58.0	51.0	40.0	40.0	35.0	47.0	39.0	45.0	40.0	44.0
Phase B	39.1	36.0	41.7	44.7	37.6	39.7	37.5	36.0	36.6	36.5	41.7	39.5	34.3	43.0

Visual analysis of the data shown in Figure 29 reveals that the group of participants reported experiencing a decrease in symptoms of depression between phase A and B of the research as indicated by the negative trend in the line graphing the mean T-scores for the Depression subscale.



Specifically, Figure 29 shows that the group's collective mean T-score on the Depression subscale in phase A is 43.9, indicating moderate psychological distress in this domain; the mean T-score in phase B decreased to 38.8 indicating low psychological distress in this domain. The magnitude of change in mean T-scores between phase A and B is modest. The trend is negative.

The rate of change is gradual. Results show that the AAA intervention seems to be associated with a decrease in symptoms of depression in this group of participants.

Results regarding symptoms of anxiety. Hypothesis 2 states that symptoms of anxiety as measured by the Generalized Anxiety subscale and/or Social Anxiety subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails. The data in Table 19 show that 13 out of 14 Campus Tails participants experienced a reduction in symptoms of generalized anxiety over time; all 14 participants experienced a reduction in symptoms of social anxiety over time.

Table 19
Summary of Effects for Anxiety Subscales

		Level of Change			
Subscale Effect	n	Small	Modest	Remarkable	Significant
Generalized Anxiety					
Favorable	13	1	6	5	1
Neutral	1				
Unfavorable	0				
Social Anxiety					
Favorable	14	1	6	7	0
Neutral	0				
Unfavorable	0				

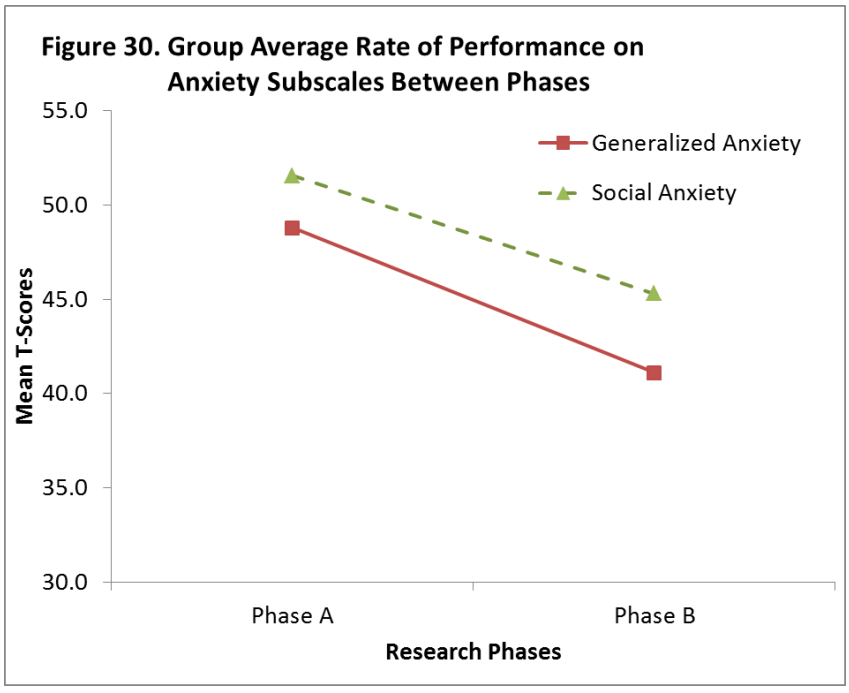
Table 20 shows each participant's mean T-scores for phase A and phase B for the Generalized Anxiety and Social Anxiety subscales.

Table 20

Anxiety Subscales Mean Summary for Phases A and B for Group of Participants

	Mean Subscale T-Scores for Participants Between Phases													
Subscales	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Generalized Anxiety														
Phase A	63.0	42.0	40.0	50.0	50.0	43.0	50.0	40.0	50.0	50.0	63.0	47.0	48.0	47.0
Phase B	47.5	37.6	40.9	46.6	35.6	38.0	40.8	36.8	44.8	37.0	50.7	39.5	37.0	42.7
Social Anxiety														
Phase A	49.0	59.0	51.0	61.0	57.0	51.0	53.0	57.0	39.0	55.0	41.0	43.0	49.0	57.0
Phase B	40.6	47.8	48.4	52.6	44.0	44.0	45.3	52.2	36.6	45.7	44.3	36.0	43.0	53.7

Visual analysis of the data shown in Figure 30 reveals that the group of participants reported experiencing a decrease in symptoms of generalized anxiety and social anxiety between phase A and B of the research as indicated by the negative trend in the lines graphing the mean T-scores for the Generalized Anxiety and Social Anxiety subscales.



Specifically, Figure 30 shows that the group's collective mean T-score on the Generalized Anxiety subscale in phase A is 48.8, indicating moderate psychological distress in this domain; the collective mean T-score in phase B decreased to 41.1 still indicating moderate psychological distress in this domain. The level of change in mean collective T-scores between phase A and B is remarkable. The trend is negative. The rate of change is moderate. The group's collective mean T-score on the Social Anxiety subscale in phase A is 51.6, indicating high psychological distress in this domain; the collective mean T-score decreased to 45.3, indicating moderate psychological distress in this domain. The level of change in mean collective T-scores between phase A and B is modest. The trend is negative. The rate of change is gradual. Results show that the AAA intervention seems to be associated with a decrease in symptoms of both generalized and social anxiety in this group of participants.

Qualitative Data Analysis

At the beginning of this study, I stated two research questions and relevant subquestions. First, I wanted to know what psychological themes were present in participants' narratives of their Campus Tails experience. Specifically, I wanted to know what attracted students to the program, if they experienced a change in their symptoms while participating, and if they would recommend the program to a friend. I also wanted to find out if the program attracted students who felt depressed and/or anxious but did not want to go to counseling. Second, I wanted to provide an initial assessment of the program in order to begin to determine if an ongoing therapy-dog program would be feasible at Bowdoin College. Specifically, I wanted to know what might be involved in recruiting students to participate and recruiting dog owners willing to supply registered therapy dogs for the program. I also wanted to get a sense of how much time and energy it might take to operationalize an on-campus therapy-dog program. In order to answer my first question, I arranged for each participant to complete a brief semi-structured exit

interview (Appendix E) upon termination of the program. I randomly selected seven participants to have their exit interview audio recorded and analyzed. After transcribing each recorded interview, I began my IPA. In order to answer my second question, I referred to the reflexive notes I kept as I developed and operationalized Campus Tails.

Process of qualitative data analysis for Question 1. I familiarized myself with participants' responses to interview questions, and got a sense of how individuals made meaning of participating in Campus Tails by reading each transcript multiple times. Next, I added initial notes to each transcript. I based the initial notes on my interpretations of (a) the participant's overall description of his or her experience, and (b) the words he or she used in narrating it. I used the annotated transcript to create a table of emergent themes, and applied abstraction, subsumption, polarization, contextualization, numeration, and function to generate super-ordinate themes for each participant (Smith et al., 2009). I repeated these steps for each transcript, and wrote reflexive notes in my journal prior to analyzing the next transcript. Finally, I created a table of collective super-ordinate themes from the tables representing the themes I generated from individual transcripts. The collective super-ordinate themes represent the experience of the group of participants.

Results of qualitative data analysis for Question 1. My analysis of the raw qualitative data and a brief summary for each participant follows. An external assessor has corroborated my analysis. I have used letters, as opposed to numbers, to identify participants whose interviews I recorded and analyzed. The sequence of letters does not signify the order of a participant's enrollment into Campus Tails. The order of participants in the qualitative analysis section does not correspond to the order of participants in the quantitative analysis section.

Participant A (PA). Table 21 shows the emergent and super-ordinate themes I generated from my analysis of PA's semi-structured exit interview narrative.

Table 21

Emergent and Super-Ordinate Themes for Participant A

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?	
Subquestion 1: What attracted them to the program?	
Emergent Themes	***Super-Ordinate Themes***
♦ wants a dog, wants to spend time with a dog	♦ loves dogs
♦ needs break from academic stressors, needs something scheduled into week	♦ needs scheduled stress relief
♦ symptoms of anxiety	♦ experiencing symptoms
♦ tried talk therapy, tried other stress-relief alternatives (e.g., exercise, yoga), idea of dog therapy appealing	♦ trying something new
Subquestion 2: Did they report perceived change as a result of participation?	
Emergent Themes	***Super-Ordinate Themes***
♦ made friend	♦ developed meaningful interspecies friendship
♦ enjoyed meeting and talking to new people on campus, enjoyed watching others interact with dog, shared pictures of dog with friends, talked with someone else who walks same dog, got out of room more	♦ increased sociability
♦ provided distraction from stressors, had fun, walked outside , enjoyed playing with dog	♦ relieved stress
♦ changed pattern of social avoidance after panic attack, provided distraction from symptoms	♦ relieved symptoms
♦ liked shifting focus from self to someone else	♦ shifted focus from self to other
♦ enjoyed feeling reliable, dependable, responsible, capable, effective, caring	♦ increased self-efficacy/self-esteem
♦ dog made me smile, had fun, enjoyed playing	♦ elevated mood
♦ felt sense of belonging, acceptance	♦ reported benefit from experiencing attachment-related functions

Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?	
Emergent Themes	***Super-Ordinate Themes***
♦ would recommend to friend, appreciated changes, fun, looked forward to sessions	♦ expressed positive feedback for program
♦ valued having scheduled time	♦ reported benefit from having regularly scheduled time
♦ grateful for experience	♦ expressed gratitude for experience
♦ nice to be with dog, felt sense of belonging, acceptance, acknowledged attachment	♦ explicitly valued attachment-related functions
♦ valued nonverbal, nonjudgmental relationship	♦ explicitly valued interspecies connection
♦ expressed appreciation of dog's qualities	♦ explicitly expressed admiration for dog

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ history of and symptoms of anxiety	♦ had symptoms, opted not to go to counseling
♦ talk therapy didn't work	
♦ doesn't want to try medication	
♦ tried other alternatives for stress relief	

As a way to alleviate symptoms of anxiety, PA came to Campus Tails as an alternative to talk therapy, other methods of stress relief (exercise), and because he or she did not want to take medication. In addition, the idea of having a recurring weekly therapy-dog session was appealing to PA because it provided a predictable, scheduled break from academic stressors. At the end of participating in the program, PA reported experiencing stress-relief, symptom relief after a panic attack, mood elevation, increased self-efficacy/self-esteem, and increased sociability. He or she also reported shifting focus away from egocentric concerns and toward another. Finally, PA reported developing a meaningful interspecies relationship with a dog. PA would recommend Campus Tails to a friend. He or she expressed positive feedback and gratitude for the program, admiration for the dog, and appreciation for their interspecies connection. PA also felt the benefits of attachment-related functions such as feeling accepted

and having a sense of belonging. Although PA was suffering from symptoms of anxiety, he or she opted not to go to counseling because previous counseling had not worked well, he or she had tried exercise as an alternative to counseling, and did not want to try medication. PA's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Participant B (PB). Table 22 shows the emergent and super-ordinate themes I generated from my analysis of PB's semi-structured exit interview.

Table 22

Emergent and Super-Ordinate Themes for Participant B

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?	
Subquestion 1: What attracted them to the program?	
Emergent Themes	***Super-Ordinate Themes***
♦ attached to dogs at home, wants nonverbal relationship, comforted by animals, likes that they have no expectations, thinks pets are more emotionally attuned than people are	♦ replacement function/substitution for attachment-related functions from pets
♦ dogs are soothing/relaxing to be around, likes nonverbal relationship, looks for opportunities to be with dogs for a "fur fix"	♦ seeking attachment-related functions
♦ likes being with animals and forgetting self	♦ shift focus from self to other
♦ animal lover	♦ loves dogs
♦ symptoms of depression	♦ experiencing symptoms
Subquestion 2: Did they report perceived change as a result of participation?	
Emergent Themes	***Super-Ordinate Themes***
♦ enjoyed thinking of someone else	♦ shifted focus from self to other
♦ felt brighter and happier after being with dog, and other people noticed	♦ elevated mood
♦ believed that dog modeled lightheartedness and got another perspective on life	♦ reported positive shift in attitude
♦ provides comfort	♦ reported benefit from experiencing attachment-related functions
♦ enjoyed meeting and talking with new people while walking dog	♦ increased sociability
♦ distraction from stressors, relaxed more often, had fun, nice break, got outside more	♦ relieved stress
♦ made friend	♦ developed meaningful interspecies friendship

Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?	
Emergent Themes	***Super-Ordinate Themes***
♦ provided timely relief according to class schedule, needed scheduled time to look forward to	♦ reported benefit from having regularly scheduled time
♦ would recommend to friend, worthwhile, advocates for program permanence, would like more sessions available, wishes she could have done the program all four years, good experience, successful results, looked forward to sessions	♦ expressed positive feedback for program
♦ appreciated nonjudgmental relationship and nonverbal communication	♦ explicitly valued interspecies connection
♦ felt connected to dog	♦ explicitly expressed admiration for dog

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ symptoms of depression and anxiety, lets things build up	♦ had symptoms, opted not to go to counseling
♦ didn't want to be in therapy now, not opposed to therapy	

As a way to elevate mood, PB came to Campus Tails seeking attachment-related functions from a dog, and a substitution for some of the attachment-related functions he or she experienced and missed from dogs at home. In addition, PB wanted someone to focus someone on other than him- or herself. At the end of participating in the program, PB reported experiencing stress-relief, mood elevation, increased sociability, and a positive shift in attitude. PB also reported developing a meaningful interspecies relationship with a dog, and shifting focus away from egocentric concerns and toward another. PB would recommend Campus Tails to a friend. He or she expressed positive feedback for the program, admiration for the dog, and appreciation for their interspecies connection. PB appreciated having scheduled time with the therapy dog. Although PB was suffering from symptoms of depression and anxiety, he or she

reported disinclination to be in counseling at that time. However, PB was open to the possibility of being in counseling at some point. PB's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Participant C (PC). Table 23 shows the emergent and super-ordinate themes I generated from my analysis of PC's semi-structured exit interview narrative.

Table 23

Emergent and Super-Ordinate Themes for Participant C

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?	
Subquestion 1: What attracted them to the program?	
Emergent Themes	***Super-Ordinate Themes***
♦ symptoms of depression and anxiety	♦ experiencing symptoms
♦ attached to dog at home, comforted by pet, needed replacement for feeling that dog at home provided	♦ replacement function/substitution for attachment-related functions from pet
♦ wanted a dog to pet and hold	♦ seeking attachment-related functions
Subquestion 2: Did they report perceived change as a result of participation?	
Emergent Themes	***Super-Ordinate Themes***
♦ felt comforted, liked proximity, liked touch	♦ reported benefit from experiencing attachment-related functions
♦ relaxing, good break, distraction from typical thoughts and stressors, had fun	♦ relieved stress
♦ enjoyed thinking about someone else	♦ shifted focus from self to other
♦ valued emerging sense of responsibility to dog and ability to be dependable	♦ increased self-efficacy/self-esteem
♦ dog makes me happy, fun to be with dog, positive influence in my life	♦ elevated mood
♦ enjoyed meeting people who stopped to pet dog while they were out together	♦ increased sociability
Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?	
Emergent Themes	***Super-Ordinate Themes***
♦ enjoyed nonjudgmental relationship	♦ explicitly valued interspecies connection
♦ would recommend to friend, advocates for program permanence, would have liked more frequent session, worthwhile, timing of session important	♦ expressed positive feedback for program
♦ appreciated dog's qualities	♦ explicitly expressed admiration for dog
Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ symptoms of depression and anxiety	♦ had symptoms, opted not to go to counseling
♦ seeking attachment-related functions from dog	

As a way to alleviate symptoms of depression and anxiety, PC came to Campus Tails seeking a attachment-related functions from a dog and a substitution for some of the attachment-related functions he or she experienced and missed having from a dog at home. At the end of participating in the program, PC reported experiencing stress-relief, mood elevation, increased self-efficacy/self-esteem, and increased sociability. He or she also reported shifting focus away from egocentric concerns and toward another. Finally, PC benefitted from experiencing attachment-related functions. PC would recommend Campus Tails to a friend and reported inquiring about the program in response to a friend's recommendation. He or she expressed positive feedback for the program, admiration for the dog, and appreciation for their interspecies connection. Although PC was suffering from symptoms of depression and anxiety, he or she opted not to go to counseling. PC's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Participant D (PD). Table 24 shows the emergent and super-ordinate themes I generated from my analysis of PD's semi-structured exit interview narrative.

Table 24

Emergent and Super-Ordinate Themes for Participant D

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?	
Subquestion 1: What attracted them to the program?	
Emergent Themes	***Super-Ordinate Themes***
♦ misses dog at home, nonjudgmental relationship, always happy to see me	♦ replacement function/substitution for pet
♦ loves dogs	♦ loves dogs
♦ symptoms of depression	♦ experiencing symptoms
Subquestion 2: Did they report perceived change as a result of participation?	
Emergent Themes	***Super-Ordinate Themes***
♦ experienced increased emotional stability, described dog as reliable/dependable	♦ reported benefit from experiencing attachment-related functions
♦ got outside more, walked, distraction from stressors, distraction, played	♦ relieved stress
♦ felt happy to see dog	♦ elevated mood
♦ nice to talk to people while walking dog, enjoyed meeting new people while walking dog, inspired to join more clubs	♦ increased sociability
♦ felt dependable and reliable for dog, felt liked by dog, liked feeling of being some dog wanted to be with	♦ increased self-esteem
Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?	
Emergent Themes	***Super-Ordinate Themes***
♦ valued nonverbal connection and nonjudgmental relationship, talked to dog on walks, did not feel self-conscious with dog	♦ explicitly valued interspecies connection
♦ recommended program to a friend, would like opportunities to play off leash, advocates for program, permanence	♦ expressed positive feedback for program
♦ scheduled time was good	♦ reported benefit from having regularly scheduled time
♦ appreciated dog's qualities	♦ explicitly expressed admiration for dog

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ symptoms of depression ♦ didn't want to go to counseling at this point, wanted contact with a dog	♦ had symptoms, opted not to go to counseling

As a way to alleviate symptoms of depression, PD came to Campus Tails seeking a substitution for some of the attachment-related functions he or she experienced and missed from a dog at home. At the end of participating in the program, PD reported experiencing stress-relief, mood elevation, increased self-esteem, and increased sociability. Finally, PC benefitted from experiencing attachment-related functions. PD recommended Campus Tails to a friend. He or she expressed positive feedback for the program, and appreciation for the interspecies connection that developed with the therapy dog. Although PD was suffering from symptoms of depression, he or she did not want to go to counseling. PD's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Participant E (PE). Table 25 shows the emergent and super-ordinate themes I generated from my analysis of PE's semi-structured exit interview narrative.

Table 25

Emergent and Super-Ordinate Themes for Participant E

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?	
Subquestion 1: What attracted them to the program?	
Emergent Themes	***Super-Ordinate Themes***
♦ history of depression and current symptoms	♦ experiencing symptoms
♦ couldn't get into counseling services quickly enough with schedule, tried exercise as an alternative, now wants to try this	♦ trying something new
♦ likes dogs	♦ likes dogs
Subquestion 2: Did they report perceived change as a result of participation?	
Emergent Themes	***Super-Ordinate Themes***
♦ nice break, distraction from stressors	♦ relieved stress
♦ enjoyed time with dog, had fun, feels good with a dog, looked forward to sessions	♦ elevated mood
♦ initially anxious about people approaching to talk and see dog, but became comfortable over time	♦ decreased social avoidance/increased sociability
♦ initially anxious about handling dog, but became comfortable over time	♦ increased self-mastery
Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?	
Emergent Themes	***Super-Ordinate Themes***
♦ dog is good, dog is funny	♦ explicitly expressed admiration for dog
♦ would recommend to a friend, helpful, glad to have participated, would like more options for activities, would like more sessions, had fun, good break, advocates for program permanency	♦ expressed positive feedback for program
♦ nice to have scheduled time	♦ reported benefit from having regularly scheduled time
♦ expressed gratitude for program	♦ expressed gratitude for experience

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ history of depression and current symptoms of depression ♦ couldn't get into counseling services quickly enough with schedule ♦ not opposed to counseling ♦ tried other alternatives	♦ had symptoms, couldn't get into counseling quickly enough so opted not to go

PE decided to try working with a therapy dog as a way to alleviate symptoms of depression because he or she was not able to get an appointment with Counseling Services that immediately worked with his or her schedule, has tried other alternatives to talk therapy, and wanted to try this. At the end of participating in the program, PE reported experiencing stress-relief, mood elevation, increased self-mastery, decreased social avoidance/increased sociability. PE would recommend Campus Tails to a friend. He or she expressed positive feedback for the program, gratitude for the experience, and admiration for the dog. PE was suffering from symptoms of depression, but opted to try something new rather than wait for a counseling appointment that fit his or her schedule. PE's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Participant F (PF). Table 26 shows the emergent and super-ordinate themes I generated from my analysis of PF's semi-structured exit interview narrative.

Table 26

Emergent and Super-Ordinate Themes for Participant F

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?	
Subquestion 1: What attracted them to the program?	
Emergent Themes	***Super-Ordinate Themes***
♦ history of anxiety and depression, current symptoms	♦ experiencing symptoms
♦ really big animal person	♦ loves dogs
♦ animals are a source of comfort	♦ seeking attachment-related functions
♦ attached to dogs at home	♦ replacement function/substitute for attachment related-functions from pets
Subquestion 2: Did they report perceived change as a result of participation?	
Emergent Themes	***Super-Ordinate Themes***
♦ great escape/break	♦ relieved stress
♦ looked forward to it, feels happy to see dog, anticipates feeling good and gets excited before seeing dog, feels motivated to do homework after session, sessions interrupted habit of sleeping too much on day off	♦ elevated mood
♦ got out of room more, talked with more people, got involved in another student's photography project because of dog	♦ increased sociability
♦ felt comforted and calmed to be with dog and to see her across campus with other participants, felt soothed by touching dog, felt grounded when with dog, dog provided sense of stability	♦ reported benefit from experiencing attachment-related functions
♦ thinks of dog during week and feels good	♦ internalized positive schema of relationship with dog
♦ made a friend	♦ developed meaningful interspecies friendship

Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?	
Emergent Themes	***Super-Ordinate Themes***
♦ expressed appreciation for dog's qualities, appreciated connection	♦ explicitly expressed admiration for dog
♦ recommended program to friend, looked forward to sessions, would have liked more semesters, appreciated having something to look forward to, would like more activity options, wants more sessions per week, had positive effect, loved experience	♦ expressed positive feedback for program

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ history and symptoms of depression and anxiety	♦ had symptoms, opted not to be in counseling at this point
♦ taking a break from counseling	

As a way to alleviate symptoms of depression and anxiety, PF came to Campus Tails seeking attachment-related functions from a dog, and seeking a substitution for some of the attachment-related functions he or she experienced and missed from dogs at home. At the end of participating in the program, PF reported experiencing stress-relief, mood elevation, and increased sociability. PF benefitted from experiencing attachment-related functions, and internalizing a positive schema of his or her relationship with the dog. Finally, PF reported developing a meaningful interspecies relationship with a dog. PF recommended Campus Tails to a friend. He or she expressed positive feedback for the program, and admiration for the dog. Although PF was suffering from symptoms of anxiety and depression, he or she was taking a break from counseling. PF's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Participant G (PG). Table 27 shows the emergent and super-ordinate themes I generated from my analysis of PG's semi-structured exit interview narrative.

Table 27

Emergent and Super-Ordinate Themes for Participant G

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?

Subquestion 1: What attracted them to the program?

Emergent Themes	*Super-Ordinate Themes*
♦ symptoms of anxiety	♦ experiencing symptoms
♦ likes dogs	♦ likes dogs
♦ likes idea of animal therapy, spending time with dog appealing	♦ likes idea of animal therapy

Subquestion 2: Did they report perceived change as a result of participation?

Emergent Themes	*Super-Ordinate Themes*
♦ distraction from stressors, walking outside	♦ relieved stress
♦ felt good to have something/someone new to think about	♦ shifted perspective from self to other
♦ initially anxious interacting with new people when with dog but became comfortable, cool having dog to talk about with people, had good conversations, made a new good friend because of talking with new people, happy to have new friend	♦ decreased social avoidance/increased sociability
♦ likes to touch dog, feels dog is attuned to her	♦ reported benefit from experiencing attachment-related functions
♦ initially anxious handling dog, didn't want to do something stupid, became comfortable over time, now more confident with dogs, surprised at new feeling of confidence	♦ increased self-mastery
♦ made a friend	♦ developed meaningful interspecies friendship

Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?

Emergent Themes	*Super-Ordinate Themes*
♦ valued nonjudgmental relationship	♦ valued interspecies connection
♦ liked petting dog, experienced attunement	♦ explicitly valued attachment-related functions
♦ would recommend to a friend, good program	♦ expressed positive feedback for program
♦ expressed appreciation for dog's qualities, felt connection with dog	♦ explicitly expressed admiration for dog

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?	
Emergent Themes	***Super-Ordinate Themes***
♦ had symptoms of anxiety ♦ decided not to go to counseling	♦ had symptoms, opted not to go to counseling

PG was attracted to Campus Tails because he or she found the idea of using animal-assisted therapy as a way to decrease anxiety appealing. He or she likes dogs, and would like to spend time with one. At the end of participating in the program, PG reported experiencing stress-relief, decreased social avoidance/increased sociability, and increased self-mastery. He or she also reported shifting focus away from egocentric concerns and toward another. Finally, PG reported developing a meaningful interspecies relationship with a dog. PG would recommend Campus Tails to a friend. He or she expressed positive feedback for the program, admiration for the dog, and appreciation for their interspecies connection. Finally, PG benefitted from experiencing attachment-related functions. Although PG was suffering from symptoms of anxiety, he or she did not want to go to counseling. PG's narrative suggests that the AAA intervention seems to have affected him or her positively, and he or she seems to have valued the experience.

Summary of qualitative results in relation to Question 1. In the following section, I describe the collective super-ordinate themes present in the qualitative results in relation to Question 1. I further explore the results, and provide broader speculation and additional commentary in Chapter 6. Table 28 shows the collective super-ordinate themes I generated from the seven tables of individual themes, and the number of participants endorsing each theme.

Table 28

Collective Super-Ordinate Themes for Group

Question 1: What psychological themes are present in Campus Tails' Participants' descriptive narratives of their involvement in the program?		
Subquestion 1: What attracted them to the program?		
Individual Super-Ordinate Themes	***Collective Super-Ordinate Themes***	***Number of Participants Endorsing***
♦ experiencing symptoms (PA, PB, PC, PD,PE, PF, PG)	♦ experiencing symptoms	♦ 7
♦ loves dogs (PA, PB, PD, PF)/likes dogs (PE, PG)	♦ fond of dogs	♦ 6
♦ replacement function/substitution for attachment-related functions from pet (PB, PC, PD, PF)/ seeking attachment-related functions (PB, PC, PF)	♦ seeking attachment-related functions from dog	♦ 4
♦ trying something new (PA, PE)/ likes idea of animal therapy (PG)	♦ trying new treatment	♦ 3
♦ shift focus from self to other (PB)	♦ wants someone to focus on	♦ 1
♦ needs scheduled stress relief (PA)	♦ needs scheduled stress relief	♦ 1
Subquestion 2: Did they report perceived change as a result of participation?		
Individual Super-Ordinate Themes	***Collective Super-Ordinate Themes***	***Number of Participants Endorsing***
♦ relieved stress (PA, PB, PC, PD, PE, PF, PG)	♦ relieved stress	♦ 7
♦ increased sociability (PA, PB, PC, PD, PF)/ decreased social avoidance/ increased sociability (PE, PG)	♦ positively affected sociability	♦ 7
♦ elevated mood (PA, PB, PC, PD, PE, PF)	♦ elevated mood	♦ 6
♦ reported benefit from attachment-related functions (PA, PB, PC, PD, PF, PG)/internalized	♦ explicitly benefited from attachment-related functions	♦ 6

positive schema of relationship with dog (PF)		
♦ developed meaningful interspecies friendship (PA, PB, PF, PG)	♦ developed meaningful interspecies friendship	♦ 4
♦ increased self-efficacy/self-esteem (PA, PD)/ increased self-mastery (PE, PG)	♦ increases positive sense of self	♦ 4
♦ shifted focus from self to other (PA, PB, PC, PG)	♦ shifted focus from self to other	♦ 4
♦ relieved symptoms (PA)	♦ relieved symptoms of panic attack	♦ 1
♦ reported positive shift in attitude (PB)	♦ conscious of positive shift in attitude	♦ 1

Subquestion 3: Were they satisfied enough with the program to recommend it to a friend?

Individual Super-Ordinate Themes	*Collective Super-Ordinate Themes*	*Number of Participants Endorsing*
♦ would recommend program (PA, PB, PC, PE, PG)/ have recommended program (PD, PF)	♦ would recommend program	♦ 7
♦ expressed positive feedback for Campus Tails (PA, PB, PC, PD, PE, PF, PG)	♦ expressed positive feedback	♦ 7
♦ explicitly expressed admiration for dog (PA, PB, PC, PD, PE, PF, PG)	♦ explicitly expressed admiration for dog	♦ 7
♦ reported benefit from having regularly scheduled time (PA, PB, PD, PE)	♦ benefitted from regular session time	♦ 4
♦ explicitly valued interspecies connection (PA, PB, PC, PD)	♦ explicitly valued interspecies connection	♦ 4
♦ expressed gratitude for program (PA, PE)	♦ expressed gratitude for program	♦ 2
♦ explicitly valued attachment-related functions (PA, PG)	♦ explicitly valued attachment-related functions	♦ 2

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling?		
Individual Super-Ordinate Themes	***Collective Super-Ordinate Themes***	***Number of Participants Endorsing***
♦ symptoms of depression (PB, PD, PE)/ symptoms of anxiety (PA,PG)/ symptoms of depression and anxiety (PC, PF)	♦ experiencing symptoms	♦ 7
♦ talk therapy didn't work (PA)/ doesn't want medication (PA)/ tried other alternatives already (PA, PE)/ didn't want counseling now (PB, PF, PG)/ seeking attachment-related functions from dog (PC, PD)/ couldn't get into counseling when wanted (PE)	♦ opted not to go to counseling	♦ 7

Subquestion 1: What attracted them to the program? The group of seven interviewed participants collectively cited six reasons for being attracted to Campus Tails. The following list organizes those reasons in order of number of endorsements. I further explore the qualitative results, and provide broader speculation and additional commentary in Chapter 6.

1. All seven interviewed participants endorsed having symptoms of depression and/or anxiety, and cited that as one of the reasons they were attracted to Campus Tails.
2. Six interviewed participants cited they were attracted to the program because they are fond of dogs.
3. Four interviewed participants seemed to be seeking attachment-related functions from dogs.

4. Three interviewed participants liked the idea of trying a new type of treatment for their symptoms.
5. One interviewed participant stated that one of the reasons for being attracted to Campus Tails was the opportunity to think about someone other than him- or herself.
6. One interviewed participant endorsed needing stress relief that would be scheduled as a regular part of the week.

Subquestion 2: Did they report perceived change as a result of participation? The group of seven interviewed participants collectively reported experiencing nine ways in which they perceived change while participating in Campus Tails. The following list organizes those perceived changes in order of number of endorsements. I further explore the qualitative results, and provide broader speculation and additional commentary in Chapter 6.

1. All seven interviewed participants reported that spending time with their therapy dog relieved stress.
2. All seven interviewed participants reported that the AAA intervention positively affected their sociability.
3. Six interviewed participants reported that the AAA intervention elevated their mood.
4. Six interviewed participants reported that they benefited from attachment-related functions from the dog.
5. Four interviewed participants reported that they developed an interspecies friendship that was meaningful to them.

6. Four interviewed participants reported that spending time with the therapy dog gave them a positive sense of themselves.
7. Four interviewed participants reported that it felt good to focus on someone other than themselves.
8. One interviewed participant reported that being with the therapy dog relieved symptoms following a panic attack.
9. One interviewed participant reported being conscious of a positive shift in perspective.

Subquestion 3: Were they satisfied enough with the program to recommend it to a friend? The group of seven interviewed participants collectively expressed seven ways in which they were satisfied with Campus Tails. The following list organizes those points in order of number of endorsements. I further explore the qualitative results, and provide broader speculation and additional commentary in Chapter 6.

1. All seven interviewed participants would recommend Campus Tails to a friend.
2. All seven interviewed participants expressed positive feedback for Campus Tails.
3. All seven interviewed participants explicitly expressed admiration for the dog with whom they spent time.
4. Four interviewed participants reported a benefit from having a regularly scheduled time each week.
5. Four interviewed participants explicitly valued the interspecies connection they felt with the dog.
6. Two interviewed participants expressed gratitude for the program.

7. Two interviewed participants explicitly valued the attachment-related functions they experienced.

Subquestion 4: Did I reach students with symptoms of depression and/or anxiety who did not want to go to counseling? Program inclusion/exclusion criteria excludes students who are engaged in counseling from participating in Campus Tails. Qualitative results show that the group of seven interviewed participants collectively endorsed having symptoms of depression and/or anxiety and did not want to be in counseling. The following list organizes symptom categories in order of number of endorsements. I further explore the qualitative results, and provide broader speculation and additional commentary in Chapter 6.

1. Three interviewed participants endorsed having symptoms of depression.
2. Two interviewed participants endorsed having symptoms of anxiety.
3. Two interviewed participants endorsed having symptoms of both depression and anxiety.

In addition, quantitative results show that 12 of the 14 participants had a baseline T-score on the Depression subscale during phase A of the study that met criteria for program inclusion. Of those 12 participants, 10 had a T-score indicating moderate psychological distress, and two had a T-score indicating high psychological distress in this domain. As a group, participants had a collective mean baseline T-score on the Depression subscale indicating moderate psychological distress in this domain. Results show that 12 of the 14 participants had a baseline T-score on the Generalized Anxiety subscale that met criteria for program inclusion. Of those 12 participants, 10 had a T-score indicating moderate psychological distress, one had a T-score indicating high psychological distress, and one had a T-score indicating severe psychological distress in this domain. As a group, participants had a collective mean baseline T-score on the Generalized

Anxiety indicating moderate psychological distress in this domain. Results show that 13 of the 14 participants had a baseline T-score on the Social Anxiety subscale that met criteria for program inclusion. Of those 13 participants, eight had a T-score indicating high psychological distress, four had a T-score indicating moderate psychological distress, and one had a T-score indicating severe psychological distress in this domain. As a group, participants had a collective mean baseline T-score on the Social Anxiety subscale indicating high psychological distress in this domain. Results show that two of the 14 participants had baseline T-scores indicating that they endorsed having symptoms of anxiety alone, and 12 had baseline T-scores indicating that they endorsed having symptoms of both depression and anxiety.

Question 2: Is an on-campus therapy-dog program feasible at Bowdoin College? In order to answer Question 2 and its relevant subquestions, I summarize from the reflexive notes I wrote as I developed and operationalized Campus Tails. I provide additional commentary about the feasibility of operating an on-campus therapy-dog program in Chapter 6.

Subquestion 1: What did I do to recruit participants? How much time and energy went into it? Prior to actively recruiting participants, and in consultation with Bernie Hershberger, PhD, I solicited support from several potentially helpful campus departments (e.g., Counseling Services, Health Services, Student Affairs, and the library). In addition to being on-campus allies for Campus Tails, those departments served as possible referral sources. I also completed the steps necessary to obtain permission to operate a therapy-dog program on campus. Since I conducted research on the effects that animal-assisted activities had on participants' symptoms of depression and/or anxiety, I needed to acquire approval for Campus Tails from both Bowdoin College and Antioch University New England. That process took approximately two months and was somewhat complicated since it included standardizing procedures for the program, making

sufficient safety provisions, and addressing various ethical considerations for both humans and animals according to each institution's guidelines.

I began recruiting students for participation in Campus Tails on the first day of the spring semester and began matching enrolled participants with dogs two weeks later. In order to recruit students, I placed posters (Appendix A) on campus in public places (e.g., Health Services, library, dining halls, Peer Health, Center for Learning, the psychology department, Women's Resource Center, bookstore, Safe Space). I also placed ads in the Bowdoin Orient (the campus newspaper), and the Bowdoin Daily Sun (the electronic newsletter). I initially included only my campus email address on the posters and in the ads as a means of contacting me for more information about the program. I received 20 inquiries from the first round of advertising. The number was adequate, albeit not what I expected. Dr. Hershberger suggested that I include my cell phone number so that students could text me for more information. When I did so, I received several texted inquiries in a short amount of time.

Designing the various advertisements took little time and energy. Hanging posters and keeping them current also took relatively little time and energy because I had a research assistant helping me. However, it was more time consuming than I anticipated because Campus Tails' posters were often partially obscured by posters hung by other on-campus program or event organizers competing for wall space, so I needed to attend to them regularly.

Subquestion 2: What did I do to recruit therapy dogs? How much time and energy went into it? I wanted Campus Tails to be based in the Bowdoin College community as much as possible. In order to recruit therapy dogs, I sent recruitment notices by email to faculty and staff. As a safety measure intended to better ensure I had therapy dogs to work with, I also spoke with a few therapy-dog owners in the broader community. As it turned out, two members of the

Bowdoin faculty who had been considering training their dogs to become registered therapy dogs decided to commit to being part of Campus Tails. Each faculty member took the steps necessary to train, register, and have their dog ready by the start of the program, which took three to four months. In addition, each dog owner agreed to the conditions I established for their dog's participation as detailed in the Informed Consent Form for Dog Owners (Appendix F).

Recruiting dog owners for Campus Tails took considerable time and energy on my part, more than I had anticipated. Early in the recruiting process, I had several leads for dog owners, including community members who had already had registered therapy dogs, and most of them could not commit. It took most of the fall semester to find on-campus dog owners who were willing to commit the time and energy necessary to be ready to be involved in the program for the spring. The process of preparing dogs to participate in the program (i.e., training and registering) took considerable time and energy on each dog owner's part.

Summary. Results show that the two most common reasons participants were attracted to Campus Tails were (a) experiencing symptoms of depression and/or anxiety, and (b) being fond of dogs. All interviewed participants reported perceiving change in their symptoms, experiencing multiple psychological benefits, and associating changes with program participation. In addition, all participants expressed satisfaction with and positive feedback for Campus Tails, stated that they would recommend it to a friend, and expressed admiration for their therapy dog. Campus Tails attracted targeted students (i.e., those who were not in counseling despite having symptoms of depression and/or anxiety). The AAA intervention seems to be associated with a decrease in symptoms of depression and/or anxiety in this group of participants.

Developing Campus Tails, operationalizing it, and recruiting dog owners willing to supply therapy dogs took most of the fall semester. Much of that time and energy was directed toward meeting the conditions necessary for conducting research on the program. Recruiting participants took less time and energy than recruiting dogs did.

Chapter 6: Discussion

In the following sections, I discuss the research methods I used in this project, the integrated results of my quantitative and qualitative data analyses, my initial assessment of the therapy-dog pilot program, and my thoughts on potential implications for clinical practice. I then discuss the feasibility of an on-campus therapy dog program at Bowdoin College, reflect on some limitations of this research, and state my conclusions. Finally, I suggest directions for future research studying the effectiveness of AAA interventions with college students.

Discussion of Methods

In the following section, I discuss my decision to use a concurrent mixed-methods research design, and my choice of quantitative and qualitative research methods. Within the context of the discussion, I comment on the ways in which each methodology assisted me in achieving the goals for this study, the inherent strengths and limitations of each method as I understand them, and how those characteristics may have affected my study.

Concurrent mixed-methods research design. Combining a quantitative method (A–B single-case design) with a qualitative method (interpretative phenomenological analysis [IPA]) allowed me to collect, analyze, report on, and discuss two different types of data that are based on two different epistemological assumptions. The single-case design methodology is based on collecting numerical data, making objective observations, and applying deductive reasoning. IPA is based on collecting descriptive data, implicitly collaborating in intersubjective social construction, and applying inductive reasoning. Using a mixed-methods approach allowed me to minimize the weaknesses of each discrete method and provided me with an internal mechanism for concurrently triangulating and corroborating the results of each method, which strengthens the persuasiveness of my inferences (Mertens, 2010).

Using the mixed-methods approach also enabled me to provide an integrated discussion of my research results. Integrating the quantitative and qualitative results yields a richer, more comprehensive understanding of the psychological effects of participating in Campus Tails by expanding awareness of the subtle psychological dimensions that participation in the program activated. The quantitative results allowed me to draw inferences about whether or not the AAA interventions seem to have decreased symptoms of depression and/or anxiety as measured by relevant subscales from the CCAPS-34. The qualitative results that emerged from the narrative accounts of being in Campus Tails allowed me to draw inferences about and more broadly speculate on why the AAA interventions seem to have been effective. Simply stated, one method suggested that change took place while the other method implied what mechanisms of change might be operating.

The significant advantages of using a mixed-methods approach for this study outweighed the relative disadvantages. However, it is worth noting that in order to reap the benefits of what each method had to offer this project, I had to become familiar with two different methodologies, execute each with fidelity, and analyze the distinct data sets I collected using two separate analytical processes. Although it was ultimately rewarding, the process was time-consuming and labor-intensive. Using a mixed-methods approach may not be indicated or suitable for other research projects aimed at studying the psychological effects of AAAs. However, I think it was the best approach for this study, and I am glad I used it.

Quantitative: single-case design method. The single-case design method is often used to determine if the intervention phase of a study (phase B) creates conditions for research participants that are more desirable than what they experienced during the pre-intervention phase of the study (phase A; Kratochwill et al., 2010). It enabled me to draw valid inferences about the

effects of the AAA intervention on the dependent variables over time by comparing different conditions (e.g., no intervention during phase A and intervention during phase B) to the same subject over time (Kazdin, 2003; Kazdin, 2011; Nock, Michel, & Photos, 2008). In turn, I was able to infer whether there seems to be a relationship between symptoms of depression and/or anxiety and interacting with a therapy dog for each participant, and for the group of participants as a whole (Kratochwill et al., 2010).

For my purposes, the single-case design proved to be a good choice for my quantitative method for two reasons. First, I wanted to offer any eligible student who was suffering from symptoms of depression and/or anxiety the opportunity to participate in this unique on-campus therapy-dog pilot program as an alternative to traditional counseling; I did not want to withhold treatment from some students in order to establish a control/comparison group. Second, the single-case design allowed me to simplify the quantitative analysis by using a visual process articulated by descriptive indicators, as opposed to a statistical process to establish effect sizes. My goal was to infer clinical effects. I did not need to quantify the sizes of those effects; the degree of change in the dependent variables over time determined the effectiveness of the interventions. Using the single-case design method also enabled me to see idiosyncratic differences in each participant's data over time as represented in his or her line graphs. This detail made it possible to better account for the variability of a participant's performance on each subscale with increased descriptive specificity.

The two-condition, A–B, single-case design I used in this research is considered to be a quasi-experimental, as opposed to experimental, design because it does not include a reversal phase (i.e., a return to phase A) to establish if a participant's performance on subscales (i.e., dependent variables) return to baseline T-scores after withdrawing the intervention. In addition,

I assigned all Campus Tails participants to a treatment group rather than randomly assigning them to either a control or a treatment group. If I had used a single-case design that included a reversal phase, such as the A–B–A design or the A–B–A–B design, I would have strengthened the validity of my inferences. The A–B–A design includes the reversal phase, but stops short of including the second phase B indicated by the A–B–A–B design (Mertens, 2010; Robson, 2002). Nonetheless, I felt it was unnecessary at this initial stage of program development and evaluation to do more than an A–B design. If I find myself in a position to do a longer study aimed at replicating and expanding on the effects of this one, I will consider using a reversal design. However, as I discuss in the Directions for Future Research section (see below), research designs other than a single-case design with a reversal phase and one treatment group may provide researchers with a better choice for a next step.

Qualitative: interpretative phenomenological analysis (IPA). In order to answer my first research question and relevant subquestions, I needed a qualitative methodology that would enable me to identify the psychological themes that participants alluded to while reflecting on and describing their experience of participating in Campus Tails. IPA was a good fit for two reasons. First, it enabled me to inductively infer some of the themes that emerged from a participant's narrative account of interacting with a therapy dog by providing me with a step-by-step, idiographically-oriented, analytical process. The process, which directed me to focus on the specific, contextually-situated details each participant provided, enabled me to take into account each participant's unique perspective while implicitly collaborating in the process of identifying constructed psychological themes (Smith et al., 2009). Second, IPA enabled me to identify salient similarities among the themes associated with individual participants, and discuss the patterns of those themes collectively as representing the group of participants.

However, the breadth and depth of an IPA depends upon two essential variables. The first essential variable is each participant's capacity to effectively reflect on and communicate his or her thoughts, feelings, and sensory experiences to the researcher while being interviewed. As is the case with any group of people, some interviewed participants in this study were willing and/or had the psychological capacity to more deeply engage in self-reflection and reporting on subjective experience than other participants were. Without doubt, the qualities of each participant's interview have affected the inferences reported in this dissertation. The second essential variable is the researcher's ability to adequately frame interview questions, create an environment in which the interviewee feels comfortable to speak openly, and maintain fidelity to the prescribed analytic process. Although I gave each step of the IPA process my best effort during the research design process, in retrospect, I regret that I did not include additional open-ended questions in my semi-structured interview protocol, and I regret that I did not provide participants with a more in-depth orientation to the interview process itself prior to starting the interview. The qualities associated with the process of interviewing have affected the inferences reported in this dissertation.

The scope of an IPA also includes the researcher's ability to engage with the qualitative data by interpreting, organizing, co-constructing, and reporting on emergent themes. Regardless of my efforts to identify and bracket my biases, my personal and professional perspectives have dynamically and inextricably become part of the analytic process to some degree (Brocki & Wearden, 2006; Salmon, 2003). In other words, the results reported here have been influenced by the ways in which I have understood and categorized emergent themes and by the preferences I have given some emergent themes in order to create super-ordinate themes.

The issue of the researcher's subjective involvement in the analytic process can be construed as an inherent methodological limitation of IPA. However, it can also be construed as an inherent methodological strength because it encourages inductive processes that have the potential to generate unexpected hypothesis that may become directions for future research. Brocki and Wearden (2006) assert that "the judgement [*sic*] about what is good qualitative analysis remains rather subjective and ineffable" (p. 101). The qualitative findings reported here are not objective on any level, and they are not generalizable. However, they do provide important insights into the heartfelt reasons why participants of Campus Tails opted to meet with a therapy dog rather than a human therapist, and why they liked the pilot program.

Summary. A growing body of literature indicates that animal-assisted activities with a therapy dog may be effective in alleviating symptoms of depression (Folse et al., 1994; Souter & Miller, 2007; Walsh & Mertin, 1994) and anxiety (e.g., Bardill & Hutchinson, 1997; Barker & Dawson, 1998; Wilson, 1991). My primary intent for this study was to fill a gap in the literature measuring the effects of AAAs with college students. The single-case study/IPA concurrent mixed-methods approach I used to evaluate the on-campus therapy-dog pilot program enabled me to effectively address both of my research hypotheses and my first research question. In order to increase the validity of inferences, researchers considering projects similar to this one using the single-case study methodology should consider including a reversal phase in the research design. Notwithstanding opportunities for design amendments in future research, the inferences I make in this study are sufficiently valid for a pilot program, and they support findings reported elsewhere.

Integrated Discussion of Results

In the following section, I provide an integrated discussion of the quantitative and qualitative results of this study. I begin by discussing the results of Hypothesis 1 and Hypothesis

2, followed by a discussion of the results of Question 1. Within the context of the discussion, I comment on the ways in which this research supports and/or broadens the findings of existing research on animal-assisted therapy and/or animal-assisted activities. I finish the section with a general summary.

Next, I provide an initial assessment of Campus Tails, including a discussion of the results of Subquestions 1 – 4 of Question 1. I finish the section with a summary focused on the implications this research has for clinical practice. Finally, I discuss the results of Question 2 and its subquestions, and finish the section with a general summary.

Discussion of Hypothesis 1 and Hypothesis 2. Hypothesis 1 states that symptoms of depression as measured by the Depression subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails. Hypothesis 2 states that symptoms of anxiety as measured by the Generalized Anxiety subscale and/or the Social Anxiety subscale of the CCAPS-34 will decrease over time as a result of participation in Campus Tails.

Magnitude of change. Can I infer that the AAA intervention seemed to have the effect that I hypothesized it would? How much of an effect did it seem to have on participants' reported symptoms of depression and/or anxiety? The magnitude of change is determined by the change in the mean subscale T-scores between phases A and B of the research as illustrated on the line graphs.

Depression. Ten of the 14 participants had a change in mean T-scores on the Depression subscale indicating a decrease in symptoms of depression between research phases. Of those 10 participants, four had a change in mean T-scores indicating a remarkable magnitude of change, three had a change in mean T-scores indicating a modest magnitude of change, two had a change in mean T-scores indicating a small magnitude of change, and one had a change in mean

T-scores indicating a significant magnitude of change. Three of the 14 participants had a change in mean T-scores indicating an increase in symptoms of depression between research phases; the magnitude of change was small in each case. One of the 14 participants had no change mean T-scores indicating no magnitude of change between research phases. As a group, participants had a change in the collective mean T-scores indicating a modest magnitude of change showing an overall decrease in symptoms of depression between research phases.

From these results, I can infer that the intervention is associated with decreasing symptoms of depression over time as measured by the Depression subscale of the CCAPS-34. The magnitude of change varies significantly within the group, but can be characterized as modest overall. These results support previous research suggesting that interacting with a therapy dog may decrease symptoms of depression (e.g., Banks & Banks, 2002; Churchill et al., 1999; Cirulli et al, 2011; Filan & Llewellyn-Jones, 2006; Folse et al., 1994; Geisler, 2004; Halm, 2008; Kaminski et al, 2002; Moneymaker & Strimple, 1991; Souter & Miller, 2007; Walsh & Mertin, 1994; Wells, 2009). This study expands the existing literature on the benefits of AAT and AAAs by focusing on college students, and by using the Depression subscale of the CCAPS-34, which is designed to assess psychological symptoms of depression in college students.

Anxiety. Thirteen of the 14 participants had a change in mean T-scores on the Generalized Anxiety subscale indicating a decrease in symptoms of anxiety between research phases. Of those 13 participants, six had a change in mean T-scores indicating a modest magnitude of change, five had a change in mean T-scores indicating a remarkable magnitude of change, one had a change in mean T-scores indicating a significant magnitude of change, and one had a change in mean T-scores indicating a small magnitude of change. One of the 14

participants had no change in mean T-scores indicating no magnitude of change between research phases. As a group, participants had a change in collective mean T-scores indicating a remarkable magnitude of change showing an overall decrease in symptoms of anxiety between research phases.

Thirteen of the 14 participants had a change in mean T-scores on the Social Anxiety subscale indicating a decrease in symptoms of anxiety between research phases. Of those thirteen participants, seven had a change in mean T-scores indicating a remarkable magnitude of change, five had a change in mean T-scores indicating a modest magnitude of change, and one had a change in mean T-scores indicating a small magnitude of change. One of the 14 participants had a change in mean T-scores indicating an increase in symptoms between research phases; the magnitude of change was modest. As a group, participants had a change in collective mean T-scores indicating a modest magnitude of change showing a decrease in symptoms of anxiety between research phases.

From these results, I can infer that the intervention is associated with decreasing symptoms of anxiety over time as measured by the Generalized Anxiety and/or Social Anxiety subscales of the CCAPS-34. The magnitude of change indicated by the analysis of each subscale varies significantly within the group. Overall, the magnitude of change in the domain of generalized anxiety can be characterized as remarkable; the magnitude of change in the domain of social anxiety can be characterized as modest. The difference in results of overall magnitude of change between the two subcategories of anxiety may be explained by the fact that people who suffer from social anxiety have significant anxiety in social situations, such as walking a dog in public. Therefore, the intervention itself may evoke the symptoms it eventually alleviates.

These results support previous research suggesting that interacting with a therapy dog may improve symptoms of anxiety. (e.g., Bardill & Hutchinson, 1997; Barker & Dawson, 1998; Barker et al., 2005; Barker et al., 2010; Cole et al., 2007; Friedmann & Tsai, 2006; Kaminski at al., 2002; Odendaal, 2000; Wilson, 1997). This study expands the existing literature on the benefits of AAT and AAAs by focusing on college students, and by using the Generalized Anxiety and Social Anxiety subscales of the CCAPS-34, which are designed to assess symptoms of anxiety in college students.

Rate of change. How quickly did the intervention seem to have an effect? What was the rate of change over time? The rate of change between research phases is determined by a short or long latency period regarding changes in symptoms as indicated by a shift in level of performance between the end of phase A and the first measurement of phase B. The rate of change over time is determined by the trend of the line illustrated on the graph representing all of the data points over time, and the shift in level of performance from phase A. At the beginning of this study, I noted that I did not expect to see a rapid rate of change in symptoms of depression and/or anxiety at the onset of phase B.

Depression. At the first measurement of phase B, five of the 14 participants reported a change in symptoms of depression indicating a moderate rate of change. Four reported no change in symptoms of depression indicating a stable rate of change. Three reported a change in symptoms of depression indicating a slow rate of change. Two reported a change in symptoms of depression indicating a gradual rate of change.

Over time, five of the 14 participants reported changes in symptoms of depression indicating a slow rate of change. Four reported changes in symptoms of depression indicating a moderate rate of change. Four reported changes in symptoms of depression indicating a gradual

rate of change. One reported changes in symptoms of depression indicating a rapid rate of change. As a group, participants collectively reported changes in symptoms of depression indicating a gradual rate of change over time.

As I expected, neither the rate of change at the beginning of phase B, nor the rate of change over time, was rapid. One explanation for this outcome might be that biological, developmental, psychological, social, family, and spiritual factors may contribute to a person's experience of depression. Consequently, the complex constellation of factors involved can make depression a persistent internalizing disorder that can be clinically challenging to treat (Maddux & Winstead, 2008).

Anxiety. At the first measurement of phase B, six out of 14 participants reported a change in symptoms of generalized anxiety indicating a gradual rate of change. Five reported a change in symptoms of generalized anxiety indicating a moderate rate of change. Two reported a change in symptoms of generalized anxiety indicating a slow rate of change. One reported no change in symptoms of generalized anxiety indicating a stable rate of change.

Over time, six out of 14 participants reported changes in symptoms of generalized anxiety indicating a gradual rate of change. Five reported changes in symptoms of generalized anxiety indicating a moderate rate of change. Two reported changes in symptoms of generalized anxiety indicating a slow rate of change. One participant reported changes in symptoms of generalized anxiety indicating a rapid rate of change. As a group, participants collectively reported changes in symptoms of generalized anxiety indicating a moderate rate of change over time. As I expected, neither the rate of change at the beginning of phase B nor the rate of change over time was rapid.

At the first measurement of phase B, seven out of 14 participants reported a change in

symptoms of social anxiety indicating a gradual rate of change. Three reported a change in symptoms of social anxiety indicating a slow rate of change. Two reported a change in symptoms of social anxiety indicating a moderate rate of change at the first measurement of phase B. Two reported no change in symptoms of social anxiety indicating a stable rate of change.

Over time, nine out of 14 participants reported changes in symptoms of social anxiety indicating a moderate rate of change. Four reported changes in symptoms of social anxiety indicating a gradual rate of change. One reported changes in symptoms of social anxiety indicating a slow rate of change. As a group, participants collectively reported changes in symptoms of social anxiety indicating a gradual rate of change over time.

Again, as I expected, neither the rate of change at the beginning of phase B, nor the rate of change over time, was rapid. Similar to the explanation I offered in the section on depression, it might be that this outcome is associated with the fact that biological, developmental, psychological, social, family, and spiritual factors may contribute to a person's experience of anxiety. Consequently, the complex clinical picture can make anxiety a persistent internalizing disorder that is clinically challenging to treat (Maddux & Winstead, 2008).

Trends. Did the intervention seem to coincide with a trend in symptoms over time? Was the trend of reported symptoms in the direction I expected? The trend is the course of change in the data of each subscale as illustrated by the slope of the graphed line representing T-scores of reported increases or decreases in symptoms over time. A positive trend indicates an increase in reported symptoms, a negative trend indicates a decrease in reported symptoms, and a horizontal line (i.e., stability in the data) indicates no change in reported symptoms over time.

Depression. Ten of the 14 participants reported changes in symptoms of depression that

resulted in a negative trend between phase A and B. Four reported changes in symptoms of depression that resulted in a positive trend between phase A and B. Ten out of 14 participants reported changes in symptoms of depression that resulted in a negative trend in the data over time. Three reported changes in symptoms of depression that resulted in an unstable trend in the data over time. One reported changes in symptoms of depression that resulted in a positive trend in the data over time. From these results, I can infer that, for the majority of participants, the intervention is associated with a negative trend in symptoms of depression between research phases and a negative trend in symptoms of depression over time.

Anxiety. Thirteen of the 14 participants reported changes in symptoms of generalized anxiety that resulted in a negative trend between phase A and B. One reported changes in symptoms of generalized anxiety that resulted in a positive trend between phase A and B. Eleven out of 14 participants reported changes in symptoms of generalized anxiety that resulted in a negative trend in the data over time. Three reported changes in symptoms of generalized anxiety that resulted in an unstable trend in the data over time.

Thirteen of the 14 participants reported changes in symptoms of social anxiety that resulted in a negative trend between phase A and B. One reported changes in symptoms of social anxiety that resulted in a positive trend between phase A and B. Twelve out of 14 participants reported changes in symptoms of social anxiety that resulted in a negative trend in the data over time. Two reported changes in symptoms of social anxiety that resulted in an unstable trend in the data over time. From these results, I can infer that, for the majority of participants, the intervention is associated with a negative trend in symptoms of anxiety between research phases and a negative trend in symptoms of anxiety over time.

Discussion of Question 1: What psychological themes are present in Campus Tails' participants' descriptive narratives of their involvement in the program? Nine collective super-ordinate themes emerging from the qualitative results offer insight into the psychological mechanisms of change that may underlie the reported decreases in symptoms of depression and/or anxiety.

Increased perception of wellbeing. For the purposes of this study, I use the term *increased perception of wellbeing* to more broadly represent the following seven collective super-ordinate themes as one construct:

- *positively affected sociability,*
- *elevated mood,*
- *developed meaningful interspecies friendship,*
- *increased positive sense of self,*
- *shifted focus from self to other,*
- *explicitly benefited from attachment-related functions,* and
- *conscious of positive shift in attitude.*

Positive perception of wellbeing is associated with positive feelings, behaviors, cognitions, and experiences while negative perception of wellbeing is associated with negative feelings, behaviors, cognitions, and experiences (Gander, Proyer, Ruch, & Wyss, 2013). Increased positive emotions and perception of wellbeing is linked to decreased perception of symptoms of depression and anxiety (Frederickson & Joiner, 2002; Stein & Heimberg, 2004). Research shows that participants in AAA programs report an increase in perceived wellbeing (e.g., Wells, 2009). It seems plausible that experiencing an increased perception of wellbeing is one of the psychological mechanisms of change underlying why participants reported a decrease

in symptoms of depression and/or anxiety.

Positively affected sociability[6]. Sociability is "the extent to which [people] prefer to have social relationships as opposed to being alone" (Mounts, Valentiner, Anderson, & Boswell, 2006). It is associated with psychological wellbeing, increased social relationships, decreased loneliness, depression, anxiety, and helping students successfully transition to college life (Mountset al., 2006). All of the interviewed participants reported that spending time with a therapy dog increased their level of sociability. Emergent themes indicate that the shift in sociability occurred via the following psychological mechanisms:

1. enjoying meeting and talking to new people while walking the dog (e.g., "It was a nice way to meet new people and talk to someone." "I've definitely started talking to more strangers!");
2. changing behavior by getting out of the dorm room more often and interacting with people while walking the dog (e.g., "And I think just having a reason to get out of my room and seeing and meeting other people on campus was really nice.");
3. feeling inspired to join more clubs as a result of meeting more people while walking the dog (e.g., "I've definitely started to join more clubs and get more involved now.");
4. feeling gradually more comfortable with spontaneous social interactions as a result of having more of them while walking the dog (e.g., "When one has a dog,

[6] One of the windows of the Campus Tails office overlooked the quad. I noted in my reflexive journal how excited I was to see participants interacting with other students when they had the dog. The dogs, of course, attracted attention. I noticed lots of smiles when they were spotted on campus. I thought it was a win-win situation because the dog seemed to be having an effect on the community as well as on the participant. Sometimes participants would tell me about talking with other students while they were on their walk with the dog. I noted that they seemed to like the whole social experience of being with the dog and getting attention from other students. I noted feeling encouraged by these events early in the study.

one attracts, especially at a college campus, I think, any number of people. And so, I wasn't really just walking [the dog], I was also interacting with at least eight people each hour. Um, that sometimes also makes me anxious, but it was sort of cool having something to interact about . . . and I had a lot of good conversations with people because of [the dog]. I like having good conversations, even though they don't always come easily to me. That is getting easier now."); and

5. inviting others to join the walk (e.g., "I actually got really close to someone because of [the dog]. We spent a lot of time walking together with her.").

This finding supports other research suggesting that interacting with a therapy dog encourages sociability (e.g., Banks & Banks, 2002; Churchillet al., 1999; Cirulliet al., 2011; Geisler, 2004), and broadens it to a college campus setting.

Elevated mood[7]. All psychotherapeutic and psychopharmacological treatments for depression have a common goal that can be broadly defined as elevating a client's mood. For the purposes of this study, elevated mood is associated with an increase in a wide range of positive emotions such as happiness, calmness, interest, excitement, and motivation. According to Fredrickson (2001, 2002), positive emotions are associated with wellbeing, flourishing, and psychological growth. Furthermore, they alleviate or reverse the effects of negative emotions such as anxiety, sadness, apathy, anger, and discouragement. Moreover, positive emotions increase psychological resilience over time (Fredrickson, 2001).

Six of the seven interviewed participants reported that interacting with a therapy dog elevated their mood. Emergent themes indicate that the elevation in mood occurred via the following psychological mechanisms:

[7] I noted in my reflexive journal that participants were smiling every time they brought the therapy dog back to the office after a session. I also noted that participants talked to the dog as they left the office and said goodbye, and I wondered what they would have said to the dog if I hadn't been in the office.

1. smiling when with the dog (e.g., “She’s silly and she makes me smile.”);
2. playing with the dog (e.g., “It always brightens my mood . . . to play with her and stuff.”);
3. feeling good about having something special to look forward to (e.g., “I’m really looking forward to it even if I’m busy I know that I can carve out an hour of time to do this and it’s really fun.” “And I found that I really…looked forward to the time every week and I really enjoyed it.”);
4. feeling happy when thinking of the dog (e.g., “It makes me happy to know she’s there.” “It makes me happy to know she’s happy.”);
5. feeling happy while spending time with the dog (e.g., “It always makes me happy.” “It was always nice to see [dog] and I was always in a better mood for the rest of the day. My friends would be like, ‘Oh you seem so happy.’” “It definitely made me happy.”);
6. feeling increased motivation for academic tasks after therapy-dog sessions (e.g., “It’s like, ‘Okay, I’ll hang out with Lucy and I’ll get really happy, and then I’ll like do some homework.’”); and
7. self-isolating less frequently as a result of attending sessions with the dog (e.g., “It gives me something to look forward to on [day of the week], which used to be to be a day off classes when I’d just . . . sleep the whole day or watch TV in my room, and not. . . get out.”).

This finding supports other research suggesting that interacting with a therapy dog can improve mood (e.g., Halm, 2008; Kaminski et al., 2002) and decrease isolation and loneliness (e.g., Banks & Banks, 2002; Wells, 2009). It also supports research suggesting that interspecies

play can produce positive emotions (Kaminski et al., 2002; Panksepp, 1998, 2007), and laughter can buffer the effects of stress and produce positive emotions in humans (Kuiper & Martin, 1998).

Developed meaningful interspecies relationship[8]. Having positive relationships is associated with increased perception of wellbeing and improved mental health (e.g., Roffey, 2012). Four of the seven interviewed participants reported that they thought of their therapy dog as a friend and experienced her as a social support. This collective super-ordinate theme underscores the importance of the interspecies relationship. Emergent themes indicate that

1. participants believed that their therapy dog was a friend because they felt a positive connection and nonjudgmental mutual positive regard (e.g. "She's my buddy." "A dog is kind of an immediate friend, and you don't have to worry about what they think." "She has no expectations of me and doesn't judge me. She's just happy to hang out and be there. It's nice." "She never made me feel self-conscious or anything."); and
2. the participant would miss the dog/friend after they stopped meeting (e.g., "I'm definitely going to miss her." "I'm actually going to be able to keep seeing [dog] this summer because I'm going to do some dog sitting . . . I'm glad I get to keep seeing her because I'd miss her.").

This finding supports other research suggesting that having an interspecies friend provides social support and promotes mental health (e.g., Allen et al., 1991; McNicholas &

[8] It seemed clear to me that the participants and dogs were bonding right away. However, since I know that I'm a fan of interspecies relationships, I did my best not to project too much of my biased perspective onto the participant and the dog. It wasn't easy! I really wanted the dyads to be mutually beneficial. My way of bracketing my energy was to try to keep my therapist self out of any conversations. In other words, I offered little in the way of interpretive reflections of feelings.

Collis, 2006; Netting et al., 2013; Serpell, 2006; Wilkes, 2009; Willens, 2013), and broadens it to the college campus setting.

Increased positive sense of self. This collective super-ordinate theme represents three individual super-ordinate themes: increased self-efficacy, increased self-esteem, and increased self-mastery. Self-efficacy, self-esteem, and self-mastery are associated with wellbeing and positive psychology (Costello & Stone, 2012; Duckworth, Steen, & Seligman, 2005; Furr, 2005). Increased self-efficacy (Ehrenberg, Cox, & Koopman, 1991), self-esteem (Battle, 1978), and self-mastery (Marshall & Lang, 1990) are associated with decreased symptoms of depression. Four of the seven interviewed participants reported that they experienced an increased positive sense of self as a result of interacting with a therapy dog. Emergent themes indicate that the increased positive sense of self occurred via the following psychological mechanisms:

1. feeling positive about being reliable (e.g., "It's like having someone rely on you. It's been really nice.");
2. feeling positive about being dependable (e.g., "She also depends on you. I like that I felt that she was waiting for me to come get her on our afternoons.");
3. feeling capable and effective (e.g., "Like when you say, 'Stay here,' like when you get ready to cross the street or something, and you keep her safe.");
4. feeling positive about being caring (e.g., "It feels nice to be able to take care of someone.");
5. feeling wanted (e.g., "I like that she's always happy to see me." "Everyone wants someone they can depend on who is happy to see them when they enter a room, and a dog really provides that.");

6. feeling increased comfort and confidence with dogs (e.g., "Initially, I didn't want to do something stupid. . . but I got more comfortable with [dog] the more I walked her. Now I feel more confident with dogs."); and
7. feeling a global sense of increased self-confidence (e.g., "I think this experience has helped my confidence, *in a weird way*, more than anything.").

This finding supports other research suggesting that interacting with a therapy dog can increase self-efficacy and self-esteem (e.g., Moneymaker & Strimple, 1991; Walsh & Mertin, 1994), and self-mastery (e.g., Friesen, 2010; Jalongo et al., 2004; Paradise, 2007), and broadens it to a college campus setting.

Shifted focus from self to other. According to Mor and Winquist (2002), self-focused attention is often associated with negative affect, depression, and anxiety. However, it can also be associated with decreased negative affect when it follows a positive event and centers on positive aspects of the self. This collective super-ordinate theme underscores the positive effect of the shift in focus from self to other. Four of the seven interviewed participants reported that they experienced a shift in focus away from themselves and toward another as a result of interacting with a therapy dog. Emergent themes indicate that the psychological mechanism underlying the shift was a sense of relief that transformed the participant's internal state when focusing on another (e.g., "It felt nice to think of someone else." "It's sort of a cool way to . . . have it be about someone else. . . because I feel like a lot of the time when we're on campus it's like, 'me, me, me.'" "It's just like having another presence to be with and think about is nice for a change. It takes me out of myself for a while, which feels good."). To the best of my knowledge at the time of this writing, this finding expands the research on AAT and/or AAAs.

Explicitly benefited from attachment-related functions. Attachment-related functions include proximity (the desire to be near another), feeling comforted by another's presence (soothing, sense of safety/security with another), nonverbal emotional support (belonging with another), and nonverbal attunement (feeling felt by another; M. Straus, personal communication, April 2013; Sable, 2000). Six of the seven interviewed participants reported that they benefited from attachment-related functions as a result of interacting with a therapy dog. Emergent themes indicate that benefitting from attachment-related functions occurred via the following psychological mechanisms:

1. feeling soothed by proximity with the dog (e.g., "When we stop walking sometimes she leans against my leg and I like that." "And just having her there with me.");
2. feeling comforted by the dog (e.g., "I felt comforted." "It's been really nice to hang out on the quad with her and hold her and feel really comfortable and grounded. It's really helped me with that." "It's kind of comforting.");
3. feeling a sense of security knowing that the dog was there for them, (e.g., "Campus Tails has been a real safe hold for the semester." "I like knowing that she's there.");
4. feeling a sense of belonging (e.g., "It's been good to have someone that's so reliable, because with a dog, they're always going to be happy to see you. Especially with a dog you build a relationship with, like this." "I'm always happy to see her. Even when I see her from across campus when other people are walking her, it's nice to know she's there and that she knows me." "I love that I

can just be myself around her and not worry about that. She just accepts me, like we belong together, and it's all good.");

5. feeling a sense of emotional support as a result of interacting with the dog (e.g., "She's . . . calmed me down a lot in this stressful time. . . . She was definitely my little rock"); and
6. feeling that the dog was emotionally attuned to them (e.g., "She understands me and knows exactly when I want to chill out and not walk anymore.").

This finding supports other research suggesting that people who interact with a therapy dog may benefit from experiencing attachment-related functions (e.g., Geist, 2011; Zilcha-Mano et al., 2011), and broadens it to a college campus setting.

Conscious of positive shift in attitude. A positive attitude is associated with the perception of wellbeing (Ryff, 1989). One participant reported being conscious of a positive shift in overall attitude as a result of interacting with a therapy dog. Emergent themes indicate that the participant believed that the dog embodied a "carefree attitude," and demonstrated "enjoying life's simple pleasures." The psychological mechanism underlying the shift in attitude was gaining another perspective about life by being with the dog (e.g., "I feel like it helped me take a step back and get another perspective on life. Like you're so swamped in your own stuff then you get to watch this dog enjoy some little pleasures in life and it's like, 'Alright, I should do this, too.' . . . Dogs have this boundless energy, this carefree enthusiasm. It kind of reminds you to approach life in the same way."). To the best of my knowledge at the time of this writing, this finding expands the research on AAT and/or AAAs.

Other super-ordinate themes. In addition to the collective super-ordinate themes that directly increase the perception of wellbeing, two collective super-ordinate themes emphasize the

effect that the intervention had on decreasing symptoms of anxiety, thereby indirectly increasing the perception of wellbeing.

Relieved stress[9]. All of the interviewed participants reported that spending time with a therapy dog relieved psychological stress. Stress relief can be conceptualized as undoing negative emotions and increasing positive emotions (e.g., Frederickson, 2001), thereby indirectly increasing the perception of wellbeing. Emergent themes indicate that stress relief occurred via the following psychological mechanisms:

1. provided distraction from psychological stressors (e.g., "It gave me something to look forward to during the week, and it made the time go much faster." "It gives me a break from thinking about school.");
2. had fun (e.g., "To know that I just get to go out and walk a dog for an hour—it's so fun!");
3. walked outside (e.g., "It's also just important to get outside.");
4. enjoyed playing with dog (e.g., "It's fun to play with her in the snow.");
5. relaxed more often (e.g., "It's something that's just a relaxing break in my day when I don't have to focus on anything other than having fun." "It can be difficult to remind yourself that you need to take time out of your day to relax and take time for yourself. Sometimes I don't get out because I'm just working. So it was really nice to see [dog]."); and
6. provided a nice break (e.g., "I definitely enjoyed it. It's been a nice escape from school." "This is easy stress relief.").

[9] When participants returned to the office smiling, I assumed that they felt good, and that the time with the dog had something to do with that. I was aware that I needed to bracket my assumption and my energy so as not to influence the participant's perception of their experience. I tried to be working at my desk when participants returned the dog so I could avoid excitedly hovering and over-influencing the psychological field.

This finding supports other research suggesting that college students who interact with a therapy dog may experience stress relief (e.g., Adamle et al., 2009; Aiken & Cadmus, 2011; Folse et al., 1994; Lalwani & Tan, 2011; Junge & MacDonald, 2011; Somerville et al., 2008).

Relieved symptoms. One participant reported that interacting with a therapy dog after a panic attack relieved symptoms. Symptom relief can also be conceptualized as undoing negative emotions and increasing positive emotions (such as a sense of relief; e.g., Frederickson, 2001), thereby indirectly increasing the perception of wellbeing. Emergent themes indicate that being with the dog changed the participant's typical pattern of social avoidance, and provided a distraction from symptoms, such as getting pulled into a spiral of negative, circular thinking, that would ordinarily increase anxiety. The psychological mechanism underlying the symptom relief seems to have been behavior change (e.g., "I think that being able to come here after my panic attack . . . helped me get out of my cycle of worrying about having another panic attack because I was walking with [dog] and doing something other than thinking about it—I was thinking about her. . . . It seemed like coming here was a good way for me to do something concrete."). This finding supports other research suggesting that interacting with a therapy dog may decrease symptoms of anxiety (e.g., Bardill & Hutchinson, 1997; Barker & Dawson, 1998; Barker et al., 2005; Barker et al., 2010; Cole et al., 2007; Friedmann & Tsai, 2006; Kaminski at al., 2002; Odendaal, 2000; Wilson, 1997), and lends support to the mission of programs such as Soldier's Best Friend and Patriot Paws Service Dogs that use service dogs to help military veteran's avert or alleviate some of the symptoms of PTSD including panic attacks (http://soldiersbestfriend.org/, http://patriotpaws.org/).

Summary. Quantitative results suggest I can infer that, for the majority of participants, the AAA intervention (a) seems to be associated with decreased symptoms of depression over

time at a gradual rate, (b) seems to be associated with decreased symptoms of anxiety over time at a moderate rate, and (c) seems to be associated with a negative trend in symptoms of both depression and anxiety between research phases, and over time. In particular, the effects on generalized anxiety seem to be the most robust. One explanation for this outcome is that the AAA intervention may have alleviated some aspects of the experience of separation anxiety that may have been part of the constellation of symptoms contributing to the clinical picture of generalized anxiety.

Qualitative results suggest I can infer that the AAA intervention seems to be associated with an increase in the perception of wellbeing. Of the nine collective super-ordinate themes present in participants' narratives, seven are associated with directly increasing the perception of wellbeing (*positively affected sociability, elevated mood, developed meaningful interspecies friendship, increased positive sense of self, shifted focus from self to other, explicitly benefitted from attachment-related functions, conscious of positive shift in attitude*), and two are associated with indirectly increasing the perception of wellbeing (*relieved stress, relieved symptoms*).

Increased perception of wellbeing may be one of the fundamental mechanisms of change underlying participants' reported decrease in symptoms. Interventions used deliberately to increase one's perception of wellbeing are considered to be *positive interventions* and are associated with positive psychology (Gander et al., 2013). Accordingly, the AAA discussed here may be conceptualized as a positive intervention. Increased psychobiological regulation via having attachment needs fulfilled (i.e., feeling soothed by proximity with another who makes one feel emotionally safe and secure, enjoying the sense of belonging with another, feeling nonverbally, emotionally attuned to) may also be one of the fundamental mechanisms of change underlying participants' reported decrease in symptoms. Interventions that are informed by

attachment theory and research and are used to provide attachment-related functions are called attachment-oriented interventions (Obegi & Berant, 2009). The AAA discussed here may also be conceptualized as an attachment-oriented intervention, and the therapy dog may be thought of as belonging to a participant's "hierarchy of attachment figures" (Obegi & Berant, 2009, p. 19).

Initial assessment of Campus Tails. Based on the inferences outlined above, it seems that the Campus Tails Therapy-Dog Pilot Program was successful in fulfilling its mission of helping participants decrease symptoms of depression and/or anxiety by interacting with a therapy dog. The following discussion of Subquestions 1–4 of Question 1 provides further insight into four additional factors regarding the overall success of the program.

Subquestion 1: What attracted them to the program? The group of seven interviewed participants reported six collective super-ordinate themes that offer insight into what attracted them to Campus Tails.

Experiencing symptoms. All seven interviewed participants endorsed having symptoms of depression and/or anxiety and cited that as one of the reasons they were attracted to Campus Tails. Three interviewed participants endorsed having symptoms of depression (e.g., "I feel sad all of the time." "At the beginning of the semester I was feeling pretty depressed." "Sometimes I really struggle with feeling depressed."). Two interviewed participants endorsed having symptoms of anxiety (e.g., "Just the idea of trying something different to help my anxiety level." "I tend to get anxious about the number of things that must be done in college in general."). Two interviewed participants endorsed having symptoms of both depression and anxiety (e.g., "I have a very long history, unfortunately, of anxiety and depression, and I've been feeling depressed.").

Fond of dogs. Six interviewed participants cited being fond of dogs as one of the reasons they were attracted to Campus Tails (e.g., "I know I like dogs." "I love being around dogs."

"I'd really like to get to be with a dog one-on-one and have the be a time when I don't have to do anything else." "I'm a big dog lover.").

Seeking attachment-related functions. Four interviewed participants seemed to be describing that they were seeking attachment-related functions as one of the reasons they were attracted to Campus Tails (e.g., "Animals are like a source of comfort for me." "I've always been around animals my whole life and they've always made me feel better when a lot of things weren't so great." "During high school I know that when things got stressful my dogs were the things I would turn to. I'd like to have a dog in my life again." "I wanted to hold and pet something and a dog is really the only thing that can do that. Regular therapy doesn't do that." "I've definitely been starved for a 'dog fix.'").

Trying new treatment. Three interviewed participants liked the idea of trying a new type of treatment to help their symptoms of depression and/or anxiety (e.g., "The idea of doing it as a kind of therapy appealed to me." "Just the idea of trying something different to help my anxiety level because I found that the talk therapy hadn't worked so well, and medication wasn't really what I wanted to do.").

Wants someone to focus on. One interviewed participant stated that one of the reasons he or she was attracted to Campus Tails was the opportunity to think about someone other than him- or herself (e.g., "It's nice to take some time and think of another creature besides yourself, and spend time with them. I think that's an important part of it. It's nice to forget yourself for a while.").

Needs scheduled stress relief. One interviewed participant cited that one of the reasons he or she was attracted to Campus Tails was needing to have stress relief that would be scheduled as a regular part of the week (e.g., "And have that be part of my weekly schedule as something that

is structured in is good.").

Subquestion 2: Did they report perceived change as a result of participation? In short, the answer to this subquestion is yes. The group of seven interviewed participants collectively reported experiencing nine ways in which they perceived psychological change while participating in Campus Tails. In the integrated discussion of Hypotheses 1 and 2, and Question 1 (see above in this chapter), I provided a detailed account of those collective super-ordinate themes. Please refer back to that section for a broader description of the specific types of perceived change participants reported.

Subquestion 3: Where they satisfied enough with the program to recommend it to a friend? The group of seven interviewed participants reported seven collective super-ordinate themes that indicate their satisfaction for Campus Tails.

Would recommend program. All seven of the interviewed participants would recommend Campus Tails to a friend (e.g., "I actually did recommend it to a friend." "I talk about it to my friends and tell them how great it is." "In fact, my friend recommended it to *me*, and that's how *I* found out about it. So, I'd recommend it to someone else, too." "Definitely! Like I said, I think having a furry companion is really nice, and it's something I think a lot of people could benefit from." "When I've been out walking [dog], I've told a few people about the program. I think one person might have tried to participate.").

Expressed positive feedback. All seven interviewed participants expressed positive feedback for Campus Tails (e.g., "I was originally very skeptical, but it's definitely been more effective than I thought it would be. I really didn't think it was going to help in a concrete way, and I really feel like it did. I enjoyed my time with [dog], and I was also able to reflect on that and I was able to say, 'This helped me and it's okay that it helped me and it's not shameful to

need help or anything like that.' I wasn't expecting to get *that* out of this experience." "I hope that the program continues and gets bigger and is offered all of the time. I think that's really exciting. I'm a huge proponent of it. It's been wonderful." "Are you doing this next semester? I'd love to sign up if it's going on next semester." "It's been really great for me. And even that day it was stormy and we didn't go out and I just snuggled with her and took a nap with her on her bed, that was really nice for me." "I wish I could have done this longer, like all four years!").

Explicitly expressed admiration for dog. All seven interviewed participants explicitly expressed admiration for their therapy dog (e.g., "I'm a big [dog] fan! Yeah, I'll send pictures of her to my friends while we're out . . . Yeah, I really like her. She's adorable." "She's great and so amazing and like calm and loving. . . . And she's just content to like be there for you." "I really like spending time with her, and she's such a good dog. She really is." "She's funny!" "I absolutely love her and I've loved spending time with her." "I really like [dog]. She's become someone I really look forward to seeing.").

Benefitted from regular session time. Four interviewed participants reported benefitting from having a regularly scheduled session time with the therapy dog (e.g., "I feel like it's nice for me to have this be scheduled and have it just be something that I do every week." "It's nice to have the weekly routine of seeing [dog]." "I finish classes on Thursday, then I come here. It's nice to have that be something to look forward to.").

Explicitly valued interspecies connection. Four interviewed participants explicitly valued the interspecies connection they felt with the dog (e.g., "A dog is kind of an immediate friend. And you don't have to worry about what they think." "Like she has no expectations of me and doesn't judge me." "She never made me feel self-conscious or anything. It was nice.").

Expressed gratitude for program. Two interviewed participants expressed gratitude for the program (e.g., "Thank you so much for having this!" "I would definitely say it's helped. I'm glad I got to do it. Thanks.").

Explicitly valued attachment-related functions. Two interviewed participants explicitly valued the attachment-related functions they experienced (e.g., "I'm attached to her." "She understands me and knows exactly when I want to chill-out and not walk anymore. She just sort of lies down. . . . It feels good." "I love that I can just be myself around her and not worry about that. She just accepts me, like we belong together and it's all good." "Definitely some attachment here!").

Subquestion 4: Did I reach students who had symptoms of depression and/or anxiety who did not want to go to counseling? Two of the criteria for program inclusion stated that participants (a) needed to have a baseline T-score at the beginning of phase A indicating a minimum of moderate distress on at least one of the three subscales, and (b) could not be engaged in counseling. Quantitative results show that out of 14 participants, 12 met inclusion criteria based on their Depression subscale T-score; 12 met inclusion criteria based on their Generalized Anxiety subscale T-score; and 13 met inclusion criteria based on their Social Anxiety subscale T-score. Two of the 14 participants met inclusion criteria based on endorsing symptoms of anxiety exclusively; 12 met inclusion criteria based on endorsing symptoms of both depression and anxiety.

Qualitative results show that all seven interviewed participants endorsed having symptoms of anxiety and/or depression. Three described being aware of symptoms of depression (e.g., "I feel sad all of the time." "At the beginning of the semester I was feeling pretty depressed." "Sometimes I really struggle with feeling depressed."). Two described being

aware of symptoms of anxiety (e.g., "Just the idea of trying something different to help my anxiety level." "I tend to get anxious about the number of things that must be done in college in general."). Two described being aware of having symptoms of depression and symptoms of anxiety (e.g., "I have a very long history, unfortunately, of anxiety and depression, and I've been feeling depressed. . . . [M]y stress level is so high." "I felt like I needed something to feel like being with my dog at home and getting comfort when I'm feeling stressed or down.").

The group of seven interviewed participants reported six collective super-ordinate themes indicating their reasons for not going to counseling:

Doesn't want counseling now. Three interviewed participants reported that, although they were not opposed to the idea of counseling in general, they did not want to be in counseling at that time (e.g., "Going to counseling is not something I feel like I want to do right now." "I'm not in counseling right now. I have been on and off, but I'm kind of taking a break for a while." "I originally thought about going to counseling at the beginning of the semester, but I decided not to for now, which turned out fine.").

Tried other alternative to counseling already. Two interviewed participants reported that they had already tried other alternatives to counseling for symptom relief (e.g., "I've tried exercise, but like I don't know that I would motivate myself like to do yoga or any of the other things that people to for stress relief and anxiety relief." "I usually try to get involved in something like exercise, or volunteering, or something, and I thought this was a good way to do something different.").

Seeking attachment-related functions from dog. Two interviewed participants described seeking attachment-related functions from a dog as opposed to wanting talk therapy (e.g., "I wanted to hold and pet something and a dog is really the only thing that can do that. Regular

therapy doesn't do that." "You can have all of the counseling you want, but it's nice having connection with animals, too. . . . Everyone wants someone they can depend on who is happy to see them when they enter a room, and a dog really provides that.").

Talk therapy didn't work. One interviewed participant reported having little success with past counseling (e.g., "I found that the talk therapy hadn't worked so well.").

Not willing to try medication. One interviewed participant reported not being willing to try medication (e.g., "Medication wasn't really what I wanted to do.").

Couldn't get into counseling when I wanted. One interviewed participant reported not being able to get into counseling when he or she wanted, so opted for an alternative (e.g., "I haven't had much success with counseling just getting an appointment that works for me, and coming here seemed like a good way to deal with things.").

These findings indicate that Campus Tails was successful in fulfilling its mission of reaching students who had symptoms of depression and/or anxiety but did not want to go to counseling. In addition, these findings support other research suggesting that although many college students endorse having symptoms of depression and/or anxiety that are significant enough to interfere with daily functioning (e,g., Eisler, 2011), they may be disinclined to seek mental health counseling when it is indicated (e.g., Eisenberg et al., 2009).

Summary: Potential implications for clinical practice. Integrated results indicate that the Campus Tails Therapy-Dog Pilot Program attracted students who had symptoms of depression and/or anxiety who did not want to go to counseling. Inferences indicate that participation in the program is associated with a decrease in those symptoms. Qualitative results indicate that participants were aware of the psychological changes that occurred via interacting with a therapy dog, and that they were satisfied with the program. Fondness of dogs, trying an alternative to

counseling, and wanting someone else to focus their attention on are among the reasons participants expressed for being attracted to the program. In addition, and most perhaps most importantly, four of the seven interviewed participants described seeking attachment-related functions from a dog to soothe their symptoms as opposed to wanting traditional counseling. This finding makes sense given that conditions of chronic or acute stress, such as those typically encountered on college campuses, have the potential to activate the attachment system (Sable, 2000). It seems plausible that Campus Tails may have met a previously unmet need for alternative attachment-oriented mental health services on the Bowdoin College campus. This research supports further consideration of an ongoing on-campus therapy-dog program.

Discussion of Question 2: Is an on-campus therapy-dog program feasible at Bowdoin College? After receiving permission to start my research, I needed to recruit therapy dogs and participants—in that order. Although I take up the issue of recruiting therapy dogs in Subquestion 2, I discuss it here before Subquestion 1 because it occurred first, and because recruiting participants is irrelevant if there are no dogs for the therapy-dog program. I provided details about the process of recruiting dogs and participants in Chapter 5. Here, I focus on the feasibility of starting and operating an on-campus therapy-dog program with regard to each subquestion.

Subquestion 2: What did I do to recruit therapy dogs? How much time and energy went into it? In addition to being an on-campus therapy-dog program, Campus Tails was a community-based program—all of the human and canine resources came from the Bowdoin College community. Recruiting dogs took considerable time and energy. As I noted in Chapter 5, I began dog-recruiting efforts on campus at the beginning of the fall semester, and I was glad to have a few faculty and staff members immediately express interest in having their dog

participate in the program. Dog owners stated that they liked the idea that their dog would be entertained by interacting with students during the day while they were at work. Though early leads on prospective recruits fell through, by the end of the semester two faculty members had committed to have their dogs participate in the program. By the beginning of the spring semester, those dogs were newly registered as therapy dogs, and were ready to meet with students.

Attaining on-campus, community-based resources paid off. It increased Campus Tails' feasibility, further enriched the experience of being in the program for at least a few participants, and produced some community buy-in. For example, dog owners were at work on campus in the event that I needed to reach them immediately in case of emergency, and arranging drop-off and pick-up times was easy. In three cases that I am aware of, participants knew the faculty that their therapy dog belonged to and chose to disclose that they were matched with the dog in the program. In each case, participants strengthened community connections with the faculty member (e.g., by providing paid dog-sitting services), and, in so doing, increased program feasibility, and community linkage by becoming a resource for the faculty and dog. In addition, the faculty whose dogs were in Campus Tails supported the program by telling other faculty about it, hanging advertisement posters in their office, and referring students.

At the end of this research project, those faculty expressed interest in being part of a continuing or adapted version of Campus Tails. Furthermore, I have heard that other Bowdoin faculty and/or staff may be interested in having their dog be a part of an on-campus therapy-dog program, which leads me to believe that recruiting enough therapy dogs would take less time and energy in an ongoing program, now that a precedent has been established. The bulk of all of the work related to the dogs occurred prior to, and during, program start-up. Once the program was

operating, it took much less time and energy to maintain it. Program maintenance regarding dogs included

- arranging drop-off and pick-up times with each dog's owner;
- ongoing monitoring of safety for participants and dogs by soliciting comments and/or concerns from participants after each session;
- keeping the Campus Tails office clean;
- keeping supplies (e.g., dog treats, waste bags, water, leashes, toys, dog bed) clean and available; and
- keeping session scheduling current.

All dog-related components of program maintenance are easily managed and feasible.

Subquestion 1: What did I do to recruit participants? How much time and energy went into it? As I noted in Chapter 5, I began recruiting students for participation in Campus Tails on the first day of the spring semester and began matching enrolled participants with dogs two weeks later. I fine-tuned my advertising campaign by learning from the trial-and-error approach, and by getting some campus-smart guidance from Dr. Hershberger. Now that my research project is finished, it is clear to me that the Campus Tails' participants and therapy dogs themselves are the best—and least time consuming—sources of advertising. Once the dogs were out-and-about on campus, the program advertised itself. I suspect that maintaining enough participants would take little time and energy in an ongoing therapy-dog program. All of the interviewed participants stated that they would recommend the program to a friend; all of them also reported talking to several people each time they walked the dog on campus. Again, the bulk of the time and energy needed to attract participants occurred prior to, and during, start-up. Once the program was operating, it took much less time and energy to maintain it. Program

maintenance regarding participants included ongoing monitoring of safety for participants and dogs by soliciting comments and/or concerns from participants after each session, and keeping session scheduling current.

All participant-related components of program maintenance are easily managed and feasible.

Summary. Bowdoin College stakeholders, such as Counseling Services and Student Affairs, will be interested in knowing that the Campus Tails Therapy-Dog Pilot Program seems to have achieved its clinical goal of helping participants decrease symptoms of depression and/or anxiety. In addition, the program provided participants with an experience that they found enjoyable and satisfying. Results discussed here indicate that further consideration of an ongoing on-campus therapy-dog program as an alternative or adjunct to current mental health services is justified. Such a program may provide students with an additional option for reducing distressing symptoms, increasing the perception of wellbeing, and meeting some of their attachment needs at a time when the demand for services is high and growing. In addition, it may appeal to some students who are disinclined to engage in traditional counseling.

The two major tasks of program startup were recruiting therapy dogs and participants. Recruiting therapy dogs took the most time and energy. However, now that a precedent has been established[10] and some members of the Bowdoin College community know about Campus Tails, recruiting efforts should be less labor-intensive. Potential referral sources for student participants include Counseling Services, Health Services, Student Affairs, the Center for Learning and Teaching, the athletics department, and the staff of Residential Life. Maintaining program operations once Campus Tails was established took little time and energy. Working with community-based resources increased feasibility and richness of the program.

[10] The program description (Appendix B), the Informed Consent Form (Appendix C), and logic models for both part-time (Appendix G) and full-time (Appendix H) programs may provide useful information for starting future programs.

Limitations of the Research

There are several limitations with this research. Interpretation of these results should take into account the following:

1. This research produced inferences based on a quantitative analysis of the effect that interacting with a therapy dog had on a group of 14 Bowdoin College students who endorsed having symptoms of depression and/or anxiety as measured by the Depression, Generalized Anxiety, and/or Social Anxiety subscales of the CCAPS-34. Due to the small sample size, findings may not be replicable with or generalizable to other college populations or other settings.
2. This research produced inferences based on a qualitative analysis of the psychological themes that a group of seven participants described in individual narrative accounts of their involvement in Campus Tails. The sample size was small, and themes discussed here may not apply to persons other than those in this research. Therefore, findings may not be replicable with or generalizable to other college populations or other settings.
3. Qualitative findings emerging from the semi-structured exit interviews depended on each participant's ability to self-disclose in a reliable manner. The genuineness of my findings have been affected by the degree of openness expressed by each participant. It is possible that making an audio recording of the interview may have affected a participant's willingness to disclose personal details of his or her experience.
4. I did not account for other psychosocial factors influencing participants' lives (e.g., academic stressors/achievements, interpersonal problems or increases social support, etc.) or the effects of change as it naturally occurs as a consequence of the passage of time (Kratochwill et al., 2010); external factors that may have contributed to the results discussed here. Confidence in my findings would have increased with more control over

other variables.

5. My relationship with each participant was not accounted for in this project. I interacted with participants during the screening process, during the initial training sessions, briefly when he or she came to pick up and drop off their therapy dog each session, and at the end of their participation in Campus Tails for an exit interview. It is possible that our relationship may have had an effect on their symptoms and, consequently, has influenced my research findings. In addition, participants' responses to quantitative measures and qualitative questions may have been informed by an implicit perception that I expected them to have certain (positive) experiences with their therapy dog.
6. Findings may have been affected by a confirmation bias on my part, whereby my efforts to bracket my eagerness to prove my beliefs about the positive effects of interacting with a therapy dog were insufficient.
7. The two-condition, A–B, single-case design I used in this research is considered to be a quasi-experimental design. In addition, I had no control group in this research project. In order to strengthen the validity of the inferences discussed here, I could have used a more stringent single-case design that included a reversal phase.

Conclusions

Although more students than ever before are in treatment for psychiatric disorders such as depression and anxiety at college counseling centers across the country (Benton, Robertson, Tseng, Newton, & Benton, 2003; Eiser, 2011; Harper & Peterson, 2005; Kadison & DiGeronimo, 2004; Kitzrow, 2003), many who suffer from symptoms are disinclined to engage in counseling (Eisberg et al., 2009). Those who are interested in utilizing alternatives to traditional counseling services may benefit from interacting regularly with a therapy dog. In order to determine whether or not animal-assisted activities (AAAs) with a therapy dog may

provide effective alternatives to counseling for some college students, more quantitative (e.g., Granger & Kogan, 2006; Kruger et al., 2004) and qualitative research is needed. This concurrent mixed-methods study on a therapy-dog pilot program for a college campus fills a gap in the literature on the benefits of AAT and AAAs by focusing on college students—a group that is largely underrepresented in the literature—and by using an objective measure in order to increase the validity of findings (Mertens, 2010). To the best of my knowledge at the time of this writing, this study is the first to use the CCAPS-34 to measure the effects of AAAs on college students.

My findings support other research suggesting that interacting with a therapy dog may

1. decrease symptoms of depression (e.g., Banks & Banks, 2002; Churchill et al., 1999; Cirulli et al, 2011; Filan & Llewellyn-Jones, 2006; Folse et al., 1994; Geisler, 2004; Halm, 2008; Kaminski et al, 2002; Moneymaker & Strimple, 1991; Souter & Miller, 2007; Walsh & Mertin, 1994; Wells, 2009);
2. decrease symptoms of anxiety (e.g., Bardill & Hutchinson, 1997; Barker & Dawson, 1998; Barker et al., 2005; Barker et al., 2010; Cole et al., 2007; Friedmann & Tsai, 2006; Kaminski at al., 2002; Odendaal, 2000; Wilson, 1997);
3. directly increase the perception of wellbeing via psychological mechanisms such as increasing sociability (e.g., Banks & Banks, 2002; Churchillet al., 1999; Cirulliet al., 2011; Geisler, 2004), improving mood (e.g., Halm, 2008; Kaminski et al., 2002), increasing the perception of social support (e.g., Allen et al., 1991; McNicholas & Collis, 2006; Netting et al., 2013; Serpell, 2006; Wilkes, 2009; Willens, 2013), increasing self-efficacy and self-esteem (e.g., Moneymaker &

Strimple, 1991; Walsh & Mertin, 1994), and increasing self-mastery (e.g., Friesen, 2010; Jalongo et al., 2004; Paradise, 2007);

4. provide attachment-related functions (e.g., Geist, 2011; Zilcha-Mano et al., 2011); and
5. provide stress relief for college students (e.g., Adamle et al., 2009; Aiken & Cadmus, 2011; Folse et al., 1994; Lalwani & Tan, 2011; Junge & MacDonald, 2011; Somerville et al., 2008), thereby indirectly increasing the perception of wellbeing.

In addition, my findings suggest that interacting with a therapy dog may contribute to a positive, conscious shift in attitude, and may be associated with a positive shift in mental focus from self to other. Finally, my findings lend support to the mission of programs utilizing service dogs to help alleviate the symptoms of panic (e.g., Soldier's Best Friend, Patriot Paws Service Dogs). However, I must acknowledge that since I did not account for other psychosocial factors influencing participants' lives, it is not possible to know if the AAA intervention was responsible for all or part of the findings discussed here. Nonetheless, these results do provide persuasive and motivational value to further investigate the utility of AAAs on a college campus.

For all of the positive psychological effects that AAAs may offer, I must also acknowledge that interacting with a therapy dog has limits as a psychotherapeutic intervention. For example, dogs are not known to be great conversationists. Therefore, AAAs with a therapy dog are a poor primary choice for working with clients would benefit from a talk-therapy approach to treatment (e.g., solution-focused, narrative, existential, cognitive, behavioral, or relational therapies). As always, it is important that the intervention is a good match for the client's clinical presentation and preferences for treatment, and that the human therapist uses

good clinical judgment in creating a treatment plan that includes AAAs as an adjunct or a primary intervention.

Directions for Future Research

Several directions for future research come to mind as I reach this final stage of my project and begin to imagine what might come next. Those interested in continuing to mine some of the rich veins that have come to light in this study might consider the following ideas.

1. From a quantitative approach, it would be interesting to conduct a between-group comparison examining the effects of conditions involving AAA/no AAA on symptoms of depression and/or anxiety. The research design could include the Depression, Generalized Anxiety, and Social Anxiety subscales from the CCAPS-34 as objective measures. The researcher might design a two-condition study comparing the effects of interacting with a therapy dog to being in counseling; or a four-condition study comparing the effects of interacting with a therapy dog to being in counseling, and comparing the effects of being on a waitlist for a therapy dog compared to being on a waitlist for counseling.
2. From a qualitative approach, it would be interesting to explore questions directed at understanding students' motivation for wanting to interact regularly with a therapy dog. The research design could include semi-structured interviews and IPA. The researcher might investigate
    - students' history with dogs, and whether or not dogs have been attachment figures for them;
    - if they seem to be seeking attachment-related functions from a dog;
    - what their dominant attachment style/classification is; and
    - if they have emotionally close relationships with humans.

3. From a mixed-methods approach, it would be interesting to conduct a two-condition, three-condition, or four-condition between-group comparison examining the effects of on-campus alternatives to counseling (e.g., yoga, group meditation classes, regular exercise, interacting with a therapy dog) on students' symptoms of depression and/or anxiety. The research design could include the Depression, Generalized Anxiety, and Social Anxiety subscales from the CCAPS-34 as objective measures, and semi-structured interviews and IPA. The researcher might investigate the quantitative differences in effects on symptoms between conditions, and the qualitative differences in emergent and super-ordinate themes between groups.
4. Also from a mixed-methods approach, it would be interesting to conduct a two-condition between-group comparison examining the effects of counseling alone to counseling combined with adjunctive therapy-dog sessions. The design could include the Depression, Generalized Anxiety, and Social Anxiety subscales from the CCAPS-34 as objective measures, and semi-structured interviews and IPA. The researcher might investigate the quantitative differences in effects on symptoms between conditions, and the qualitative differences in emergent and super-ordinate themes between groups.

Summary. There remain many interesting directions for future research on AAAs using therapy dogs with college students. Quantitative, qualitative, and mixed-methods approaches each have unique characteristics to offer researchers considering studying this rich interspecies field and contributing to the growing body of literature on the many psychological benefits of the human-dog bond.

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Appendix A: Recruitment Advertisements

(see next page)

Are you feeling more down or anxious lately? Would you like to participate in research on the psychological effects of interacting with a therapy dog?

 [11]

If so, you are invited to go through a 30-minute screening process to determine your eligibility to participate in ***Campus Tails Therapy-Dog Pilot Program***. During that time, I'll tell you about the project, ask you a few questions, and you'll complete a brief questionnaire. **PARTICIPATION IS VOLUNTARY**. All data are confidential and will be used for research purposes only. Your name will not be connected to data sources.

FMI or to schedule screening contact

Maureen Sanford at [email address omitted for privacy]**.**

This research is for my doctoral dissertation in clinical psychology. It is supervised by Martha Straus, PhD, of Antioch University New England, and Bernie Hershberger, PhD, of Bowdoin Counseling Services.

[11] Photograph by Maureen Sanford.

Campus Tails

Therapy-Dog Pilot Program

is looking for volunteer s to participate in research on the psychological effects of interacting with a therapy dog

Lucy

Emma

FMI and to learn about participant eligibility contact

Maureen Sanford at [email removed for privacy]

or **xxx-xxx-xxxx** (call or text)

12

[12] Photographs by Maureen Sanford.

Appendix B: Description of the Campus Tails Program

PROGRAM IMPLEMENTATION

The first 25 students who meet inclusion/exclusion criteria will be invited to enroll in Campus Tails on a first-come, first-served basis. Remaining spaces will be filled in consecutive order based on student eligibility. As a participant, you will be invited to spend approximately 45 minutes each week during the spring semester interacting with a therapy dog. Matching you with a dog will be based on scheduling availability and, whenever possible, your preferences. You will be asked to commit to participating in the project for a minimum of eight weeks. However, you may withdraw your participation at any point without penalty. After each session with a therapy dog, you will be asked to complete a computerized 34-item questionnaire. Completing the questionnaire will take approximately 2–3 minutes of your time. When the project terminates at the end of the semester, or upon your earlier voluntary termination, you will be asked to meet with the researcher for a brief exit interview. The time needed to complete the interview will depend upon the level of detail you provide in your responses. In most cases, it will take approximately 30 minutes. With your permission, the interview will be audio recorded for future transcription.

INTRODUCTORY TRAINING SESSIONS

Participants will meet with me and the dog they will be interacting with for a minimum of one and up to three 45-minute introductory training sessions. The training sessions will provide you with basic instructions on proper dog-handling techniques. During the session(s), you will learn several important skills. For example, you will learn:

- how to interact with the dog using common voice commands (e.g., “sit” “stay” “come,” etc.) and hand signals

- the proper procedure for walking the dog (i.e., dog on the left, loose leash, use both voice and hand commands, stop before crossing the street)
- the fundamentals of positive reinforcement and reward-based dog training, including how to intermittently reward the dog's good behavior with small treats so as not to overfeed him or her
- how to pick up dog waste without making a mess

After you complete the introductory training and feel comfortable engaging with the dog, you will be eligible to spend one-on-one time with him or her. If you already have good dog-handling skills, you may need only one introductory training session. If you have little prior experience, you may need more sessions in order to practice and gain proficiency.

ONE-ON-ONE TIME

Participants will have a scheduled 45-minute recurring weekly meeting time with a dog. During that time, you may interact with him or her in a variety of ways. For example, you may take the dog for a walk or jog on campus, hang out with him or her in the office, or sit outside together. Activity options will be available based on the dog's temperament and daily energy level, and the weather. You must agree to keep the dog on a leash when you are outside. You must agree to be available by cell phone while you are with the dog, and must agree to call me immediately at 289-0466 if a dog-related problem arises. I will have treats and plastic bags for dog waste (just in case) in the office for you to take when you are out with a dog. And, yes, you must agree to pick up after the dog as necessary.

TERMINATION AND EXIT INTERVIEW

Campus Tails will conclude at the end of the 2013 spring semester. At that time, I will ask you to complete a brief exit interview. If you choose to terminate your participation before the end of the semester, I will ask you to complete the exit interview at that time.

Appendix C: Informed Consent Form

Campus Tails Therapy-Dog Pilot Program and Feasibility Study

I am inviting you to participate in a research project. However, before you consent to being a volunteer, I would like you to read the following and ask as many questions as necessary to be sure that you understand what your participation will involve.

RESEARCHER AND QUESTIONS ABOUT THE RESEARCH
Maureen Sanford, MS, MA, is a doctoral student in clinical psychology at Antioch University New England. She is conducting this research at Bowdoin College for her dissertation. The project is being supervised by Martha Straus, PhD, of Antioch University New England, and by Bernie Hershberger, PhD, of Bowdoin College Counseling Services.

PURPOSE OF THE RESEARCH
The purpose of the research is to (a) determine if interacting regularly with a therapy dog reduces symptoms of depression and anxiety in college students, (b) gain an understanding of participant's experiences of their involvement in a therapy dog program, and (c) determine whether or not a therapy dog program is feasible for Bowdoin College and is worthy of further development.

DURATION OF PARTICIPATION, ELIGIBILITY, NUMBER OF PARTICIPANTS
Campus Tails will operate on the Bowdoin College campus for the duration of the spring semester 2013. **Participation in this research is voluntary. If you choose to be involved in this research project, I ask that you commit to participating for a minimum of eight weeks so that I may collect meaningful data. However, you have the right to withdraw your participation without penalty at any time until the completion of the project at the end of the spring semester.** Participation eligibility is determined by a screening process, and is based on expressed kinship with dogs and psychological factors. Approximately 25 participants will be eligible to be involved in the research.

PROCEDURES TO BE FOLLOWED DURING THE RESEARCH
If you would like to participate in this research project, I invite you to **complete the initial screening process to determine enrollment eligibility.** The screening process, which will take approximately 30 minutes, consists of completing a brief verbal interview and a computerized 34-item questionnaire. Examples of interview questions are: "Do you like dogs," and "Are you in therapy at Bowdoin Counseling Services or elsewhere?" Examples of questionnaire questions are: "I feel tense," "I am not able to concentrate as well as usual." I will process screening materials daily and will contact students regarding project eligibility via email. **Enrollment in Campus Tails is based on the first-come, first-served principle.** Participants will be invited to spend approximately 45 minutes each week during the spring semester interacting with a therapy dog. They will be asked to commit to participating in the program for a minimum of eight weeks. After each session with a therapy dog, they will be asked to fill out the same 34-item questionnaire. Completing the questionnaire will take approximately 2–3 minutes of your time.

When the project terminates at the end of the semester, or upon your earlier voluntary termination, participants will be asked to meet with the researcher for a brief exit interview. The time needed to complete the interview will depend upon the level of detail you provide in your responses. In most cases, it will take approximately 30 minutes. With each participant's permission, the interview will be audio recorded for future transcription.

POTENTIAL RISKS OF PARTICIPATION

The dogs in this project have passed appropriate temperament testing and are certified as therapy dogs. In addition, all participants will be instructed on proper dog-handling techniques. Although the physical risks associated with participation are minimal, you should be aware that a dog's behavior is not always predictable. It is possible that you may be physically injured as a result of interacting with a dog. For example, you could fall, get scratched, or even get bitten when playing. The psychological risks associated with participation are also minimal. However, it is possible that you could experience negative feelings as a result of your participation in Campus Tails. For example, you may miss a dog in your life and feel sad, or you may become attached to the dog you are interacting with and miss him or her when the project is over. In the event that you are physically injured or feel emotional distress, I will do my best to address the issue and I will make referrals to on-campus health or mental health providers who can help you.

POTENTIAL BENEFITS OF PARTICIPATION

It is possible that you will experience significant psychological benefits as a result of participating in this project. Research indicates that interacting with a therapy dog decreases some of the symptoms associated with poor mental health and increases the experience of wellbeing in people of all ages. In addition, you may have some fun! However, I cannot guarantee that you will experience psychological benefits or have fun.

ALTERNATIVES TO THIS RESEARCH

If you choose to participate in this research, there is no alternative procedure for participating other that what is described here.

CONFIDENTIALITY

You have a right to privacy. All documented information identifying you will remain confidential. Your questionnaires and audio recordings will be coded with numbers, and only the researcher will have access to your name. No identifying information will appear on any documents. Any information obtained in connection with this research that can be identified with you will remain confidential and will not be disclosed without your permission or as required by law. Materials associated with the research will be stored in a locked drawer. As suggested by the American Psychological Association, they will be maintained for five years; at the end of that time, they will be destroyed. The findings from this research may be published in a dissertation, published in a scientific journal, or presented at a psychological meeting as long as you cannot reasonably be identified in it. **There are limits to the confidentiality promised in this study.** While your documents will be kept confidential, your identity as a participant in Campus Tails is not likely to be confidential since you will be seen on campus interacting with a therapy dog. In addition, if the researcher has reason to believe that you are at risk of harming yourself or others, appropriate authorities will be notified.

COMPENSATION FOR PARTICIPATION
There is no compensation for participating in this research. However, I believe that the process will be enjoyable and rewarding for you.

PARTICIPATION RIGHTS AND RESEARCH WITHDRAWAL
Your participation in this research is voluntary. You may refuse to participate in some aspects of the project or refuse to answer any questions you do not want to answer. Though I ask you to commit to participating in the project for a minimum of eight weeks, you have the right to withdraw from participation without penalty at any time until the completion of the project at the end of the spring semester. If you decide to withdraw, please contact me to let me know of your decision. If you do not attend your scheduled sessions for two consecutive weeks without contacting me, I will assume that you have voluntarily withdrawn from the project.

DEBRIEFING
The findings of this research will be available to all participants. If you would like to receive a summary of the findings, please write your name and the email or postal address in the space provided below and I will send them to you when they are available.

QUESTIONS
If you have any questions about the project that are not answered here, I would be happy to give you more information now. If you think of questions later, you can contact me, **Maureen Sanford, by email at [email address omitted for privacy] or by calling me at xxx-xxx-xxxx.** If I am not able to answer your questions satisfactorily, you may contact either Dr. Straus at mstraus@antioch.edu or Dr. Hershberger at bhershbe@bowdoin.edu.

PARTICIPANT'S RIGHTS

Researcher: Maureen Sanford

Research Title: Campus Tails: An On-Campus Therapy-Dog Pilot Program and Feasibility Study

- I have read and discussed the description of this researcher with the researcher. I have had the opportunity to ask questions about the purposes and procedures regarding this study.
- My participation in this study is voluntary. I may refuse to participate or withdraw from participation at any time without penalty.
- The researcher may withdraw me from the research at her professional discretion.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue to participate, the investigator will provide this information to me.
- Any information derived from the research project that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- If at any time I have any questions regarding the research or my participation, I can contact the investigator, who will answer my questions. The investigator's phone number is xxx-xxx-xxxx.
- If at any time I have comments of concerns regarding the conduct of the research or questions about my rights as a research participant, I should contact the Bowdoin College Institutional Review Board (IRB) Chair Scott Sehon at 207-725-3753. Or, I write to the IRB in care of Professor Scott Sehon, Department of Philosophy, 8400 College Station, Bowdoin College, Brunswick, ME 04011. If Professor Sehon is not available, I should contact the IRB Administrator, Jean Harrison, at 207-725-3217 or write her at Jean Harrison, Academic Department Coordinator, 8400 College Station, Bowdoin College, Brunswick, ME 04011. Both Professor Sehon and Mrs. Harrison can be reached at IRB@bowdoin.edu. You may also contact the Antioch University New England IRB Chair, Katherine Clarke, with comments or concerns by emailing her at kclarke@antioch.edu.
- I should receive a copy of the Informed Consent form and this Participant's Rights form.
- I consent to being audio taped during the exit interview of this study ( ). I do not consent to being audio taped during the exit interview of this study ( ).
- The written and audio materials will be viewed only by the researcher and members of the research team.
- My signature below means that I agree to participate in this study.

Participant's Signature: _____ Date: ____/____/_____

Name: _____

RESEARCHER'S VERIFICATION OF EXPLANATION

I certify that I have carefully explained the purpose and nature of this research to _____ (participant's name). He/She has had the opportunity to discuss it with me in detail. I have answered all of his/her questions and he/she provided the affirmative agreement to participate in this research.

Researcher's Signature: _____ Date:____/____/_____

Appendix D: Semi-Structured Interview Protocol for Screening Potential Participants

1. Are you at least eighteen years old?
2. Please tell me about your interest in Campus Tails.
3. Do you like dogs?
4. Are you comfortable interacting with them?
5. Are you allergic to dogs?
6. Have you ever intentionally hurt an animal?
7. Are you in therapy at Bowdoin Counseling Services or anywhere else?
8. Do you sometimes think that you might be depressed?
9. Do you have suicidal thoughts or plans?
10. Do you frequently feel anxious?
11. Do you use antidepressant or anxiolytic medications?
12. Do you suffer from panic attacks?
13. Do you have an eating disorder?
14. Do you have any questions about the project that I haven't addressed so far?

Appendix E: Semi-structured Exit Interview Protocol

1. What attracted you to Campus Tails?
2. What has spending time with [name of dog] been like for you?
3. How do you feel about [dog's name]?
4. What has it meant for you to know that you will see [name of dog] every week?
5. Has spending time with [name of dog] changed your life in any way? How?
6. How do you think things would be different if you didn't participate in Campus Tails?
7. Has the experience been similar to what you thought it would be?
8. Are you feeling less depressed/anxious than you were at the start of the semester?
9. Do you think spending time with [name of dog] has had anything to do with that?
10. Would you recommend Campus Tails to a Friend?
11. Is there anything you wish were different about the program?
12. Is there anything you would like to add before we say goodbye?

Thank you for being part of Campus Tails. Seeing this program develop from an idea to a real project has been a dream come true for me. I could not have done it without you!

Appendix F: Informed Consent Form

INFORMED CONSENT FOR DOG OWNERS

Campus Tails Therapy-Dog Pilot Program and Feasibility Study

I am inviting you to have your dog participate in a research project. However, before you consent to volunteering your dog, I would like you to read the following, and ask as many questions as necessary to be sure that you understand what your dog's participation will involve.

RESEARCHER AND QUESTIONS ABOUT THE RESEARCH
Maureen Sanford, MS, MA, is a doctoral student in clinical psychology at Antioch University New England. She is conducting this research at Bowdoin College for her dissertation. The project is being supervised by Martha Straus, PhD, of Antioch University New England, and by Bernie Hershberger, PhD, of Bowdoin College Counseling Services.

PURPOSE OF THE RESEARCH
The purpose of the research is to (a) determine if interacting regularly with a therapy dog reduces symptoms of depression and anxiety in college students, (b) gain an understanding of participant's experiences of their involvement in a therapy dog program, and (c) determine whether or not a therapy dog program is feasible for Bowdoin College and is worthy of further development.

DURATION OF PARTICIPATION, ELIGIBILITY
Campus Tails will operate on the Bowdoin College campus for the duration of the spring semester 2013. **Participation in this research is voluntary. If you choose to have your dog be involved in this research project, I ask that you commit to participation for a minimum of eight weeks so that I may collect meaningful data. However, you have the right to withdraw your dog's participation without penalty at any time until the completion of the project at the end of the spring semester.** In order for a dog to be eligible in this research, he or she must (a) be certified as a therapy dog, (b) be in good health, (c) be free of internal and external parasites, and (d) enjoy being with people.

PROCEDURES TO BE FOLLOWED DURING THE RESEARCH
If you would like your dog to participate in this research project, we will meet so that I can spend time with your dog and assess for goodness of fit with the Campus Tails pilot program. Goodness of fit is determined by friendliness, absence of separation anxiety, and basic obedience skills (all things that your therapy dog certifying process will have already assessed for). If we agree that your dog is a good match for interacting with the program's human participants, your dog will be enrolled as a Campus Tails therapy dog.

During the spring semester, your dog will be "on duty" on the Bowdoin College campus to interact with student participants for up to five hours a day on one to three days a week depending on your availability and on program needs. Your dog will spend approximately 45

minutes with each student. Dogs will meet with the same student participants for the duration of the student's participation in order for both dog and human to become comfortable with each other.

POTENTIAL RISKS OF PARTICIPATION

Student participants will also be screened for goodness of fit with the program. In addition, I will instruct each student participant on proper dog-handling techniques for at least one 45-minute session, and up to three sessions as needed. Although the risks associated with your dog's participation are minimal, you should be aware that your dog will be alone with a student (and potentially several students who are not in the program) for up to 45 minutes at a time. It is possible that he or she may be accidentally injured while walking, jogging, or playing. In the event that your dog becomes ill or is physically injured while under my supervision, I will contact you immediately, and, with your permission, I will bring him or her to the Sun Ray Animal Clinic. The clinic is located approximately 1 mile away from the Bowdoin campus at 46 Bath Rd. Their phone number is 725-6398. In the event that I cannot reach you by phone, I will bring your dog to the Sun Ray Animal Clinic. Alternatively, I will bring your dog to your veterinarian as instructed in advance by you. In the event that your dog needs emergency treatment while under my supervision after business hours, I will bring him or her to the Animal Emergency Clinic at 739 Warren Ave. in Portland (their phone number is 878-3121). In voluntarily agreeing to have your dog participate in Campus Tails, you are giving me permission to supervise his or her care while he or she is on the Bowdoin College campus. Signing this form indicates that you agree to these terms and that you assume any risks (i.e., physical and/or financial) associated with your dog's participation.

POTENTIAL BENEFITS OF PARTICIPATION

Your dog will be interacting with people who really want to spend time with him or her. Your dog will be involved in research that has the potential to benefit the student participants, and may have fun in the process!

COMPENSATION FOR PARTICIPATION

There is no compensation for participating in this research.

PARTICIPATION RIGHTS AND RESEARCH WITHDRAWAL

Participation in this research is voluntary. You have the right to withdraw your dog from participation without penalty at any time until the completion of the project at the end of the spring semester. If you decide to withdraw, please contact me to let me know of your decision. Similarly if you are unable to have your dog participate on a scheduled day, please contact me.

DEBRIEFING

The findings of this research will be available to all participants. If you would like to receive a summary of the findings, please write your name and the email or postal address in the space provided below and I will send them to you when they are available.

QUESTIONS

If you have any questions about the project that are not answered here, I would be happy to give you more information now. If you think of questions later, you can contact me,

Maureen Sanford, by email at [email address omitted for privacy] or by calling me at xxx-xxx-xxxx. If I am not able to answer your questions satisfactorily, you may contact either Dr. Straus at mstraus@antioch.edu or Dr. Hershberger at bhershbe@bowdoin.edu.

PARTICIPANT'S RIGHTS

Researcher: Maureen Sanford

Research Title: Campus Tails Therapy Dog Pilot Program and Feasibility Study

- I have read and discussed the description of this research with the researcher. I have had the opportunity to ask questions about the purposes and procedures regarding this study.
- I understand that participation in this study is voluntary. I may withdraw my dog from participation at any time without penalty.
- Likewise, the researcher may withdraw my dog from the research at her discretion in the event that my dog's behavior is not conducive to research goals.
- If at any time I have any questions regarding the research or my participation, I can contact the investigator, who will answer my questions. The investigator's phone number is xxx-xxx-xxxx.
- If at any time I have concerns regarding the conduct of the research, I should contact the Bowdoin College Institutional Animal Care and Use Committee (IACUC) Chair, Damon Gannon, PhD, at 207-798-4267. I may also write to the IACUC in care of Professor Damon Gannon, Department of Biology, 6500 College Station, Bowdoin College, Brunswick, ME 04011 or email to iacuc@bowdoin.edu. I may also contact the Antioch University New England Institutional Review Board (IRB) Chair, Katherine Clarke, PhD, with concerns by emailing her at kclarke@antioch.edu.
- I should receive a copy of the Informed Consent for Dog Owners form and this Participant's Rights form.
- My signature below means that I agree to have my dog participate in this study.

Participant's Signature: _____ Date: ____/____/_____

Name: _____

Email Address: _____

Best phone number(s) to reach you: _____

RESEARCHER'S VERIFICATION OF EXPLANATION

I certify that I have carefully explained the purpose and nature of this research to _____ (dog owner's name). He/She has had the opportunity to discuss it with me in detail. I have answered all of his/her questions and he/she provided the affirmative agreement to participate in this research.

Researcher's Signature: _____ Date:____/____/_____

Appendix G: Campus Tails Logic Model Part-Time Program

Campus Tails Logic Model Part-Time Program

Population Condition: Each week, the program will serve up to 40 students who suffer from symptoms of depression and/or anxiety, but are disinclined to engage in traditional counseling services.

Goal: To reduce symptoms of depression and/or anxiety and increase perception of wellbeing.

Resources	Activities	Outputs	Outcomes
• 25 hrs. of staff coverage - 5 hrs. a day Monday – Friday • 2 dogs/25 hrs. each - 5 hrs. daily Monday – Friday o 4 hrs. of availability o 1 hr. mid-shift break • Dog supplies: - Bed - Water bowl - Leash - Treats - Clean-up bags - Interactive toys • Emergency contact numbers • Office space	• Provide introductory training sessions for new participants • Provide AAA interventions	• 40 hrs. of AAA time each week (20 hrs. per dog)	• Immediate: - Fun - Relaxation - Stress relief • Long term: - Reduction in symptoms of depression - Reduction in symptoms of anxiety - Increase in sociability - Improved mood - Improved sense of self

Appendix H: Campus Tails Logic Model Full-Time Program

Campus Tails Logic Model Full-Time Program

Population Condition: Each week, the program will serve up to 90 students who suffer from symptoms of depression and/or anxiety, but are disinclined to engage in traditional counseling services.

Goal: To reduce symptoms of depression and/or anxiety and increase perception of wellbeing.

Resources	Activities	Outputs	Outcomes
• 40 hrs. of staff coverage - 8 hrs. a day Monday – Friday • 3 dogs/40 hrs. each - 8 hrs. daily Monday - Friday o 6 hrs. of availability o 1 hr. break after two hours of activity • Dog supplies: - Bed - Water bowl - Leash - Treats - Clean-up bags - Interactive toys • Emergency contact numbers • Office space	• Provide introductory training sessions for new participants • Provide AAA interventions	• 90 hrs. of AAA time each week (30 hrs. per dog)	• Immediate: - Fun - Relaxation - Stress relief • Long term: - Reduction in symptoms of depression - Reduction in symptoms of anxiety - Increase in sociability - Improved mood - Improved sense of self