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THE EFFECT OF CANINES ON ATHLETES IN AN ATHLETIC TRAINING ROOM
WITH AN EMPHASIS ON HEGEMONIC MASCULINITY

A Masters Thesis presented to the Faculty of the Graduate Program in Exercise and Sport
Sciences
Ithaca College

In partial fulfillment of the requirements for the degree Master of Science

by

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CERTIFICATE OF APPROVAL

MASTER OF SCIENCE THESIS

This is to certify that the Thesis of
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submitted in partial fulfillment of the requirements for the
degree of Master of Science in the School of
Health Sciences and Human Performance
at Ithaca College has been approved.

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ABSTRACT

The purpose of this study was to examine if the presence of a canine in an athletic training room impacts the psychosocial environment, and hegemonic masculine athletes' help-seeking behaviors. More specifically, this study examined the effect that canines had on rehabilitation processes in the athletic training room at one NCAA Division II university in the Northeast United States, known to use a comfort dog in the athletic training room. It was hypothesized that the canine would enhance the psychosocial atmosphere, and that the presence of a canine would be associated with positive health seeking behaviors in hegemonic male athletes.

Following IRB approval, Qualtrics-based questionnaires were sent electronically to 452 athletes identified by the university's athletic training staff as having used the athletic training services over the past year. Ninety-five athletes responded. The athletes were presented with an online survey that consisted of a demographics questionnaire, three questionnaires examining the overall effectiveness of a dog being present in the athletic training room, and if the participant identified as male, a fourth questionnaire that rated their hegemonic masculinity levels (CMNI-46). Lastly, a fifth questionnaire was sent specifically to the athletic trainers to gain insight from their perspectives about how the canine influenced the environment. Dog Treatment Questionnaires 1 and 2 were for athletes who had received athletic training treatments while in the athletic training room with the dog, and Dog Treatment Questionnaire 3 was for athletes who had received athletic training room treatments with no dog present.

Chi-squared analyses found fifteen of the sixteen questions in the first dog treatment questionnaire, and twelve of the fifteen questions in the second dog treatment

questionnaire to be significant at the $p \leq 0.05$ level, meaning that significantly more participants found the experience with the dog to be favorable versus neutral or unfavorable. A chi-squared analysis also found Dog Treatment Questionnaire 3 to be significant at the $p \leq 0.05$ level for seven of the thirteen questions, meaning that significantly more participants believed that specific aspects of the athletic training room environment would be better if a dog was present. A correlation analysis was also run showed a high positive relationship with the scores on the Dog Treatment Questionnaire 1 and Dog Treatment Questionnaire 2 at the $p \leq 0.01$ level ($r = 0.823$).

Overall, it was found that the canine did enhance the psychosocial atmosphere. Analyses showed that the dog significantly improved athletes' experiences in regards to anxiety, confidence, and adherence to rehabilitation. These findings are limited by response rate, cross-sectional design, potential selection bias, and the lack of validation in the questionnaires. Secondly, it was hypothesized that the hegemonic masculinity levels would affect a male athlete's perception of canine-assisted therapy, and this hypothesis was not supported. Analyses showed that there was no relationship between the scores on the Dog Treatment Questionnaires with any of the subscales on the CMNI-46. These findings are limited by the response rate, range restriction, and attrition rates. In conclusion, it was found that athletes reported that the dog's presence decreased anxiety, increased confidence, and increased adherence within rehabilitation; the benefits of a dog's presence can be predicted; and, the dog had no specific effect on the hegemonic male athletes undergoing rehabilitation. Recommendations for future research are presented.

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CHAPTER 1

INTRODUCTION

The human-animal bond has been examined from many angles: physically, psychologically, and socially. Physically, the presence of an animal has been shown to decrease the cardiovascular effects of stress while increasing neurochemicals associated with relaxation and bonding (Allen, Blascovich, & Mendes, 2002; Charnetsky, Riggers, & Brennan, 2004). Psychologically, animals have been shown to nurture the development of empathy in children, and decrease levels of anxiety in undergraduate students (Melson, 2003; Wilson, 1991). Socially, animals promote social interactions by being walked in public places and taken to dog parks (McNicholas & Collis, 2000; Messent, 1983; Walsh, 2009; Wells, 2004 as cited in Wells, 2009b). In recent years, the benefits of animals has resulted in the development of Animal-Assisted Therapy (AAT). Based on the potential benefits of canines, AAT was created to help the client accomplish their goals in a setting that promotes empathy, safety, and security (Nimer & Lundahl, 2007; Steinbeigle, 2017). Overall, animals have been found to provide pleasure, relaxation, deep affection, steadfast loyalty, security, and consistency—all things that are useful in developing and maintaining a good therapeutic relationship (Walsh, 2009).

The positive benefits of AAT may impact human males and females differently. Genetically linked male and female sex traits are often culturally manipulated leading to sex-based expectations and norms. For example, males are supposed to repress emotions, not express pain, and have power (Good, Thomson, & Brathwaite, 2005). In some cases, these and other amplified masculine traits have led to negative behaviors and identities,

now referred to as hegemonic masculinity, toxic masculinity, or jock identity. This kind of identity exists throughout society, however, there are three specific places that it is not only found, but also encouraged: military, prisons, and athletics. In the military, this identity is highly encouraged because it emphasizes independence, risk-taking, aggression, and discipline (Chen & Dognin, 2017). In prisons, it is encouraged for survival, due to the increase in violence and lack of emotions witnessed from inmates (Britton & Button, 2005).

Hegemonic masculinity has been found to be most dominant in the sport realm, because it is the first place outside the family that males learn about masculine values. This realm creates a culture that allows males to have separation from femininity and proof of the ‘natural superiority’ that men have over women when it comes to athletic abilities (Messner, 1988). Athletics enables some men to resort to anger, aggressiveness, and hostility as a way to express their bottled-up emotions due to the need for invulnerability (Möller-Leimkühler, 2003). Researchers have found that the development of sport-related identities are typically endorsed by a propensity for violence, a playboy attitude toward sexual relationships, an emphasis on winning, risk-taking, and interpersonal dominance (Miller, 2009). Given that AAT has demonstrated an influence on behaviors in patients, it seems plausible that these effects may be more pronounced in some males with hegemonic traits.

Statement of Purpose

The purpose of this study was to examine if the presence of a canine in an athletic training room impacts the psychosocial environment, and hegemonic masculine athletes’ help-seeking behaviors.

Research Questions

1. Do canines enhance the psychosocial athletic training atmosphere?
2. Does the level of hegemonic masculinity affect a male athlete's perception of the canine-assisted therapy?

Scope of the Problem

Hegemonic men tend to avoid seeking help when it comes to emotional and psychological issues that they may be experiencing. While hegemonic masculinity is common throughout society, it is prominently seen in athletics (Möller-Leimkühler, 2003). Taking a holistic approach, athletes need to be better understood when it comes to receiving consultations on their performance. If canines can decrease anxiety and increase help-seeking behaviors, then having a canine present could help relieve psychological and social problems, and therefore, help athletes focus on the physical needs for their sport (Nimer & Lundahl, 2007; Steinbeigle, 2017). Having a canine present may also be helpful to encouraging help-seeking behaviors when an athlete is struggling, which could help on-field performance and decrease distractions.

Assumptions of the Study

The following assumptions were made for this study:

1. The athletes accurately and honestly answered the questionnaires.
2. The athletes did not have any aversions to canines.

Definition of Terms

The following terms were operationally defined for the purpose of this investigation:

1. Hegemonic Masculinity: High-degree of ruthless competition, an inability to express emotions other than anger, an unwillingness to admit weakness, homophobia, and the devaluation of women and feminine attributes in males (Kupers, 2005).
2. Animal-Assisted Therapy (AAT): Any intervention that deliberately includes animals as part of a treatment plan (Nimer & Lundahl, 2007).
3. Vulnerability: The capability of being wounded physically, mentally, and/or emotionally, or open to attack (Brown, 2006).
4. Heteronormative: Relating to a worldview that heterosexuality is the preferred sexual orientation (Robertson & Fitzgerald, 1992).
5. Adherence: Abiding by the prescribed treatment protocol (Myers & Capilouto, 2016).
6. Help-Seeking Behaviors: Seeking out the help of another for issues relating to both physical and mental ailments.

Delimitations of the Study

The delimitations of this study were:

1. The teams selected for the study were chosen out of convenience for having a canine already present in the existing athletic training setting.
2. All student-athletes at the chosen school were allowed to participate in the study whether they had interacted with a dog or not, and whether male or female.
3. The study employed a single athletic training room environment, with a single dog.
4. Questionnaires were used to assess athletes' perceptions.

5. The study was a cross-sectional exploratory study.

Limitations of the Study

The limitations of this study were:

1. Athletes may not have been completely honest in their responses for fear of social repercussions.
2. The online questionnaire response rates were low and responses may be biased toward subjects with strong feelings one way or another.
3. Responses were subjects' beliefs and perceptions, and may not reflect actual data in terms of rehabilitation effectiveness or adherence.
4. The sample population was limited to a single college and a single dog in the athletic training room, and therefore the results may not be generalized to a wider population.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

The human-animal bond dates back to our ancestors when they utilized animals as an enhancement to an individual's survival. Even before humans settled into agricultural communities, they kept both wild and tamed animals as companions, and used domesticated animals as guards and protectors (Savishinsky, 1983; Wilson, 1984, 1993). Through fossil evidence linking *Homo Erectus* with a canine-like species, human relationships with companion animals have been dated back to at least half a million years (Messent & Serpell, 1981). Even more recently, a person was found buried with one arm around a puppy in a 12,000 year old tomb in Israel (Davis & Valla, 1978). When humans began settling into agricultural communities, dogs assisted in herding and farming while cats eliminated rodents that brought disease – both vital roles in developing those communities (Walsh, 2009). In recent years the bond has been implicated in a number of additional benefits for humans, namely physical and mental health benefits. This review examines these health benefits in athlete rehabilitation, and specifically, the impact animals may play in improving the rehabilitation environment of hegemonic males. This review examines (1) the general role of pets and human well-being, (2) specific uses of animal-assisted therapy in areas relevant to athlete rehabilitation, (3) the nature of hegemonic masculinity, and (4) the role of animal-assisted therapy in masculine environments.

Pets and Human Well-Being

In a national survey, more than 63% of U.S. households and over 75% of households with children currently had at least one pet (Walsh, 2009). Pet ownership, albeit widespread, varies among populations. According to Saunders, Parast, Babey, and Miles (2017), people are more likely to own a dog if they are white, female, homeowners, married, live in a rural neighborhood, have asthma, are in good health, and live in a household where everyone works full time. After adjusting for extraneous characteristics, those who owned a home were 1.56 times more likely to own a dog; those who lived in a house were 2.5 times more likely to own a dog; and, those with asthma were 1.22 times more likely to own a dog. Wells and Perrine (2001) noted that 95% of pet owners regard their pets as their friends, while 87% regard them as family members. Further, these authors reported that all their survey respondents gave their pets a holiday present, 87% included their pets in holiday celebrations, 65% sang or danced for their pets, 52% prepared special meals for their pets, 53% took time off from work to care for a sick pet, and 44% took their pets to work – which has been shown to boost morale and productivity (Wells & Perrine, 2001). These data indicate the importance pets can have in the lives of people. It also indicates that pets, dogs and cats particularly, give a variety of benefits to their humans including an increase in mood, an increase in social activities, and a special sense of purpose in life (Wells, 2009b).

On the other hand, a person is 100 times more likely to be seriously injured or killed by a dog than a venomous snake in the United States alone (Herzog, 2011). Over 85,000 Americans are taken to the emergency room each year because of falls caused by their pets (Herzog, 2011). People can contract serious diseases from their pets like

brucellosis, roundworm, skin mites, *E. coli*, salmonella, and ringworm among other diseases. Even more, pets are second to only late night noises as a source of conflict between neighbors (Herzog, 2011).

Despite these negatives, however, pet owners find their pets to be a consistent source of attachment security, which is a dependent relationship consisting of a bond that fosters trust and comfort. Beck and Madresh (2008) found that this attachment security people have with their pets can be even more secure when compared to relationships with romantic partners. When related to physiological measures, the presence of a pet was also found to be more effective than a spouse or friend when decreasing the negative cardiovascular effects of stress (Allen, Blascovich, & Mendes, 2002). Data like these have prompted researchers to look further into human-animal relationships. O'Haire (2010) proposed the Social Support Hypothesis, which posited that companion animals are social support vessels and act as facilitators of social interactions between other human beings. Dogs in particular have been noted for their socializing role. For example, walking a dog results in a significantly higher number of chance conversations with complete strangers than walking alone (McNicholas & Collis, 2000; Messent, 1983; Wells, 2004). Dog parks or dog beaches are also helpful in forging new bonds as they provide a place where humans can interact with other humans based off the interactions that the dogs are having (Walsh, 2009). The social support of a dog during a social stress test in children has also been found to be associated with significantly lower cortisol levels than when compared to the support of a friendly human (Beetz, Kotrschal, Hediger, Turner, & Uvnäs-Moberg, 2011). However, this effect was strongly correlated

with the time the child spent with the dog during the experiment, indicating that familiarity with the dog may play an important role in the social stress condition.

Similarly, companion animals have also been shown to improve the health of their owners. In a study done with coronary heart disease patients, it was found that one year after being discharged from the hospital, pet owners were more likely to be alive than non-pet owners (Friedmann, Katcher, Lynch, & Thomas, 1980). Coronary heart disease has stress-related risk factors, therefore, researchers have suggested that the positive health effect of pet ownership is due to the effects on improving psychological risk factors (Patronek & Glickman, 1993). For example, it has been shown that dog and cat owners have better mental and physical health than non-owners, have fewer annual doctor visits, and are less likely to be on medication for heart problems or sleeping difficulties (Headey, 1999). Another study looked at the correlation between pet ownership and anxiety in undergraduate students, comparing three different conditions that included reading aloud, reading quietly, and interacting with a friendly dog (Wilson, 1991). Wilson (1991) found that blood pressure was lower when the subjects were reading quietly and when interacting with the dog; therefore, the researchers concluded that interacting with an animal is likely to have an anti-anxiety effect similar to relaxing activities like reading quietly.

Physiologically, it has also been found that interactions with companion animals can increase neurochemicals associated with relaxation and bonding, and can improve human immune system functioning (Charnetsky, Riggers, & Brennan, 2004). There have been studies that show the similarities between canines and humans when related to brain and nerve cells, and recent studies have found that the neurons have similar chemical

compositions and the patterns of electrical activity are identical (Kirkness, Bafna, & Halpern et al., 2003). Researchers have also found a greater than 75% overlap between the genetic code of humans and canines (Kirkness, Bafna, & Halpern et al., 2003). In relation, studies have found that canines have complex thinking and feelings similar to humans, and tend to demonstrate an uncanny ability to read human cues and behaviors, often accurately interpreting even subtle hand gestures and glances (Katz, 2003).

There are some anecdotal experiences that suggest animals may be able to detect early signs of cancer and critical medical situations. Similar to other diseases, cancers leave a specific trace or odor signature in a person's body, and dogs are able to detect these signatures in a person's skin, breath, urine, feces, and/or sweat (Silva, 2018). One example of this is a 75 year old man who visited the doctor after his dog licked persistently at a lesion behind his ear – the doctor diagnosed it as malignant melanoma (Silva, 2018). Another anecdotal experience occurred in a nursing home where the resident cat is believed to be able to sense the impending death of residents, and conveys this message by going into their rooms and curling up on the beds with them (Dosa, 2007).

Dogs can also be trained to detect certain cancers or medical illnesses and alert people of their presence. Dogs that undergo this training are usually referred to as medical detection dogs (Silva, 2018). So far, dogs have been trained to detect colon, prostate, and breast cancer, and because this detection is a noninvasive procedure, researchers are still exploring how this can be implemented in medical settings to diagnose humans early in the cancer process (Silva, 2018).

In the elderly, pets also tend to promote relaxation, increase adherence to a daily schedule, and enhance their mobility and well-being; while in dementia patients, pets have been found to decrease agitation and increase socialization (Walsh, 2009). Pets also foster psychosocial development of children who tend to show enhanced empathy, increased self-esteem, increased cognitive development, and greater participation in social and athletic activities after interacting with their pets (Melson, 2003). It also tends to be easier to teach children to be empathetic towards animals than with humans because animals are considered to be straightforward in expressing their feelings and behaviors (Melson, 2003). Children also naturally relate to animal characters in movies and stories, and tend to have enjoyable interactions with those characters at theme parks, in computer games, and on the internet with virtual pets (Wells, 2009b).

When it comes to canines and felines, Serpell (1991) found significant reductions in the frequency of minor physical ailments (e.g. headaches, colds, dizziness) for both types of animal owners one month after the adoption; however, dog owners maintained these decreases 10 months later. Dog owners were also 8.6 times more likely to still be alive one year after a heart attack when compared with cat owners (Serpell, 1991). However, this disparity between type of companion animal has not been heavily researched.

On the other hand, contradicting results have also been found. For example, in a recent study looking at 425 heart attack victims, it was found that pet owners were more likely than non-pet owners to die or suffer relapse within a year of suffering their heart attack (Parker et. al., 2010). Wells (2009a) studied the impact of acquiring a pet on individuals suffering from chronic fatigue syndrome. She found that while pet owners in

the study claimed their animals provided them with a host of psychological and physical benefits, their scores on a standardized measure indicated that they were just as tired, worried, depressed, and stressed as the chronic fatigue sufferers who did not get a pet (Wells, 2009a). In another study looking at 40,000 Swedes, researchers found that even though pet owners were physically healthier, they suffered more from psychological problems like anxiety, depression, and insomnia (Mullersdorf & Granstrom, 2010). These studies do not indicate why the pet owners had more psychological problems; however, it could be that those suffering from psychological problems are drawn to pets as a way to enhance their psychological well-being. These three studies reinforce the fact that multiple studies have been found to have conflicting results, and replication of studies has been a consistent problem to date. Because of this and since most of these studies are cross-sectional, have convenience sampling, are correlational in nature, and true experimental blinded studies are difficult to perform using pets as interventions, it is hard to draw firm conclusions one way or another (Herzog, 2011; Saunders, Parast, Babey, Miles, & 2017).

In total, the bulk of the epidemiological, observational, and correlational data has shown that animals can improve the effects of stressful life events, reduce levels of anxiety, loneliness, and depression, and enhance an individual's feelings of autonomy, competence, and self-esteem. However, similar research methodologies have also shown the opposite or no beneficial effects of animals in human well-being. Experimental studies, discussed next, have been designed to clarify the nature of animal benefits in well-being.

Animal-Assisted Therapy

Animal-assisted therapy (AAT) is defined as any intervention that deliberately includes animals as part of a treatment plan (Nimer & Lundahl, 2007). This combination of animals and therapy was designed to help clients accomplish goals that were previously perceived as difficult to achieve. In mental health settings, clients are encouraged to pet the animal as a means to teach appropriate touch, reduce anxiety, increase a sense of connection, and reduce loneliness (Nimer & Lundahl, 2007). AAT has also been shown to affect a number of other important therapy goals including increased rapport and communication between patients and therapists, enhanced adherence and compliance with therapy, and improved behavior outside the context of therapy (Fine, 2006; Katcher and Wilkins, 1998; Kruger, Trachtenberg, & Serpell, 2004).

This type of therapy is an unconventional treatment that may allow people to ‘escape’ from their world and enter a new one where they can try new experiences, and be treated in a holistic manner targeting behavioral, psychological, and affective domains. For this reason, AAT has been empirically shown to work successfully in some populations (e.g., juvenile delinquents) where other therapies such as traditional talk therapy has not been as successful (Firmin, Brink, Firmin, Grigsby, & Trudel, 2016).

Nimer & Lundahl (2007) examined multiple AAT studies through a meta-analysis, finding a general theme that animals can help in the healing process. These authors found four studies that used AAT and compared them to established interventions, and found that AAT was just as effective; however, many studies done with AAT lack control groups so it is difficult to know what truly caused the results. Similarly, in a systematic review of randomized control trials (RCT), AAT seemed to be

most effective with those suffering with mental and behavioral disorders (Kamioka et. al., 2014). The main reasons provided for improved mental health was that the feeling and memory of an animal allowed the patient to be comfortable, pleasant, and happy.

However, in this systematic review of eleven articles, only two were evaluated as good quality from a methodological standpoint. The researchers evaluated the methodology by using a point system and having a criteria that included: a control group, randomization, blind coders, a treatment manual, at least three descriptions of the sample, well-known measures of dependent variables, clear description of intervention, delivery location, and effect size (Kamioka et. al., 2014).

In AAT, it has been found that the client's demeanor changes in the presence of an animal-partner, indicating feelings of safety, comfort, trust, and/or relaxation with the counselor and/or therapeutic process (Steinbeigle, 2017). Having an animal present also increases the ability to build rapport and trustworthiness within the client-counselor relationship as it paints a picture of authenticity, genuineness, and congruence, therefore creating an environment of relaxation and confidence (Steinbeigle, 2017). An animal may also help create a safe and comfortable atmosphere because having a healthy and happy animal present can convey to the client that the therapist is trustworthy and safe. The relationship between the animal and the therapist also models a healthy relationship to their clients representing a relationship built on trust, respect, care, and connection (Steinbeigle, 2017).

Interestingly, the action of simply stroking or petting an animal has been found to cause temporary decreases in blood pressure and/or heart rate (Wells, 2009b). Odendaal and Meinties (2003) found that there was a significant increase of plasma oxytocin as

well as dopamine in both humans and dogs after 5-24 minutes of stroking a dog. However, the strongest effect was seen when it was a familiar dog, therefore indicating that the closer the human-animal relationship, the more oxytocin will be released. Also, being in the presence of a familiar animal can lower autonomic responses (e.g. decreases in heart rate and blood pressure) to conditions of moderate stress. In one study that compared a visit with a dog to a visit with the usual care in the hospital among adults with heart failure, the researchers found significantly lower levels of epinephrine and norepinephrine during and after the dog visits (Cole, Gawlinkski, Steers, & Kotlerman, 2007).

Similarly, in a study that took blood samples from both the humans and the dogs, they found that the canines have just as many benefits as the humans do from the interaction (Odendaal & Meintjes, 2003). For example, Odendaal and Meintjes (2003) found the mean arterial blood pressure decreased in both species, and took an average of 15 minutes for these changes to be seen in both human and dog. β -Endorphin, a chemical shown to be involved in learning and memory, feeding behavior, thermoregulation, blood pressure regulation, reproductive behavior, euphoric states, and distressful situations had a significant rise in both humans and canines. Oxytocin, a hormone that promotes intimate bonding, almost doubled in both humans and canines after the interaction; and prolactin, a chemical that inhibits sexual behavior and promotes bonding also increased. Phenylethylamine concentrations in urine, typically associated with feelings of attraction, exhilaration, and apprehension, were significantly higher in those who were happily attached compared to people undergoing a divorce. There was also an increase in plasma dopamine concentrations in both humans and canines indicating that both derived

pleasurable sensations from the interaction; and, only humans showed a significant decline of cortisol during the interaction. Odendaal and Meintjes (2003) concluded that not only do humans receive positive physiological benefits from the interaction, the canine also experiences positive benefits.

This type of AAT treatment has also been shown to decrease client awkwardness and heighten the initial client-counselor relationship (Steinbeigle, 2017). In Steinbeigle's qualitative study with counselors who utilized therapy animals, one therapist described the idea that their client's guard tends to go down when they realize there is an animal present, therefore fostering a relaxing environment. There also tended to be a decrease in symptoms as the clients became more self-aware. For example, when the client became emotional, they tended to stop and take a breath because they thought they were upsetting the animal. It is also important to note that the presence of the animal has been able to provide the clients with a sort of anchor in that when they get into an emotional state, the animal can bring the client back to the present (Steinbeigle, 2017).

One longitudinal intervention study stands out when examining AAT. Allen, Shykoff, and Izzo (2001) conducted a pre-post experimental study with a control group using hypertensive stockbrokers to determine if AAT could help reduce hypertension. Participants were randomized to a control group without pets or an experimental group who had to acquire a pet before treatment began. All participants were given drug therapy to reduce mental stress. The researchers found that the drug therapy lowered only the resting blood pressure in the control group; whereas, in the experimental group with the addition of a pet as social support, their blood pressure responses to stress was lowered. The researchers believed this to indicate that people with low social support systems are

more likely to benefit from an environment with a pet. Also, when related to task performance (i.e., a serial subtraction task), those in the experimental group did significantly better. Both groups had a baseline of 74% correct performance; whereas, participants with a pet had 92% correct performance at the end of the study while the control group remained at 75%. These data further imply that participants working with an animal present were not distracted enough to abandon their task at hand. However, this study has some limitations that make the data hard to generalize. The participants included volunteers indicating convenience sampling, which means that the study was not truly randomized and representative of the population. Also, the researchers cannot assume that individuals who do not have an affinity for animals would develop similar relationships with pets (Allen, Shykoff, & Izzo, 2001).

One therapy dog organization has listed ten potential therapeutic implications of AAT in their mission, including emotional safety, relationships, limit setting, attachment, grief and loss, reality orientation, pleasure/affection/appropriate touch, socialization, laughter, and anxiety (“Pet Partners”, n.d.). Similarly, fourteen therapists and specialists from an equine therapeutic facility listed six outcomes that they felt were significant benefits to AAT: positive behavior patterns, trust, empathy, caring for others, cooperation and responsibility, and unexpected benefits (Firmin, Brink, Firmin, Grigsby, & Trudel, 2016). When building rapport and trustworthiness, a client has to be comfortable in order to open up to the therapist. Having an animal present enables detached or emotionally reserved clients to direct their feelings of love and concern to the animal. The animal can also offer the opportunity for an uncomplicated attachment, which can teach them skills when it comes to attachment and how to apply those skills to human relationships

(Firmin, Brink, Firmin, Grigsby, & Trudel, 2016; O'Callaghan, 2008). Pleasure, affection and appropriate touch helps the client understand autonomy, as well. The client gets to choose whether or not to touch the animal, and because the choice is theirs and theirs alone, it becomes a safe and non-threatening interaction. It also allows the client to focus on something other than their internal feelings within that non-threatening environment. Therefore, the presence of an animal can allow the client to feel safer and can help eliminate or decrease any reservations about therapy a client may originally have had (O'Callaghan, 2008).

In animal-assisted activities (AAA), there has also been significant findings in the relationship between humans and animals. School-based and library programs help children overcome shyness, anxiety, learning difficulties, and classroom embarrassment by having them read aloud to a visiting pet; and in grooming and training programs, youths gain abilities that enhance their self-esteem, confidence, and the ability to relate interpersonally (Walsh, 2009). Physical therapists have used dogs to increase motivation, balance, and walking in those recovering from strokes (Walsh, 2009). Companion animals can meet many core psychosocial needs and enrich lives. Overall, they tend to provide pleasure, relaxation, deep affection, steadfast loyalty, security, and consistency (Walsh, 2009). Boris Levison, a child psychologist who pioneered the use of pets in therapy, observed that a pet bond could be a lifeline for those who were vulnerable and believes that the acquisition of a pet is one of the ways to preserve human sanity (Walsh, 2009).

One significant factor that should not be overlooked, however, is that the animal's behavior may not always be predictable and planned that can reflect life in general. In

some cases, the animal can be used as an avenue to discuss adoption or abuse by utilizing the background of the animal (i.e., if it was adopted from a shelter, if it was abused before being adopted) (O'Callaghan, 2008). However, although there is a lot of research on the effectiveness of AAT when it comes to one-on-one therapy sessions and therapy with children, there has been a lack of research when looking at AAT in groups, especially within athletes. Through the limited research, however, AAT has been shown to be beneficial with difficult or resistant clients, which is why the potential for benefits within male college-aged athletes could be immense (Steinbeigle, 2017).

AAT in Healthy College-Aged Students

Though there is a growing amount of research on AAT in children, elders, and clinical populations, there is limited research on AAT in young adults and in cases of acute or short term psychosocial situations. There are, however, three studies that stand out that found significant changes in stress levels when a therapy dog was present. In a study looking at sixty-one university students who were randomized into a control group or a therapy dog group, researchers found that there was a significant reduction in electrodermal activity (EDA) from baseline to post-stress with the therapy dog group, indicating that the canine helped buffer the response to stress (Fiocco & Hunse, 2017). Similarly, in another study, students engaged with a therapy dog for fifteen minutes during finals week and the researchers found that there were significant reductions in perceived stress and in their salivary cortisol levels (Delgado, Toukonen, & Wheeler, 2018). Lastly, over one hundred students were randomly assigned one of three conditions to evaluate shifts in mood: handler-and-dog, dog-only, and handler-only (Grajfoner, Harte, Potter, & McGuigan, 2017). The researchers found that there was a positive

significant shift in mood, well-being and anxiety in the dog-only condition when compared to the handler-only condition. However, there was no significant difference between the handler-only condition and the handler-dog condition, which suggests that interacting with a dog alone was particularly powerful (Grajfoner, Harte, Potter, & McGuigan, 2017).

AAT in Physical Rehabilitation Settings

The benefits of AAT have been noted in clinical settings other than psychological rehabilitation. Two studies done by the same group of researchers one year apart found that brief therapy dog contact significantly reduced pain severity in patients of all ages (Marcus, Bernstein, Constantin, Kunkel, Breuer, & Hanlon, 2012; Marcus, Bernstein, Constantin, Kunkel, Breuer, & Hanlon, 2013). In the first study, the researchers looked at participants from an outpatient pain management clinic where they had to fill out a depression and an anxiety disorder screening survey as well as a survey to rate their symptom severity (Marcus et. al., 2012). Patients then filled out the same questionnaires as they did before being introduced to the therapy dog. For both studies, the control group consisted of patients filling out the questionnaire, sitting in the waiting room for fifteen minutes and then filling out the questionnaire again (Marcus et. al., 2012). The second study was conducted with participants who suffered from fibromyalgia (Marcus et. al., 2013). Both studies found significant improvements in all pre and post-intervention data for the therapy dog visits, including reduced pain, fatigue, stress, aggravation, anxiety, sadness, irritability, and improved calmness, pleasantness and cheerfulness (Marcus et. al., 2012; Marcus et. al., 2013). Overall, pain severity was significantly reduced after a visit with clinically meaningful (creating a meaningful change in a small sample of the

patients which was not deemed significant to the whole group) pain relief reported in 34% of patients after the dog when compared to 4% in the waiting room. Clinically meaningful pain relief was reported by 24% of patients visiting for less than 10 minutes, and in 39% of patients for visiting more than ten minutes (Marcus et. al., 2013). Therefore, there is a high correlation between how long patients spend with the dog and levels of pain severity.

Elmacı and Cevizci (2015) aimed to evaluate the effects of dog-assisted therapy on occupational therapy needs in children with cerebral palsy and children with physical and mental disabilities. The authors conducted five different intervention cases. In the first case, three participants were successful in working through their anxiety in the hospital environment by using medical equipment like a stethoscope and bandages on the therapy dog. In the second study, a boy with cerebral palsy and hemiparesis focused on using the right side of the body where he had low muscle awareness and muscle deformity. The boy would feed the therapy dog yogurt; the cold yogurt followed by the warm tongue of the dog aided the boy's low muscle tone and increased the boy's muscle awareness. In another study, a five year old with bilateral cerebral palsy worked on hand movements and balancing with the therapy dog. In the fourth study, four participants who needed to work on communication, planning and empathy, focused on organizing a party for the therapy dog. They planned how to prepare the cake and smelled, touched, and kneaded the ingredients while singing happy birthday. Lastly, a five-year-old boy with a spastic type of cerebral palsy who was very inactive worked on being active through giving lunch to the dog by using his hands and feet, and put the dog to bed by laying

down with the dog to improve motor movements. Overall, all five studies were successful in achieving their goals with the kids by using the therapy dog (Elmacı & Cevizci, 2015).

Therapy dogs have been used in other settings to help in pain management. In a population of patients rehabilitating from total joint arthroplasty, patients were visited by a dog for fifteen minutes before physical therapy sessions, while the control group continued with physical therapy as normal (Harper, Dong, Thornhill, Wright, Ready, Brick, & Dyer, 2015). The patients had a total of three visits with the dog. Overall, the introduction of the dog during the immediate postoperative period resulted in significant improvements in validated measures of pain (VAS) as well as increased hospital ratings in nursing communication and pain management.

However, there has been conflicting evidence to the effectiveness of AAT. Recently, no benefit was found when utilizing AAT in a pediatric hospital for patients who averaged a stay of two days (Branson, Boss, Padbye, Trötscher, & Ward, 2017). In this randomized control trial, the experimental group consisted of a dog and the handler in the patient's room for ten minutes with no restrictions on their interactions, while the control group consisted of a stuffed-animal dog. The researchers found that those who received the treatment did not have significantly larger decreases in anxiety, negative affect, cortisol, or C-reactive protein (CPR) levels (a marker for inflammation in the body), nor did they have larger increases in positive affect than the children in the control condition. On the other hand, the researchers did find increases in positive affect and decreases in negative affect in the AAT condition, however, the findings were not statistically significantly different from the control condition. Despite the lack of significance, the researchers found a trend that children who had higher levels of anxiety

and stress biomarkers at baseline had larger decreases than children who had lower baselines. However, with a small sample size of forty-eight, it is hard to know if the sample size was the reason for a lack of significance in their findings (Branson et. al., 2017).

Summary of AAT Findings

Animal-Assisted Therapy is a holistic approach that may be more beneficial for certain populations in that it contributes to enhancing a safe and trustworthy environment. By having a safe environment, it increases the ability for the therapist to build rapport (Steinbeigle, 2017). It also allows the client to become more self-aware as their emotions may affect the animal. Therefore, the animal acts like an anchor for the client to help them stay in the present moment (Steinbeigle, 2017). There are numerous studies that support the notion that AAT can be beneficial for young children (Firmin et. al., 2016; Steinbeigle, 2017; Walsh, 2009). However, there is little research to indicate that AAT could be beneficial in young adult populations, specifically college athletes. Within this population, canines have been shown to reduce stress and anxiety while increasing mood and well-being (Delgado, Toukonen, & Wheeler, 2018; Fiocco & Hunse, 2017; Graifoner, Harte, Potter, & McGuigan, 2017). In rehabilitation settings, it was also found that animals can significantly reduce pain severity, fatigue, aggravation, and stress while increasing the overall pleasantness of the patient (Marcus et. al., 2012; Marcus et al., 2013). The strength of these findings may be dependent on the type of dog being used (e.g., service dog, emotional-support animal, household pet), but unfortunately, dog type has rarely been noted by researchers. In sum, despite limitations in the current research,

there is evidence that in certain populations and environments that AAT can be beneficial for psychological, social, and physical improvements.

Masculinity

As mentioned above, AAT has been shown to be beneficial in a number of rehabilitation and medical settings to increase patient calmness, reduce anxiety, and foster an openness and trust to the medical process. These findings may be particularly robust in difficult populations, including fearful and anxious children and detached elders. It is foreseeable that similarly challenging patients may derive particular benefits of AAT. Among such populations could be hegemonic males, noted for their emotional repression, aggression, and unwillingness to be vulnerable. These traits among others may not be conducive to good patient-therapist relationships or rehabilitation outcomes. This review continues with a look at hegemonic masculinity and the potential role that AAT may play in this population.

Early in childhood, the biological differences between boys and girls are often reinforced or amplified by societal gender norms, which are often displayed when it comes to experiencing pain or injury, crying and then receiving corrective behaviors from others for one's tears. For example, boys are typically told that 'big boys don't cry' translating into the idea that crying is an unacceptable form of expression for boys (Good, Thomson, & Brathwaite, 2005). Because of this, repressing emotions is seen as a strength and a sign of invulnerability when associated with masculinity especially in Western and individualistic countries where the gender differences are more pronounced (Möller-Leimkühler, 2003).

The biological basis for male-female differentiation are well understood, though the influence culture and nurture play in the expression of femininity and masculinity is less understood. Nevertheless, there are clear male and female behaviors linked to biological differences in hormones and gene expression. Among these, for example, is the stress response. Males tend to respond in a well-known fight or flight response whereas women adopt a “tend and befriend response” (Verma, Balhara, & Gupta, 2011). This hypothesis that stress responses in men may be primarily characterized as ‘fight-or-flight’ is supported by the observation that the right parieto-frontal Cortex (RPFC) activation and the left orbitofrontal cortex (LOrF) deactivation with stress is predominately observed in the male brain (Verma, Balhara, & Gupta, 2011). Verma and colleagues (2011) further noted the RPFC plays a major role in regulating negative emotions while the LOrF plays a major role in regulating positive emotions. However, persistent dorsal anterior cingulate cortex (DACC) (associated with negative affect) activation following stress observed in female subjects might predispose women to mood disorders and depression if there is no regulating effect of the RPFC (Verma, Balhara, & Gupta, 2011).

Greater autonomic responses (i.e., blood pressure, heart rate) have been found in adult men as compared to adult women in activities that cause psychosocial stress such as public speaking. There is a higher likelihood of cardiovascular disease, aggression, and immune suppression in men because of the greater sympathoadrenal system response. Female sex hormones reduce the sympathoadrenal responsiveness. This leads to a sluggish cortisol feedback on the brain and less or delayed control of the stress response (Verma, Balhara, & Gupta, 2011).

Hegemonic masculinity is a form of extreme masculinity and defined by two traits: domination of women and a hierarchy of inter-male dominance. It is typically conceptualized as the high-degree of ruthless competition, an inability to express emotions other than anger, an unwillingness to admit weakness, homophobia, and the devaluation of women and feminine attributes in males (Kupers, 2005). A similar term, toxic masculinity, is used in the popular press and is characterized by socially regressive male traits such as dominance, the devaluation of women, homophobia, and violence (Kupers, 2005). In toxic masculinity situations, boys are often called derogatory and homophobic names with the expression of vulnerability that can lead to ridicule and shame since the male role provides clear standards against attributes defined as feminine (Good, Thomson, & Brathwaite, 2005; Möller-Leimkühler, 2003). With much pressure to meet the expectations of what a 'real man' should act like according to society, males often respond with defensive insecurities through excessive shows of masculinity (e.g. risk taking, aggression, violence) to validate their male social status (Messner, 1988; Möller-Leimkühler, 2003).

The military culture is often defined by some characteristics seen in hegemonic masculinity. The structure of the military is defined by a hierarchy of authority figures and has an emphasis on reason over emotion, and strength over weakness, which tends to be seen as the ideal among members (Chen & Dognin, 2017). These characteristics by themselves do not indicate a hegemonic masculine environment, however, other hegemonic masculinity traits can serve as an adaptive function for those deployed. These traits include the emphasis on independence, risk-taking, aggression, discipline, perseverance, and calmness under pressure. Despite some benefits of these qualities when

deployed, when soldiers come back home these qualities tend to get in the way of re-adjusting back to life, especially if therapy is needed. With hegemonic masculinity, mental health issues such as depression, anxiety, and PTSD are incompatible and are looked down on because emotional expression is viewed as being weak and feminine (Chen & Dognin, 2017). Therefore, some veterans tend to deny any emotional distress they may feel which complicates the idea of seeking help.

Hegemonic masculinity can also be found in the LGBT community. In a study done with a homosexual sample, it was found that gay masculine norms tend to focus on an exaggeration of the traditional male norms (Halkitis, Green, & Wilton, 2004). Gay and bisexual men tend to develop and integrate hyper-masculine norms into their masculine ideology as a result. A different study also found that as the identification with masculinity increased, so did the likelihood of depression, anxiety, and/or hostility (Fischgrund, Halkitis, & Carroll, 2012). Fischgrund and colleagues (2012) looked at their results through the lens of the Social Stress Model (see Burke, 1991), which states that psychological distress occurs when external messages differ from one's identity, or can occur when one has to maintain two or more incongruent identities. For example, in the Fischgrund study, psychological stress was seen increasing when a participant's own identity did not align with their perceived masculine norms of society (Fischgrund, Halkitis, & Carroll, 2012).

Hegemonic masculinity is common in the sport realm. For years, sport has been seen as a venue where males first learn about masculine values, relations, and rituals, and become an arena where men can act in ways that social settings may not allow (Tjønndal, 2016). Many popular sports encourage and typically require large body masses and

musculature to enhance performance, thereby reinforcing the stereotypical image of male athletes as large, powerful, and aggressive. Sport teams are typically characterized by camaraderie, loyalty, and a fierce collective brotherhood, however, these cultures are inclusive in nature. In order to be a part of the team, the athletes have to understand and adhere to the cultural norms of the team (Tjønndal, 2016).

Male athlete identity can grow out of the experience or participation in some degree of structured violence and hegemonic masculinity, which are common in many organized sports. Within this context, sport then becomes a primary masculine-validating experience that provides men a perceived separation from femininity and a dramatic proof of the ‘natural superiority’ men have over women (Messner, 1988). The “toxic jock” model suggests that the link between sport-related identity and masculinity is stronger for self-identified jocks than athletes (Miller, 2009).

In a study utilizing the Conformity to Masculine Norms Inventory (CMNI), it was found that having an ego-orientation toward sports was positively associated with men and the strength of their athletic identity as well as the conformity to masculine norms. The researchers also found that sport-related identities were mostly endorsed by masculine norms that included propensity for violence, playboy attitude toward sexual relationships, emphasis on winning, risk-taking, and interpersonal dominance (Miller, 2009). When forming an identity, there are multiple influential factors involving expectations and pressures to conform in matters such as romantic relationships, work, children, and their quality of life. The working role is essential to the construct of masculinity, and therefore, males tend to be more affected by socioeconomic stressors (e.g., unemployment, income/finances, loss of status, and education) when compared to

females. Because of this, they tend to be more vulnerable to achievement and power stressors (Möller-Leimkühler, 2003).

In a sample of 401 undergraduate male students, Good, Dell, and Mintz (1989) found that the participants held less favorable views of seeking professional psychological help when compared to a previous study done by Fischer and Turner (1970). This is noticeable in that with almost 20 years in between studies, favorable views for seeking help has continued to decrease. Good et al. (1989) further found that there was a significant relationship between male roles and men's attitudes towards seeking help. The researchers found that traditional attitudes about the male role, concern about expressing affection toward other men, and concern about expressing emotions, were all negatively associated with fewer reports of past help-seeking behavior. They also found that as beliefs about not displaying affectionate behavior toward other men increased, and as the belief that it is not appropriate to share emotional responses with others increased, they became more likely to hold unfavorable views of help-seeking. Therefore, men with high restrictive emotionality scores in the study, reported lower future likelihood of seeking help (Good, Dell, & Mintz, 1989).

Measuring Masculinity

The Conformity to Masculine Norms Inventory (CMNI) was created to assess the extent of conformity that an individual male adheres to when it comes to actions, thoughts, and feelings that reflect masculine norms in American society (Mahalik, Locke, Ludlow, Diemer, Scott, Gottfried, & Freitas, 2003). This scale was created through the use of two focus groups consisting of both males and females with masters and doctoral students in counseling psychology. These groups met every week for 90 minutes over an

8 month period to discuss the norms identified in the literature, refine the categories necessary for the scale, and to construct items for the continuum assessing the conformity to the norms. For example, in deconstructing the norm of winning, the women group members described that they did not feel pressure to be successful nor did they feel any expectations that they had to win; whereas, male participants reported that winning was a salient message in their community and within the mainstream culture (Mahalik et. al., 2003). Therefore, winning was identified as a masculine norm of interest.

Using this process, 12 masculine norms were created: winning, emotional control, risk-taking, violence, dominance, playboy, self-reliance, primacy of work, power over women, disdain for homosexuals, physical toughness, and the pursuit of status. After these 12 were categorized, the focus groups then worked on developing ideas for each norm falling on a continuum ranging from extreme conformity to extreme non-conformity. Twelve items were created for each major norm, therefore creating 144 items. The measure was then piloted five different times with the original sample of 752 males. After the first pilot test, the norm of physical toughness was removed as well as some continuum norms resulting in a final 94 item scale (Mahalik et. al., 2003).

Parent and Moradi (2011) later created an abbreviated version called the Conformity to Masculine Norms Inventory-46 (CMNI-46). This scale contains nine major masculine norms that include: winning (6 items), emotional control (6 items), primacy of work (4 items), risk-taking (5 items), violence (6 items), heterosexual self-presentation (6 items), playboy (4 items), self-reliance (5 items), and power over women (4 items). Responses are made on a four-point scale ranging from 0 (strongly disagree) to 3 (strongly agree) for all subscales—the higher the number, the greater the conformity to

masculine norms. The average of all items in the sub-scale is then the amount of conformity for that particular category (Hammer, Heath, & Vogel, 2018).

In a general sample of 255 college-aged males, the average score was a 1.5, which falls on the lower to middle end of the hegemonic scale. This abbreviated version of the scale was created in order to provide greater efficiency at a shorter length when compared to the original measure. A confirmatory factor analysis resulted in a suggested acceptable fit of the factor structure and the Chronbach's alphas ranged from good to excellent across subclass (Parent & Moradi, 2011). The CMNI-46 was also used in a sample of 523 college football players ranging from NCAA DI to DIII institutes (Steinfeldt & Steinfeldt, 2012). The internal consistency coefficients for this particular study for each sub-scale were: winning = .76, emotional control = .86, risk-taking = .78, violence = .70, power-over women = .81, playboy = .79, self-reliance = .83, primacy of work = .72, and heterosexual self-presentation = .81. Overall, the scale reported an internal consistency coefficient of .84. In this study, the researchers found that higher levels of athletic identity were related to high conformity to all but two (i.e., emotional control, playboy) of the masculine norms tested on the CMNI-46. Therefore, this study supported the idea that as athletic identity increases, so does adherence to masculine norms (Steinfeldt & Steinfeldt, 2012).

Males and Help-Seeking Behaviors

The word vulnerable is derived from the Latin word vulnerare meaning to wound. The definition of vulnerability is then the idea of the capability of being wounded, or open to attack (Brown, 2006). Therefore, society's interpretation of vulnerability has been confusing feeling with failing and emotions with liabilities. Traditionally, anger,

aggressiveness, and hostility are all socially accepted as the male code for expression (Möller-Leimkühler, 2003). Therefore, in order to deal with shame or vulnerability, some men withdraw, hide, silence their thoughts, and keep secrets; and because of this, engaging with vulnerability becomes about the depth of their courage and strength rather than weakness. When men express vulnerability, society tends to recoil with fear because expressing emotions is seen as a taboo; however, instead of encouraging this vulnerability and strength, that fear tends to manifest into everything from disappointment to disgust due to the unknown of the situation (Brown, 2013).

Some indicators of the presence of vulnerability in young men from industrial nations include increasing rates of offending behavior, conduct disorders, and high suicide rates. Typically emotional control increases with age, so as one gets older, their outward display of vulnerability tends to disappear inward (Möller-Leimkühler, 2003). Therefore, the outward display then turns into humans who seem to be happy, healthy, optimistic, competitive, and successful; whereas internally, they could be hiding negative emotions like pessimism, anxiety, uncertainty, weakness, and/or sadness.

The concept of masculinity is typically faulted for being a heteronormative concept (relating to a worldview that heterosexuality is the preferred sexual orientation), and therefore, males often times do not seek counseling or help due to the stigma around vulnerability and intimacy when associated with males (Robertson & Fitzgerald, 1992). One in three people seeking psychological care for general mental health problems is a male (Good, Dell, & Mintz, 1989). By asking for help, it often implies loss of status, loss of control and autonomy, incompetence, dependence, and damage of identity (Connell & Messerschmidt, 2005; Möller-Leimkühler, 2003). Therefore, in order to get males to ask

for help, they first have to overcome the association that exists between expectations on masculine socialization and the expectations of men (Good, Thomson, & Brathwaite, 2005). Being in therapy asks men to both willingly ask for help and to express vulnerability, which contradicts exactly what they were socialized into throughout their life. Therefore, by entering therapy, they may feel as if their masculinity is being questioned and that they have officially lost control of their life (Good, Thomson, & Brathwaite, 2005; Möller-Leimkühler, 2003).

Young men are more likely to endorse traditional hegemonic ideologies when compared to older males and therefore, young men were less likely to seek psychological services when compared to their older male counterparts (Levant & Fischer, 1998). In a study looking at undergraduate males, the researchers found that traditional masculinity ideology influences attitudes toward help-seeking behaviors as well as the intentions to seek help (Smith, Tran, & Thompson, 2008). The authors' findings were examined within the framework of the Theory of Planned Behavior, which states that attitudes toward a given behavior are expected to contribute to intentions to engage in the behavior. Therefore, the intention to seek help was influenced by their attitudes toward help-seeking (Smith, Tran, & Thompson, 2008; Smith, 2008).

Men also tend to rely on avoidant coping skills because males are less socially integrated and therefore report fewer sources of social support. Because the male identity is categorized by competitiveness and emotional isolation, males only tend to report one confiding relationship and that being with the opposite sex (Möller-Leimkühler, 2003). However, within their social relationships, they typically only interact around external matters (e.g., sports, business, politics, hobbies) thus feelings and emotions are not

considered to be a topic for discussion (Möller-Leimkühler, 2003). Because of that, males tend to have nowhere to go with their emotions, and do not have the right tools to express those emotions; therefore, they turn to their avoidant coping strategies and take their emotions and vulnerability out through their hegemonic masculinity. The sport realm has thus created a culture in which emotions and vulnerability are stifled and instead, violence and competition are encouraged.

Males and Athletic Rehabilitation: Psychosocial Aspects of Athlete Rehabilitation

Rehabilitation adherence is a problem both in and out of athletics. In a study sampling over 450 collegiate athletic trainers, 98.3% of the athletic trainers reported poor rehabilitation adherence in some of their athletes for a sport-related injury; 98.96% reported that they had athletes who exhibited poor rehabilitation adherence; and 97.91% reported that over adherence was at least an occasional occurrence among their athletes (Granquist, Podlog, Engel, & Newland, 2014). Granquist et al. (2014) further found four main themes related to injury rehabilitation adherence: motivation to adhere (i.e., athletes who fail to buy into the philosophy usually do not succeed), development of good athletic trainer-athlete rapport, athletic trainers' perception of the coaches' role (i.e., when athletes are held accountable by their coaches, adherence is not usually increased), and the influence of the injury. Athletic trainers typically categorize rehabilitation into three biological phases: inflammatory response phase, fibroblastic repair phase, and maturation phase, and use these phases as a model to guide the treatment that they provide. Although there has been success in this method for facilitating injured athletes' physical return to the field of play, athletes' psychosocial responses to their injuries are often not considered (Clement, Granquist, & Aryinen-Barrow, 2013). Psychosocial factors include

how an athlete thinks, feels, and acts, which implies that if an athletic trainer does not look at the athlete holistically, then that athlete will be less likely to make a full recovery from an injury. There is an importance of addressing relatedness (feeling connected with another), competence (the ability to do something successfully) and autonomy (independently making your own choices) during the reintegration phase of rehabilitation in order to reduce negative moods and to have the athletes experience successful rehabilitation (Forsdyke, Smith, Jones, & Gledhill, 2016).

In a convenience sample of four male and four female athletes, researchers looked into the importance of psychosocial factors for athletic trainers (Clement, Arvinen-Barrow, & Fetty, 2015). They found that athletes predominantly react negatively to an injury, and the more negative an athlete perceives their injury to be, the more negative thoughts and emotions that athlete will have. During rehabilitation, athletes are typically frustrated and tend to seek out support from their athletic trainers. During this time, the athletes may begin to question the rehabilitation process, but seven out of the eight athletes reported that the social support they received from their athletic trainers was vital for their rehabilitation and recovery. When the athlete is ready to return to their sport, athletes typically react anxiously and nervously about re-injury but also are slightly positive. Because of these ever-changing emotions and thoughts, Clement and colleagues (2015) concluded it is important for athletic trainers to understand the impact of psycho-education in their work.

During the rehabilitation process, injured athletes are more likely to be emotionally vulnerable and therefore, there may be some cracks in their emotional integrity during the rehab process. Emotional integrity (i.e., finding athletes being

reluctant to discuss their emotions about being injured with their sporting peers and coaches) could be a significant factor for men, however, there are not many studies that look at the construct based on gender. One study found that rehabilitation with athletes suffering from severe injuries was successful when they dealt with their competition fears before returning to play (Forsdyke, Smith, Jones, & Gledhill, 2016). Another study found that females tend to report more chronic and acute stress than their male counterparts; however, this research was based off of self-reported data and the sample pool was 67% females (Dawson, Hamson-Utley, Hansen, & Olpin, 2014).

Fear of re-injury can have a major impact on the psychosocial development of athletes regardless of gender. Using a questionnaire that looks at pain-related fear of re-injury, researchers found that participants who returned to pivoting and cutting sports after having ACL reconstructive surgery with greater self-reported fear were 13 times more likely to suffer a second ACL injury in the 24 months after returning to play. They were also four times more likely to report reduced levels of activity and seven times more likely to be asymmetrical in their lower body strength (Paterno, Flynn, Thomas, & Schmitt, 2018). Similarly, another study found that fear of re-injury was associated with self-reported return to sport in that athletes reporting higher fear also reported less physical activity (Tripp, Ebel-Lam, Stanish, Brewer, & Birchard, 2007). Tripp and colleagues (2007) also found a correlation between negative affect and confidence predicting that athletes who reported more negative affect were more likely to doubt their abilities in sporting activities.

However, the fear of re-injury is not the only fear that athletes tend to be apprehensive about. In one study, participants described their experience of dealing with

the initial shock of their injury by reporting feelings of vulnerability and were anxious about losing their independence. However, their main apprehension stemmed from fear of missing practice, losing their fitness, missing out, having to play catch up, and a continuous worry of when they would be able to get back to playing. Several participants also feared that they would lose their playing time and spot on the team; however, instead of discussing their fears with their coach, many reported being hesitant to talk to the coach in fear of being labeled as ‘damaged goods’ (Tracey, 2003).

Harris, Judge, Bellar, and Bell (2011) found that male student-athletes with no prior injury experience had lower expectations of personal commitment to rehabilitation than other participants, whereas female student-athletes had higher expectations of personal commitment to injury rehabilitation when compared to males. However, female athletes with prior experience were less likely to have realistic expectations when compared to males and females without prior experience and males with prior experience. Female athletes also reported a higher expectation of receiving emotional support from their strength and conditioning coach. This higher expectation that females have when compared to males could be a result of how society gives more emotional support to females to begin with which could lead to the expectation of receiving more (Harris, Judge, Bellar, & Bell, 2011). From the same study, females also reported that it was more important to receive emotional challenge and emotional support from their strength and conditioning coaches when compared to their male counterparts. However, this data was self-reported, which leads us to question whether the males in the sample really do not need emotional support or if they were not comfortable disclosing the information unlike their female counterparts (Harris, Judge, Bellar, & Bell, 2011).

In a sample of collegiate student-athletes in Taiwan, males scored higher on hope pathways (i.e., having stronger beliefs about finding routes to the goal) and hope agencies (i.e., the perceived ability to reach a goal) when compared to the females (Lu & Hsu, 2013). In Lu and Hsu's study, women perceived receiving more emotional support than did the male counterparts. Having high hope agencies and pathways are correlated to positive rehabilitation behaviors, high subjective well-being, and positive rehabilitation beliefs. However, participants with low pathways tended to have the perception of receiving more social support, and therefore, still maintaining the high level of subjective well-being. These results indicate that females may have more social and emotional support, however, males have more confidence in getting the task done.

Motivational Climate of Rehabilitation

Three psychological phases are often described in rehabilitation: Reaction to injury, reaction to rehabilitation, and reaction to return to sport. When it comes to the reaction to the rehabilitation, the most immediate and common emotional responses included frustration, negative and poor mood states, emotional volatility, and low self-confidence (Clement, Arvinen-Barrow, & Fetty, 2015; Mankad, Gordon, & Wallman, 2009). On the other hand, the most common cognitive appraisals included questioning the process and the perceived difficulty, weighing the perceived value of the rehabilitation program, and their willingness to join the process (Clement, Arvinen-Barrow, & Fetty, 2015).

A motivational climate is defined as an environment within an achievement setting that is created by influential individuals through situational cues, expectations, feedback and rewards. There are two types of motivational climates that athletes can

perceive: mastery or performance climate. A mastery climate is defined as an environment where the emphasis is placed on individual learning, effort put forth, and self-improvement; whereas, a performance climate is defined as an environment that emphasizes ability, outperforming others, and performance outcomes (Ames, 1995).

One study found that the higher perceptions of a mastery motivational climate predicted greater levels of interest, enjoyment, and perceived competence, whereas, with higher perceptions of a performance motivational climate, there were higher perceptions of tension and pressure during rehabilitation (Brinkman-Majewski & Weiss, 2018). Brinkman-Majewski and Weiss found that athletes are more likely to enjoy rehabilitation and be adherent to their recovery schedule if they have greater feelings of competency and if they perceive the environment as one that is focused on learning and improving. On the other hand, when athletes believe they are being compared socially and penalized for errors, they feel more anxiety over their rehabilitation and ultimately lose the belief in their own autonomy and competence. Because of this heavy importance placed on the rehabilitation environment, the role of athletic trainers, when it came to social support, was amplified (Clement, Arvinen-Barrow, & Fetty, 2015).

In another study, student-athletes perceived their rehabilitation to be more focused on the physical aspect of healing and not the emotional aspect (Mankad, Gordon, & Wallman, 2009). In Mankad and colleagues' research, athletes often felt discomfort when it came to showing emotions, which was thought to show weakness. Further, athletes believed they needed to maintain a specific image, and needed to suppress negativity within a culture that emphasized positivity and strength. Based on this, student-athletes

felt that a structured process to help them mentally rehabilitate would be most beneficial for them to cope with the strong emotions that coincide with an injury.

Animal-Assisted Therapy and Masculinity

Males tend to hide injuries and not seek physical or mental health services, and this may be more evident in cases of hegemonic masculinity (Levant & Fischer, 1998). The addition of pets within a physical or mental therapy situation may help in these situations by building trust and encouraging reticent or combative patients to become open and vulnerable. Prisons and the military, which can foster the most negative aspects of hegemonic masculinity, have become test cases for this type of animal intervention.

AAT and Correctional Facilities

Evidence for the utilization of animals for therapeutic purposes dates back to as early as 1919 in custodial institutions in the USA; however, the first successful animal therapy program was established in 1975 in a United States prison by accident when an inmate at Lima State Hospital in Ohio adopted an injured sparrow. The staff witnessed considerable differences in the behavior of the inmate and the other inmates on the ward, and therefore, approved an animal therapy program (Britton & Button, 2005). After a 90 day study of comparing the differences between the patients with pets and patients without pets, they found that there was a decrease in violence, in the use of medications, and in suicide attempts in those who had the presence of the pet (Mims, Waddell, & Holton, 2017). From there, the first modern program came about in 1981 in the Washington Correction Center for Women in Washington. Since then, there have been programs implemented nationwide throughout prisons where inmates have the opportunity to train animals, mostly dogs, and then return them for adoption. These

programs have multiple advantages which include keeping inmates busy, being relatively inexpensive, and improving relations among the community (Britton & Button, 2005).

There is little research that exists on the benefits of the dog training programs on the inmates themselves, but what does exist shows promise in ameliorating inmates' behaviors. In a study done in a medium-security men's prison, puppies were assigned to inmate handlers who train the dogs for 12-18 months teaching obedience and agility (Britton & Buttons, 2005). In this qualitative study, 28 inmate participants were interviewed regarding their experiences training the dogs. The men who trained the dogs often cited that they often developed deep emotional bonds with their dogs and had trouble returning the dog once the designated time was up. Most of the inmates believed that the most important benefit they received from the program was the change that it had on their attitudes and emotions, often claiming that the dogs were therapeutic. One inmate claimed:

“It's real positive. Like I said, it changed me so far, and I know that it has changed a whole lot of others. It gives you something to look forward to. I was a selfish person, and now I do things for others. The impact of a pet, or a dog, it calms a whole lot of people down” (Britton & Button, 2005, p. 91).

Some inmates also voiced that it lowered their anger and uptightness, which are common in prison settings, and helps bring up the spirits of the inmates creating a lighter and more normalized atmosphere. The program also connected the inmates to the community in a positive way, and helped them to be viewed as more humanized by the public (Britton & Button, 2005).

In another qualitative study, the researchers looked at female inmates who had the opportunity to participate in a program where they trained service dogs for people with disabilities. Women in prison face many of the same challenges as male inmates, namely the overt mental and physical harshness that touches them every day. The researchers found that the program gave a strong incentive for self-control when frustrations were high and many inmates reported pride in accomplishing personal growth as a result. Over 76% of the participants claimed that stress was reduced through the program, and 83.9% mentioned improvements in physical as well as emotional health. Forty-five percent talked about their improved positive self-concept, and the ability to create new goals for themselves as 87.1% reported having new goals in their lives. Several women reported feeling more patient with themselves, being more positive and goal-oriented, and having a sense of being part of something bigger (Minton, Perez, & Miller, 2015).

In a study done at Brevard County Sheriff's office in Melbourne, Florida, a program exists called Paws and Stripes where inmates rescue shelter dogs to train as service dogs for veterans and police (Mims, Waddell, & Holton, 2017). This study found that inmates felt that this program provided therapeutic benefits by improving their time in jail through reducing boredom, depression, and anxiety, while also increasing the inmates' confidence levels and improving their communication skills. Another important idea that the researchers found is that this program helped the inmates learn about respect and how to trust both other humans and animals. Lastly, the researchers found that by having the presence of a nonjudgmental animal, it provided them the sense of security which made it a more comfortable environment for self-exploration. However, these programs not only give the prisoners a second chance at reform, they also give the

animals a second chance at life. In certain programs, the dogs used in the training are dogs who are saved from euthanasia and previously perceived as un-adoptable at shelters (Mims, Waddell, & Holton, 2017).

In a mixed-gender forensic psychiatric facility, a handler and therapy dog team visited about every two weeks. The participants in the program had mental health issues ranging from self-harm, childhood trauma, substance abuse, and post-traumatic stress disorder. Overall, the handler noticed six key findings: 1) the dog helped the participants feel physically and psychologically safe; 2) the participants were able to build and maintain trust in their interactions with the dog and tended to be more transparent with their emotions (i.e., participants claimed that they felt as if the dog loved them unconditionally); 3) the dog acted as a form of peer support and mutual self-help (i.e., participants claim that the dog made them feel better); 4) the dog also tended to be a source of collaboration and mutuality (i.e., different activities with the dog were beneficial to incorporate depending on the individual); 5) the dog helped facilitate empowerment, voice, and choice in the participant (i.e., helps promote behavior change); and 6) the dog behaved non-judgmentally (i.e., lived fully in the moment and connected directly to the humaneness of the individual) (Dell & Poole, 2015). Overall, the researchers found that the dog interacted with the participants in ways that humans could not. For example, a key behavior involved physical contact. Physical touch is a basic human need, however, touch is discouraged in correctional facilities and can sometimes be the source of trauma for certain individuals. Therefore, animals can “satisfy the need for physical contact and touch without the fear of the complications that accompany contact with human beings” (Robin & ten Benschel, 1985, p. 71).

AAT and Service Members

In a quasi-experimental design with a pretest, posttest, nonrandomized control group, 24 servicemen were evaluated on various occupational therapy life skills (Beck, Gonzales, Sells, Jones, Reer, & Zhu, 2012). The men were assigned to one of two group levels: the occupational therapy (OT) Life Skills program (control) and Life Skills program plus AAT (experimental). All participants attended OT Life Skills classes on stress management, communication/anger management, and healthy living for a minimum of 3 to 6 classes. The experimental group also received AAT for 30 minutes immediately after each life skills class. The researchers found no significant difference over the eight week period in mood state, stress levels, resilience, fatigue, and most measures of daily function. However, the authors reported strong anecdotal evidence that supports the value of the intervention. Several participants reported feeling more calm and at ease after working with the dogs. Several soldiers reported that they enjoyed the dog sessions, looked forward to seeing the dogs again, and regretted the conclusion of the study. Similarly, in another study looking at how dogs help veterans with post-traumatic stress disorder (PTSD), veterans reported that the most important services that the dog can do for them is licking or nudging the veterans to help them stay present, preventing panic, and putting space between veterans and strangers (Yarborough, Owen-Smith, Stumbo, Yarborough, Perrin, & Green, 2017). However, despite this positive anecdotal evidence, there is a lack of statistically significant data and research done on this topic.

AAT, Males, and the Athletic Training Room

There are currently no studies investigating the use of AAT in athletes or in the athletic training room. There are, however, some dogs used in these contexts. Currently,

athletic trainer Makina Itchkavich-Levasseur at Franklin Pierce University involves her dog during therapy sessions with athletes, and athletic trainer Terri Jo Rucinski at the University of North Carolina at Chapel Hill involves her dog in a similar manner.

At UNC, the varsity baseball team has an unconventional addition to their team in the form of a service dog named Remington, or Remi. The athletic trainer of the team, Terri Jo Rucinski, uses Remi as her psychiatric medical alert facility rehabilitation service dog (a dog who is trained to provide therapeutic interventions, medical aid, and support others with physical or psychological issues). She utilizes Remi to assist injured players recovering from surgery and throughout their rehabilitation. Remi's main duty is to help struggling teammates regain their strength and confidence during rehabilitation; however, Remi likes to help anywhere he can and can be found carrying balls in a bucket out to umpires before games, holding a hat or glove in his mouth for the national anthem, and helps opening the fridge for players to grab their Gatorade (Payne, 2017).

According to an outfielder on the team who recently had surgery, "being injured isn't really the most fun thing to go through so it was definitely fun to have Remi there with me." He also adds that he considers to have a bond with Remi similar to the bond he shares with any of his teammates (Payne, 2017). Remi's handler has been working with the baseball team for twelve years, but believes that the atmosphere has changed since Remi joined them. She reports seeing a very strong difference in student-athletes who have underwent surgeries last year, and has seen them turn the corner emotionally rather quickly (Busbee, 2017). The UNC head coach, Mike Fox, said: "[the training room is] a tough place to be sometimes, especially when you're having to be in there everyday. So any sort of good feeling, any sort of good distraction can be a good thing, sort of take

your mind off of your injury, or your long rehab, or whatever's bothering you" (Busbee, 2017).

Remi's training started when he was just days old, and learned most of the one hundred commands that he knows in a prison in West Virginia through a program that allows prisoners to work and train the puppies (Carter, 2017). Remi's handler claims that he is very intuitive and shares a story where a freshman player appeared extremely anxious his first weeks on campus, and Remi, having sensed the anxiety, anchored himself to the athlete. Later on, his teammates told the handler that Remi really helped that freshman athlete (Carter, 2017). Rucinski shares that Remington often tries to anchor himself to an opposing player before a game, and one time, Remi sat down in front of an opposing player seemingly at random. However, Rucinski later found out that the player had been taken out of the lineup. Rucinski is a believer that Remi is an expert at sensing human stress and trying to absorb it (Carter, 2017).

A current senior on the team said:

"He's helped me a lot. I had surgery in the fall of 2016. I had a sports hernia surgery, so a lot of my rehab was done with exercise balls and bands. So, he would always bring those over to me or kind of wait 'til I was done using them and then I'd throw them. It was just good having him around as kind of an encourager and just something to take your mind off an injury. It's pretty tough being injured. It's not really what you want, but having Remington there was definitely pretty cool" (Capatides, 2017).

The senior continued with a further anecdote of Remi's influence:

"I think we had one of our best semesters academically. I don't know if that's a direct correlation with Remington being here, but he takes the stress off you. Especially with classes and ballgames at the same time, there's a lot on your plate. So, being able to see a familiar face that you know is going to be there every day is just something to put a smile on your face and something to encourage you, whether you realize it or not" (Capatides, 2017).

After the interview, the baseball player picked Remi up and hugged him showing the affection that the athlete holds for the dog. The idea of showing affection and talking about emotions is something significant to note here as that is not a usual occurrence for males, like previously mentioned.

Since joining the team in the Fall of 2017 and getting a lot of media attention, that attention has since died down and few besides those close to the team know the real benefits of what Remi provides. A few accounts of an athlete's rehabilitation with Remi and one comment from Rucinski hint at the emotional and physical benefits that Remi provides, however, there is a lack of information on the true benefits that an athletic training facility dog could provide to student-athletes everywhere. Remi is the first athletic training room assistance dog in the Atlantic Coast Conference, and according to Rucinski, Remi is the only one of his kind in athletics.

Summary

There is strong evidence of dogs being beneficial to humans both physiologically and emotionally, and can have a positive effect on therapy outcomes. However, methodologically solid studies have only been performed in populations such as children

or adults with cardiovascular diseases (Beetz et. al, 2011; Friedmann et. al, 1980). The research is lacking when it comes to the benefits of canines in college-aged populations, specifically in athletes. Due to hegemonic masculinity that plagues the sport realm, vulnerability and emotions are deemed unacceptable causing a build-up of feelings that have nowhere to escape to (Kupers, 2005). Instead, the feelings cluster and build internally, and the hegemonic traits only increase and are displayed outwardly. Because of this constant cycle, and because canines have been seen to be beneficial when it comes to decreasing stress and increasing vulnerability in average populations, implementing AAT or having the presence of a canine could be extremely beneficial to enhancing a male's help-seeking behaviors (Steinbeigle, 2017). As seen through the research with male prisoners and soldiers that has shown a decrease in violence and mental health concerns, canines have an impact – whether that be directly or indirectly – in helping males come to terms with their emotions (Mims, Waddell, & Holton, 2017). Further, these findings suggest that males, particularly hegemonic males, may increase help seeking behaviors and be more engaging participants in their own rehabilitation. Therefore, because of the highly aggressive nature of sport the purpose of this study is to see if the presence of a canine impacts male athletes in rehabilitation, and in particular, hegemonic male athletes (Tjønndal, 2016; Wells, 2009b). Two main questions stem from this purpose: (1) Do canines enhance the psychosocial athletic training atmosphere? (2) Does the level of hegemonic masculinity affect a male athlete's perception of the canine-assisted therapy?

CHAPTER 3

METHODS

Given the unknown impact and prevalence of dogs in athletic training rooms, and the scarcity of such data in the literature, an exploratory research design was implemented. In order to investigate the impact of dogs in an athletic training room, particularly among hegemonic males, questionnaires were created and administered to athletes at a single selected institution.

Subjects

Following approval by the Ithaca College Institutional Review Board, a Qualtrics electronic online recruitment statement (Appendix A) was sent to the athletic training staff at Franklin Pierce University to be distributed to their athletes. This recruitment statement included a built-in implied informed consent and a series of questionnaires. Participants provided consent by continuing with the questionnaire. The questionnaires were sent via Qualtrics to approximately 452 athletes, with 95 athletes responding from the University. All participants were required to have undergone treatment in the athletic training room within the past twelve months. Four athletic trainers who work in athletics at Franklin-Pierce University also participated.

Procedures

Prior to the study, athletic trainers at Franklin Pierce University were contacted regarding their interest in the study. Following their approval, Dog Treatment Questionnaires were created using AAT questionnaires and experts in athletic training and sport psychology. Because of the scarcity of dogs in athletic training rooms, the

questionnaires could not be piloted or validated with athletes in an actual athletic training room setting. Instead, the questionnaires were piloted with an athletic team at a local college where the athletes had experience with a dog being present at practices. It was tested for readability and was adapted based on the comments from athletes.

After getting permission from the head athletic trainer at the selected school, and after getting approval from the Ithaca College Institutional Review Board (IRB), the questionnaires were sent from an email that was forwarded on by the head athletic trainer via a link to Qualtrics. The questionnaires were sent out to both males and females who had used the athletic training room services previously in the past year. All subjects were provided a basic demographics and injury questionnaire and three dog treatment questionnaires. Subjects identifying as male were provided an additional questionnaire regarding hegemonic masculinity. The questionnaires took about 15 minutes to complete, and they were completed at the athletes' discretion. The athletes had three weeks to complete the questionnaires, and a reminder email from the head athletic trainer was sent out on each Monday of each week. The athletic trainers also had a questionnaire to complete that asked about their perspective of how the dog impacted the athletic training room setting.

Instrumentation

Demographics and Injury Questionnaire

This questionnaire (Appendix B) requested basic demographics including age, sex, year in school, previous experience with dogs, sport played, past injury information, and the length of time playing sports.

Dog Treatment Questionnaires

Dog Treatment Questionnaire 1. Dog Treatment Questionnaire 1 (Appendix C) started with the question, “How would you rate your rehab experience with the dog compared to no dog?” This question was then followed by different prompts (e.g., dealing with stress, overall anxiety, overall enjoyment) where the participant can select ‘much better with dog’, ‘better with dog’, ‘not better or worse with dog’, ‘worse with dog’, or ‘much better without dog’. This questionnaire was only answered by those who had undergone rehabilitation with the dog present.

Dog Treatment Questionnaire 2. With this questionnaire (Appendix D), a statement, “Please mark the following scale regarding the presence of the dog in the athletic training room during your rehabilitation”, was followed by different prompts (e.g., the dog was simply present when I was in the athletic training room) where the participant can select ‘agree’, ‘neutral’, ‘disagree’, or ‘I don't know’. This questionnaire was only answered by those who had undergone rehabilitation with the dog present.

Dog Treatment Questionnaire 3. This questionnaire (Appendix E) was only answered by athletes who underwent rehabilitation without a dog present. This questionnaire began with the statement, “If you have no experience with the dog in the athletic training room, please answer the following questions”, which was followed by different prompts (e.g., I think a dog would be an unwelcome distraction) where the participant could select ‘agree’, ‘neutral’, ‘disagree’, or ‘I don't know’.

Conformity to Masculine Norms-46

The CMNI-46 (Appendix F) is a 46 item Likert-type measure with anchor points from 0 to 3. This scale assessed the level of conformity to nine masculine norms

including: winning, emotional control, primacy of work, risk-taking, violence, heterosexual self-presentation, playboy, self-reliance, and power over women (Parent & Moradi, 2011). Cronbach's alpha coefficients range from .78 to .89 with a median value of .82 (Parent & Moradi, 2011). Convergent validity coefficients for the subclass range from .24 to .94, while the discriminant validity coefficients range from -.03 to -.48 (Parent & Moradi, 2011). Each sub-scale was scored separately, taking the average of all the scores for the one sub-scale resulting score. The average scores for each sub-scale include: Winning = 2.41, Emotional Control = 2.40, Primacy of Work = 2.11, Risk-Taking = 2.30, Violence = 2.59, Heterosexual Self-Presentation = 2.14, Playboy = 2.23, Self-Reliance = 2.20, Power Over Women = 1.62 (Hammer, Heath, & Vogel, 2018).

Athletic Trainer Questionnaire

The athletic trainers received a separate demographics questionnaire (Appendix G) to complete. This questionnaire had two sections. Section 1 had questions such as, "How would you rate your ability to carry out athletic training services with the dog compared to no dog?" that was followed by different prompts, such as "dealing with patient anxiety" or "managing patient pain or discomfort". The athletic trainer could select 'much better with dog', 'better with dog', 'not better or worse without dog', 'worse with dog', 'much worse with dog' or 'don't know'. In section 2, a statement regarding the presence of the dog in the athletic training room was followed by different prompts (e.g., "I normally ignored the dog while it was in the athletic training room", "the dog was an unwelcome distraction"). The athletic trainer could select 'agree', 'neutral', 'disagree', or 'I don't know'. Lastly, the athletic trainers had the opportunity to provide written commentary at the end of the questionnaire. The athletic trainer who was the dog's

owner was provided a small questionnaire regarding information on the dog (Appendix H).

Data Analysis

Chi-squared analyses were completed for all three Dog Treatment Questionnaires to compare the frequencies of participant responses who favored the dog versus those who did not favor the dog. Responses that were “Much Better” or “Better” were pooled and compared to the pooled “Neutral”, “Worse”, and “Much Worse” responses. A correlation analysis was also completed to determine the relationship between the scores on the CMNI-46 and the participants’ corresponding Dog Treatment Questionnaire scores.

CHAPTER 4

RESULTS

The purpose of this study was to examine if the presence of a canine in an athletic training room impacted the psychosocial environment and hegemonic masculine athletes' help-seeking behaviors. Questionnaires were sent to 452 athletes with 95 athletes responding. Athletes were presented with an online survey that consisted of a demographics and injury questionnaire, three different questionnaires pertaining to the effectiveness of a dog being present in the athletic training room, and if the participant was male, a fifth questionnaire assessing that athlete's masculinity levels. Lastly, a sixth questionnaire was sent to the athletic trainers to gain insight from their perspectives regarding the presence of the canine in the athletic training room setting.

Subject Demographics

Of the 95 participants, 64 were female and 31 were male, with an average age of 20 years old. Athletes participated on teams ranging from men's baseball ($n = 6$), men's cross country ($n = 3$), men's football ($n = 6$), men's lacrosse ($n = 4$), men's soccer ($n = 1$), men's tennis ($n = 1$), men's track & field ($n = 3$), men's ice hockey ($n = 7$), women's basketball ($n = 5$), women's cross country ($n = 4$), women's golf ($n = 1$), women's field hockey ($n = 10$), women's lacrosse ($n = 7$), women's rowing ($n = 3$), women's soccer ($n = 8$), women's softball ($n = 6$), women's track & field ($n = 5$), women's volleyball ($n = 5$), and women's ice hockey ($n = 10$). Those who answered yes to being injured in the last twelve months ($n = 64$), had missed between 15 and 21 days of participation, and typically frequented the athletic training room four days per week.

Although no statistics were run on type of sport, there appeared to be no relationship between the participant's scores on the questionnaires and what sport they played. Also, 80% of the participants had undergone rehabilitation with a dog, and the previous experience with dogs ranged from 'I grew up with dogs' ($n = 71$), 'I currently have a dog' ($n = 6$), and 'I never had a dog' ($n = 11$).

CMNI-46 Participant Demographics

The CMNI-46 was a questionnaire used to assess the levels of hegemony in the male participants. In total, only 14 male participants completely answered the CMNI-46. These participants played on teams ranging from men's football ($n = 2$), men's baseball ($n = 2$), men's ice hockey ($n = 4$), men's cross country ($n = 1$), men's track & field ($n = 2$), men's lacrosse ($n = 2$), and men's soccer ($n = 1$). Participants reported playing their sport between 6 and 10 years, and half of the participants ($n = 7$) had been injured within the last twelve months. Missed days of participation for these athletes ranged from none ($n = 1$), between 1-7 days ($n = 2$), between 8-14 days ($n = 2$), between 2-3 months ($n = 1$), between 4-6 months ($n = 1$), and they averaged five days per week in the athletic training room. When asked about their previous experience with dogs, eight participants grew up with dogs, seven participants currently had a dog, and three participants never had a dog.

Dog Treatment Questionnaire 1

Those who answered 'yes' to partaking in rehabilitation with the presence of the dog included 50 females and 25 males. These athletes were presented with Dog Treatment Questionnaire 1. Fifty-three participants answered yes to undergoing rehabilitation in the last twelve months, with time missed ranging from greater than six

months ($n = 5$), between 4-5 months ($n = 5$), between 2-3 months ($n = 2$), between 1-2 months ($n = 4$), between 22-28 days ($n = 2$), between 15-21 days ($n = 2$), between 8-14 days ($n = 10$), between 1-7 days ($n = 18$), and none ($n = 5$). Seventy-five participants averaged four days per week in the athletic training room.

Table 1

Frequency Table for Dog Treatment Questionnaire 1. Numbers are Responses Followed by Percent of the Total.

	Much Better With Dog	Better With Dog	Not Better or Worse for Dog	Worse With Dog	Much Worse With Dog	Total
Dealing with any anxiety or nervousness about your treatment	44 62.86%	20 28.57%	6 8.57%	0 0%	0 0%	70
Your confidence in the effectiveness of treatment	31 44.93%	16 23.19%	22 31.88%	0 0%	0 0%	69
Managing your pain or discomfort	35 50.72%	23 33.33%	11 15.94%	0 0%	0 0%	69
Your adherence to rehabilitation	30 42.86%	24 34.29%	15 21.43%	1 1.43%	0 0%	70
Your attention in carrying out routine or monotonous rehab tasks	28 40.00%	17 24.29%	22 31.43%	3 4.29%	0 0%	70
Your enthusiasm to engage in rehabilitation	39 55.71%	23 32.86%	8 11.43%	0 0%	0 0%	70
Your emotional comfort or safety in the athletic training room	42 60.00%	18 25.71%	10 14.29%	0 0%	0 0%	70
Your willingness to ask the athletic training staff for help	29 41.43%	18 25.71%	23 32.86%	0 0%	0 0%	70
Your overall mood in the athletic training room	49 70.00%	19 27.14%	2 2.86%	0 0%	0 0%	70
Your willingness to go to the athletic training room to do your treatments	44 62.86%	14 20.00%	12 17.14%	0 0%	0 0%	70

Table 1, continued

	Much Better With Dog		Better With Dog		Not Better or Worse for Dog		Worse With Dog		Much Worse With Dog		Total
Your willingness to engage in new or unknown treatment techniques	32	45.71%	15	21.43%	23	32.86%	0	0%	0	0%	70
Your willingness to engage in treatment on your own time	33	47.14%	17	24.29%	20	28.57%	0	0%	0	0%	70
Your willingness to share your feelings with your athletic trainer about how your injury affects you	32	45.71%	21	30.00%	17	24.29%	0	0%	0	0%	70
Your trust in the competence of the athletic training staff	31	44.29%	16	22.86%	23	32.86%	0	0%	0	0%	70
The overall effectiveness of the athletic training treatments you receive	28	40.00%	19	27.14%	23	32.86%	0	0%	0	0%	70
Your feelings of being safe with an athletic trainer of the opposite sex	28	40.00%	13	18.57%	29	41.43%	0	0%	0	0%	70

Of the 75 who responded ‘yes’ to undergoing treatment with the presence of the dog, only 70 fully completed the Dog Treatment Questionnaires—participants 45, 46, 68, 90, and 93 did not respond (see tables 1 & 3). Participant 22 only responded to the first two demographic questions before discontinuing her responses.

A chi-squared test was performed to compare the frequencies of the participants who favored the dog versus those who did not favor the dog. Responses that were “Much Better” or “Better” were pooled and compared to the pooled “Neutral”, “Worse”, and “Much Worse” responses. As shown in Table 2, a chi-squared test resulted in fifteen of the sixteen questions from Dog Treatment Questionnaire 1 to be significant at the $p \leq 0.05$ level, meaning that significantly more participants found the experience with the dog

to be favorable versus neutral or unfavorable. Question sixteen (“your feelings of being safe with an athletic trainer of the opposite sex”) was the only question that did not significantly exceed the frequency of neutral or negative responses at $p \leq 0.05$. This means that participants believed the dog to be neither beneficial or a hindrance in feeling safe with an athletic trainer of the opposite sex.

Table 2

Chi-Squared Test Results for Dog Treatment Questionnaire 1

	χ^2	p -value
Dealing with any anxiety or nervousness about your treatment	48.057	0.000*
Your confidence in the effectiveness of treatment	9.058	0.003*
Managing your pain or discomfort	32.014	0.000*
Your adherence to rehabilitation	20.629	0.000*
Your attention in carrying out routine or monotonous rehab tasks	5.714	0.017*
Your enthusiasm to engage in rehabilitation	41.657	0.000*
Your emotional comfort or safety in the athletic training room	35.714	0.000*
Your willingness to ask the athletic training staff for help	8.229	0.004*
Your overall mood in the athletic training room	62.229	0.000*
Your willingness to go to the athletic training room to do your treatments	30.229	0.000*

Table 2, continued

	χ^2	<i>p</i> -value
Your willingness to engage in new or unknown treatment techniques	8.229	0.004*
Your willingness to engage in treatment on your own time	12.587	0.000*
Your willingness to share your feelings with your athletic trainer about how your injury affects you	18.514	0.000*
Your trust in the competence of the athletic training staff	8.229	0.004*
The overall effectiveness of the athletic training treatments you receive	8.229	0.004*
Your feelings of being safe with an athletic trainer of the opposite sex	2.057	0.151

* Significant at the 0.05 level.

Dog Treatment Questionnaire 1 was also analyzed by four subscales: Confidence (questions 2, 6, 11, 14), Effectiveness (questions 3, 5), Adherence (questions 4, 5, 8, 10, 12, 13), and Anxiety (questions 1, 7, 9, 16). These categories were selected by two groups of two researchers working independently to identify subscales. Internal consistency analyses using Chronbach's alpha statistics were run on the subscales in Dog Treatment Questionnaire 1. The questionnaire showed good internal consistency for the Anxiety subscale ($\alpha = .817$), Confidence subscale ($\alpha = .892$), Effectiveness subscale ($\alpha = .844$), and the Adherence subscale ($\alpha = .907$). A non-parametric chi-squared analysis was run to compare the frequencies of the combined much better/better answers with the neutral/worse/much worse answers. The chi-squared analyses showed that the Confidence ($\chi^2 = 9.058, p < .003$), Effectiveness ($\chi^2 = 9.058, p < .003$), and the Anxiety

($\chi^2 = 27.657, p < .000$) subscales were significant, while the Adherence subscale approached significance ($\chi^2 = 3.657, p = 0.056$). These data indicate that significantly more participants felt that the dog in the athletic training room helped decrease anxiety, increase confidence, and increase the overall treatment effectiveness of rehabilitation. A correlation analysis showed a high positive relationship with the scores on Dog Treatment Questionnaire 1 and Dog Treatment Questionnaire 2 at the $p \leq 0.01$ level ($r = 0.823$). This means that those who scored high on the first questionnaire, also scored high on the second questionnaire indicating their likability of the dog being present.

Dog Treatment Questionnaire 2

Those who answered ‘yes’ to partaking in rehabilitation with the presence of the dog included 50 women and 25 males, and all were presented with Dog Treatment Questionnaire 2. Of the 75 who responded ‘yes’ to undergoing treatment with the presence of the dog, only 70 fully completed both Dog Treatment Questionnaires (see Table 3). For Dog Treatment Questionnaire 2, two participants (29 & 77) did not answer five questions in total—all these questions were phrased in a negative manner. Questions 5, 10, 11, 12, and 13 were all reversed scored in this questionnaire.

As with Dog Treatment Questionnaire 1, Dog Treatment Questionnaire 2 results were categorized as either favorable or unfavorable responses. As shown in Table 4, a chi-squared analysis resulted in twelve of the fifteen questions from Dog Treatment Questionnaire 2 to be significant at the $p \leq 0.05$ level, indicating that significantly more participants responded favorably to the presence of the dog.

Table 3

Frequency Table for Dog Treatment Questionnaire 2. Numbers are Responses Followed by Percent of the Total.

	Agree		Neutral		Disagree		Total
The dog was simply present when I was in the athletic training room	59	84.29%	7	10.00%	4	5.71%	70
I was actively engaged with the dog when I was in the training room	55	78.57%	14	20.00%	1	1.43%	70
The dog helped me get over some of my nervousness	45	65.22%	23	33.33%	1	1.45%	69
The dog helped me ignore the pain or discomfort of treatments	45	65.22%	19	27.54%	5	7.25%	69
The dog was a bother that kept me from focusing on what I needed to do	8	11.94%	4	5.97%	55	82.09%	67
The dog helped me open up to my athletic trainer and communicate better	33	47.83%	32	46.38%	4	5.8%	69
The dog made me feel more comfortable in the training room environment	53	76.81%	14	20.29%	2	2.9%	69
The dog helped me stay on task to complete my rehabilitation treatments or exercises	30	42.86%	35	50.00%	5	7.14%	70
I felt more motivated or enthusiastic toward rehabilitation with the dog present	49	71.01%	16	23.19%	4	5.8%	69
The dog got in the way of me being serious and purposeful in my rehabilitation	8	11.76%	7	10.29%	53	77.94%	68
The dog was an unwelcome distraction	6	8.82%	3	4.41%	59	86.76%	68
The dog made me feel nervous	5	7.46%	1	1.49%	61	91.04%	67
The dog got in the way of me communicating with my athletic trainer	5	7.46%	2	2.99%	60	89.55%	67
Knowing there was a dog in the training room made it easier for me to seek treatment for a new injury or problem	34	48.57%	28	40.00%	8	11.43%	70
The dog helped create an overall positive atmosphere in the athletic training room	66	94.29%	4	5.71%	0	0%	70

Table 4*Chi-Squared Test Results for Dog Treatment Questionnaire 2*

	χ^2	<i>p</i> -value
The dog was simply present when I was in the athletic training room	32.914	0.000
I was actively engaged with the dog when I was in the training room	22.857	0.000
The dog helped me get over some of my nervousness	6.391	0.011
The dog helped me ignore the pain or discomfort of treatments	6.391	0.011
The dog was a bother that kept me from focusing on what I needed to do	27.597	0.000*
The dog helped me open up to my athletic trainer and communicate better	0.130	0.718
The dog made me feel more comfortable in the training room environment	19.841	0.000*
The dog helped me stay on task to complete my rehabilitation treatments or exercises	1.429	0.232
I felt more motivated or enthusiastic toward rehabilitation with the dog present	12.188	0.000*
The dog got in the way of me being serious and purposeful in my rehabilitation	21.235	0.000*
The dog was an unwelcome distraction	36.765	0.000*
The dog made me feel nervous	47.515	0.000*
The dog got in the way of me communicating with my athletic trainer	41.925	0.000*
Knowing there was a dog in the training room made it easier for me to seek treatment for a new injury or problem	0.057	0.811
The dog helped create an overall positive atmosphere in the athletic training room	54.914	0.000*

* Significant at the 0.05 level

Dog Treatment Questionnaire 3

There were 14 total participants who did not undergo treatment with the dog present, and therefore, answered Dog Treatment Questionnaire 3 (see table 5). Participant

15 did not answer four questions in Dog Treatment Questionnaire 3. Questions 1, 4, 10, and 11 were reverse scored.

Table 5

Frequency Table for Dog Treatment Questionnaire 3. Numbers are Responses Followed by Percent of the Total.

	Agree		Neutral		Disagree		Total
I think a dog would be an unwelcome distraction	1	7.69%	0	0%	12	92.31%	13
I think a dog would help me get over some of my nervousness of being in the athletic training room	13	92.86%	1	7.14%	0	0%	14
I think a dog would help me ignore the pain or discomfort of treatments	11	78.57%	3	21.43%	0	0%	14
I think a dog would be a bother and keep me from focusing on what I need to do	0	0%	2	14.29%	12	85.71%	14
I think a dog would help me open up to my athletic trainer and communicate better	6	42.86%	6	42.86%	2	14.29%	14
I think a dog would help me feel more comfortable in the training room environment	11	78.57%	3	21.43%	0	0%	14
I think a dog would help me stay on task to my rehab exercises	6	46.15%	6	46.15%	1	7.69%	13
I think a dog would help me in meeting my rehabilitation goals	8	61.54%	4	30.77%	1	7.69%	13
I think a dog would help me be more motivated or enthusiastic toward rehabilitation	11	78.57%	1	7.14%	2	14.29%	14
I think a dog would prevent me from being serious and purposeful in my rehabilitation	2	15.38%	2	15.38%	9	69.23%	13
I think a dog would make me feel nervous	0	0%	1	7.69%	12	92.31%	13

Table 5, continued

	Agree		Neutral		Disagree		Total
I think a dog would help me be more comfortable in communicating with my athletic trainer	7	50.00%	4	28.57%	3	21.43%	14
I think knowing there is a dog in the training room would make it easier to seek treatment for a new injury or problem	10	71.43%	3	21.43%	1	7.14%	14

As shown in Table 6, a chi-squared analysis resulted in seven of thirteen questions from Dog Treatment Questionnaire 3 to be significant at the $p \leq 0.05$ level, meaning that significantly more participants believed that the statements presented about adherence, anxiety, treatment effectiveness, and confidence would be stronger if a dog was present.

Table 6*Chi-Squared Test Results for Dog Treatment Questionnaire 3*

	χ^2	<i>p</i> -value
I think a dog would be an unwelcome distraction	9.308	0.002*
I think a dog would help me get over some of my nervousness of being in the athletic training room	10.286	0.001*
I think a dog would help me ignore the pain or discomfort of treatments	4.571	0.033*
I think a dog would be a bother and keep me from focusing on what I need to do	7.143	0.008*
I think a dog would help me open up to my athletic trainer and communicate better	0.286	0.593
I think a dog would help me feel more comfortable in the training room environment	4.571	0.033*
I think a dog would help me stay on task to my rehab exercises	0.077	0.782

Table 6, continued

I think a dog would help me in meeting my rehabilitation goals	0.692	0.405
I think a dog would help me be more motivated or enthusiastic toward rehabilitation	4.571	0.033*
I think a dog would prevent me from being serious and purposeful in my rehabilitation	1.923	0.166
I think a dog would make me feel nervous	9.308	0.002*
I think a dog would help me be more comfortable in communicating with my athletic trainer	0.000	1.000
I think knowing there is a dog in the training room would make it easier to seek treatment for a new injury or problem	2.571	0.109

* Significant at the 0.05 level.

Relationship of Dog Treatment Questionnaires

Between Dog Treatment Questionnaire 2 and 3, ten questions were very similar. Of those ten similar questions, six questions were significant at the $p \leq 0.05$ level (see table 7). This is important as Dog Treatment Questionnaire 2 asked participants who had experience with the dog, while Dog Treatment Questionnaire 3 asked participants with no dog experience to predict how they would feel if a dog was present. On both questionnaires, participants significantly rated the dog as helpful, or potentially helpful, with their nervousness, discomfort of treatments, overall comfort in the athletic training room, and enthusiasm and motivation toward their rehabilitation. This analysis shows not only did patients find the presence of the dog helpful but even those that did not have a dog present, perceived the possible benefits for their future treatment and rehabilitation.

Table 7*Item Similarity Between Dog Treatment Questionnaire 2 and 3*

Dog Treatment Questionnaire 2	<i>p</i> -value	Dog Treatment Questionnaire 3	<i>p</i> -value
The dog helped me get over some of my nervousness	0.011*	I think a dog would help me get over some of my nervousness of being in the athletic training room	0.001*
The dog helped me ignore the pain or discomfort of treatments	0.011*	I think a dog would help me ignore the pain or discomfort of treatments	0.033*
R. The dog was a bother that kept me from focusing on what I needed to do	0.000*	R. I think a dog would be a bother and keep me from focusing on what I need to do	0.008*
The dog helped me open up to my athletic trainer and communicate better	0.718	I think a dog would help me open up to my athletic trainer and communicate better	0.593
The dog made me feel more comfortable in the training room environment	0.000*	I think a dog would help me feel more comfortable in the training room environment	0.033*
The dog helped me stay on task to complete my rehabilitation treatments or exercises	0.232	I think a dog would help me stay on task to my rehab exercises	0.782
I felt more motivated or enthusiastic toward rehabilitation with the dog present	0.000*	I think a dog would help me be more motivated or enthusiastic toward rehabilitation	0.033*
R. The dog got in the way of me being serious and purposeful in my rehabilitation	0.000*	R. I think a dog would prevent me from being serious and purposeful in my rehabilitation	0.166
R. The dog made me feel nervous	0.000*	R. I think a dog would make me feel nervous	0.002*
Knowing there was a dog in the training room made it easier for me to seek treatment for a new injury or problem	0.811	I think knowing there is a dog in the training room would make it easier to seek treatment for a new injury or problem	0.109

* Significant at the 0.05 level.

Notes. R. at the beginning of a statement means that it was reverse scored

Relationship of the CMNI-46 Subscales

A correlation analysis of the CMNI-46 responses indicated a moderate positive relationship between the subscales of Self-Reliance and Emotional Control at $p \leq 0.05$ level. This means that those who prefer to solve their own problems also tend to suppress and restrict their emotions. However, the correlation analysis did not show any relationship between the Dog Treatment Questionnaire scores and any of the subscales of the CMNI-46 (see Table 8), indicating that there was no relationship between masculinity levels and the benefits they received when the dog was present. Table 9 shows the raw data of all male participants who completed the CMNI-46, as well as the Dog Treatment Questionnaires. All CMNI-46 subscales were scored out of an average of 3, while Dog Treatment Questionnaire 1 and Dog Treatment Questionnaire 2 were out of a total score of 32 and 15, respectively. A regression equation using the dog score as the dependent variable and the CMNI-46 subscales as the independent variable also showed no relationship, emphasizing the lack of relationship that exists between these two variables.

Table 8

Pearson Correlation Values Between CMNI-46 Subscales and Dog Treatment Questionnaire Scores

	Dog 1	Dog 2
CMNI-46 Subscale Winning	0.227	0.269
CMNI-46 Subscale Emotional Control	-0.206	-0.168
CMNI-46 Subscale Risk Taking	0.319	0.221
CMNI-46 Subscale Power Over Women	-0.190	-0.432
CMNI-46 Subscale Self-Reliance	-0.229	-0.294
CMNI-46 Subscale Primacy of Work	0.333	0.290
Dog 1 Questionnaire	1	0.823**

**Correlation is significant at the 0.01 level (2-tailed).

Table 9*Subscales of the CMNI-46 and the Dog Treatment Questionnaire Scores*

Subject	Winning	Emotional Control	Risk Taking	Power Over Women	Self-Reliance	Primacy of Work	Dog 1	Dog 2
4	2.00	1.83	1.40	0.00	0.60	2.00	16	14
11	1.67	1.30	2.00	1.50		2.00	32	15
14	2.00	1.30	1.60	0.75	1.20	1.50	12	8
16	3.00	2.50	1.80	0.25	1.80	2.00	22	12
17	1.50	1.33	1.80	1.25	1.00	1.25	23	10
19	1.33	1.67	1.00	0.50	1.20	1.75	7	4
24	1.50	1.00	1.60	0.25	0.80	1.25	5	8
27	1.83	1.67	1.20	0.00	0.60	1.00	32	14
33	2.17	2.00	1.80	0.50	1.40	2.00	32	10
34	2.50	1.33	1.80	0.25	0.60	3.00	31	15
51	2.83	1.00	1.40	0.50	1.00	1.75	32	15
64	2.83	2.33	1.60	0.75	1.00	1.00	5	7
78	2.00	1.67	1.60	1.50	1.00	1.75	0	-2
88	2.33	1.00	1.80	0.50	0.20	1.50	29	11

Athletic Trainer Responses

Four athletic trainers agreed to participate by completing a questionnaire, split into two parts, regarding their perception of the dog in the athletic training room. Their responses are shown in Tables 10 and 11. The small sample size prevented any statistical analyses, but the responses show a clear pattern. The athletic trainers enjoyed the dog,

and did not feel it got in their way. Instead, they felt that the presence of the dog helped when working with patients that were nervous about treatment, with their overall enthusiasm to engage with patients daily, and with their ability to create different treatment options that included the dog.

The athletic trainers were also given an opportunity to openly comment on the dog in the athletic training room. When asked about the positives of the dog, the athletic trainers claimed, “the dog helped athletes who are doing rehab or are experiencing pain,” “athletes are happy to see the dog,” “the dog creates a positive presence by exciting the athletes and showing the athletes love,” and “the dog definitely helps with the moods of our athletes.” Some negatives that were expressed included, “athletes are more happy to see the dog” [than the athletic trainers], the dog can be a “distraction when [the dog] leaves the room,” and “some athletes are afraid of dogs.”

When asked about common behaviors the dog exhibited around the athletes, the athletic trainers listed: “calmness,” “sleepy,” “engaging,” “excitement,” “playfulness,” “tranquility,” and “happy.” When asked about how the athletes acted around the dog, the athletic trainers said: “the athletes are happy to see/be around the dog,” “the athletes are happy and more willing to go through treatment,” and “excitement and joy.”

Table 10*Athletic Trainer Dog Questionnaire Part 1*

Question	Agree	Neutral	Disagree	Total
When the dog was in the training room the dog was simply present and did not specifically engage with athletic trainers or patients	0	0	4	4
When the dog was in the training room I normally engaged with the dog such as petting or talking to the dog	3	1	0	4
The dog was a bother that kept me from focusing on what I needed to do	0	0	4	4
I normally ignored the dog while it was in the training room	0	1	3	4
I sometimes directed my patient's attention toward the dog during treatments	4	0	0	4
The dog helped me and my patients communicate better	2	2	0	4
The dog made for a more relaxed training room environment	3	1	0	4
The dog helped me stay on task to complete my routine athletic trainer duties	1	3	0	4
I felt my patients were more motivated or enthusiastic toward rehabilitation with the dog present	4	0	0	4
The dog got in the way of me being serious and purposeful in carrying out my treatment duties	0	1	3	4
The dog was an unwelcome distraction	0	1	3	4
The dog made me feel nervous	0	0	4	4
The dog got in the way of me communicating with my patients	0	2	2	4
The dog helped create an overall positive atmosphere in the athletic training room	4	0	0	4

Table 11*Athletic Trainer Dog Questionnaire Part 2*

	Much Better With Dog	Better With Dog	Not Better or Worse for Dog	Worse With Dog	Much Worse With Dog	Total
Dealing with patient anxiety or nervousness about the treatment	2	2	0	0	0	4
Managing patient pain or discomfort	3	1	0	0	0	4
Your attention in carrying out treatments or routine athletic trainer duties	1	0	3	0	0	4
Your enthusiasm to engage with patients or routine athletic trainer duties	1	2	1	0	0	4
Your emotional comfort or safety in the athletic training room	1	3	0	0	0	4
Your overall mood in the athletic training room	2	2	0	0	0	4
Your communication with patients	1	0	3	0	0	4

Summary

Overall, chi-square analyses revealed fifteen of the sixteen questions in Dog Treatment Questionnaire 1, and twelve of the fifteen questions in Dog Treatment Questionnaire 2 to be significant at the $p \leq 0.05$ level, meaning that significantly more participants found the experience with the dog to be favorable versus neutral or unfavorable. A chi-square analysis also found Dog Treatment Questionnaire 3 to be significant at the $p \leq 0.05$ level for seven of the thirteen questions, meaning that significantly more participants believed that the scenarios presented would be better if a dog was present. A correlation analysis also indicated that there was a high positive relationship with the scores on Dog Treatment Questionnaire 1 and Dog Treatment Questionnaire 2 at the $p \leq 0.01$ level ($r = 0.823$). However, a correlation analysis did not show a relationship between the Dog Treatment Questionnaire scores and any of the subscales of the CMNI-46. Lastly, the responses from the participating athletic trainers reinforced the idea that the presence of the dog only enhanced the psychosocial atmosphere in the athletic training room.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine if the presence of a canine in an athletic training room impacts the psychosocial environment, and hegemonic masculine athletes' help-seeking behaviors. Questionnaires were sent to 452 athletes with 95 athletes responding. Athletes were presented with an online survey that consisted of a demographics and injury questionnaire, three different questionnaires pertaining to the effectiveness of a dog being present in the athletic training room, and if the participant was male, a fifth questionnaire assessing that athlete's masculinity levels. Lastly, a sixth questionnaire was sent to the athletic trainers to gain insight from their perspectives regarding the presence of the canine in the athletic training room setting. It was hypothesized that canines would enhance the psychosocial athletic training room atmosphere. This hypothesis was supported. It was also hypothesized that the hegemonic masculinity levels would affect a male athlete's perception of the canine-assisted therapy. This hypothesis was not supported.

The Psychosocial Atmosphere

Results from both Dog Treatment Questionnaires supported the hypothesis that dogs would provide a better psychosocial atmosphere in the athletic training room. Fifteen out of sixteen statements in Dog Treatment Questionnaire 1, and twelve out of fifteen statements in Dog Treatment Questionnaire 2 were significant, indicating that the overall atmosphere was enhanced by the dog being present. Examination of those participants who did not prefer the dog revealed no explanatory information about the

dislike of the dog's presence. The sixteenth statement in Dog Treatment Questionnaire 1 ("your feelings of being safe with an athletic trainer of the opposite sex") was not significant, meaning that participants believed the dog to be neither beneficial nor a hindrance in feeling safe with an athletic trainer of the opposite sex. One study found that both male and female athletes preferred the same-sex athletic trainer for general medical conditions, injuries to the mid-body, and gender-specific injuries and conditions; however, there was no preference when it came to athlete comfort levels when talking about psychological problems (Drummond, Hostetter, Laguna, Gillentine, & Del Rossi, 2007). In this current study, there were two female and two male athletic trainers. This could be a reason for the lack of significance for the sixteenth statement, as athletes had availability to both genders, already enhancing their comfort levels without the presence of the dog.

This study also found that the presence of the dog significantly decreased anxiety, increased adherence, and increased confidence in athletes undergoing rehabilitation. One possible reason for this is that the dog could act as a distraction from unpleasant treatments; neither the athletes nor the athletic trainers in this study noted any negative distractions from the dog. The subscale for treatment effectiveness was not significant, however, it approached significance, suggesting that with a larger sample size significance could possibly have been reached.

When examining why the dog significantly improved athletes' experiences in regards to the anxiety, confidence, and adherence subscales, there is a gap in the literature. Previous research indicates that dogs can help decrease cortisol in stressful situations, increase neurochemicals associated with relaxation and bonding, and increase

oxytocin and dopamine; however, there is no significant research examining why dogs have this effect (Beetz, Kotrschal, Hediger, Turner, & Uvnäs-Moberg, 2011; Charnetsky, Riggers, & Brennan, 2004; Odendaal & Meinties, 2003). Some researchers have speculated it to be related to a dog's similarities to newborns. There seems to be a positive feedback loop that exists when a mother and her baby stare into each others' eyes. For example, when a mother stares into her baby's eyes, the baby's oxytocin levels rise, causing the infant to stare back into his/her mother's eyes, resulting in a release of oxytocin in the mother (Kaplan, 2017).

There are some data with dogs to support this feedback loop. When a dog and its owner spend time looking into each other's eyes, it was found that both female and male dogs experienced a 130% rise in oxytocin levels, and both male and female owners experienced a 300% increase (Nagasawa, Ogawa, Mogi, & Kikusui, 2017). This finding led the researchers to conclude that human-dog interactions can elicit the same type of oxytocin feedback loop as seen in mothers and their infants. This feedback loop might help to explain why humans feel so close to their dogs. However important this study might be, there is no other formal research on the topic. One limitation of these findings may be that dogs also tend to associate mutual gazing as a sign of food or play time, both of which are known to increase oxytocin levels (Grimm, 2017).

On the other hand, dog benefits to humans might be rooted in the human-dog maturation process. Dogs have always provided protection, helped in hunting, and sniffed out potential dangers, while humans have provided dogs with food and shelter; thus, creating a 'pack mentality' that includes humans (Savishinsky, 1983; Wilson, 1984, 1993). Despite this union between dogs and humans, there remains limited evidence

explaining why dogs might help with anxiety, confidence, and adherence in rehabilitation.

Regardless of the underlying mechanism, in the current study, the dog in the athletic training room did enhance the psychosocial atmosphere. However, these findings are limited by the response rate, the cross-sectional design, potential selection bias, and the lack of validation in the questionnaires used. There was a 21% response rate, as 95 athletes responded out of 452 athletes who received emails. No attempt was made to determine why potential participants did not respond, but selection bias is possible. Online surveys like the ones employed in the current study, leave it completely up to the individual to select him/herself for participation. Participants must first have read and acknowledge the email they received, and then devoted time to take the survey. Some of the current participants began taking the survey and then stopped, perhaps because it took too much time. Those stopping the hegemonic masculinity questionnaire may have been put off or offended by the questions. Those who did complete the study may have had a particular affection for dogs or a particular experience in the athletic training room, and thus may have been more inclined to participate.

The Dog Treatment Questionnaires were developed based on previous physical therapy questionnaires, prior research on canine-assisted therapy, as well as input from athletic trainers and sport psychology experts. Pilot work by the athletic trainer and owner of the dog used in the current study was also considered. The questionnaires were tested for readability and understanding with a particular group of athletes that were familiar with having dogs around their sport training facility. However, given the rarity of

dogs in athletic training room settings, there was no attempt to pilot the questionnaires with actual users of canine-assisted therapy in an athletic training room.

Hegemony and Canines

It was hypothesized that the hegemonic masculinity levels would affect a male athlete's perception of the canine-assisted therapy. This hypothesis was not supported. Analyses showed that there was no relationship between the scores on the Dog Treatment Questionnaires with any of the subscales on the CMNI-46. Research has shown that by asking for help, men often perceive it as an act of incompetence and dependency, thus damaging their identity (Connell & Messerschmidt, 2005; Möller-Leimkühler, 2003). Because of this, female athletes are likely more open to expressing their needs when it comes to competency and overall motivation during rehabilitation (Bejar, Raabe, Zakrajsek, Fisher, & Clement, 2019).

However, these findings are limited by numerous factors including response rates, range restriction, and attrition rates. Only 14 subjects completed the CMNI-46 questionnaire, and these responses also suffered from range restriction. A very small range of scores existed on both the CMNI-46 and the Dog Treatment Questionnaires, which makes finding meaningful associations difficult. This is important as the majority of the participants' average in their scores for their masculinity levels, meaning that most of the participants did not move to one side or the other on the scale. This could be for a multitude of reasons, but Franklin-Pierce University is a small school with a little more than 2,000 students and 26 varsity teams on campus. Only 19 teams participated in this study, with a maximum participation of 10 athletes from one team. This means that the school is very homogenous, especially with about 70% of the total school population

being Caucasian (Quick Facts, n.d.). These may be potential reasons as to why the range was so homogenous. It is also noteworthy that over half of the males in the study (17 of 31) did not complete or start the CMNI-46 questionnaire. Due to this limited sample size and the homogenous scores, it is hard to derive any statistical significance or meaningfulness from the data.

The Benefits of a Working Dog

The dog used in this current study, Saki, is the pet of an assistant athletic trainer at Franklin-Pierce University. The dog is present in the athletic training room one to three times per week, and the athletes are used to the dog's presence. The athletic trainer tries to incorporate Saki in rehabilitation treatments, and perceives that this benefits the athletes as it allows them to focus on something other than their injury or pain. The athletic trainers' written responses supported the improved psychosocial atmosphere that the canine brought to the athletic training room. Their responses also support the anecdotal evidence that the University of North Carolina's baseball team experienced, including positive change in the atmosphere since a dog joined the team. At UNC, the athletic trainer dog owner has reported seeing a positive difference in student-athletes who have completed surgeries, and has seen these athletes emotionally recover more quickly (Busbee, 2017; Capatides, 2017; Carter, 2017; Payne, 2017). Additionally, research has shown that athletes respond well when athletic trainers' focus on both the physical and mental side of rehabilitation, and therefore, athletic trainers have begun to utilize therapy dogs as a way to facilitate better athlete mental health (Bejar, Raabe, Zakrajsek, Fisher, & Clement, 2019; Diggs, 2019).

One interesting comparison is the type of dog used in both of these athletic training rooms. At UNC, Remington is a trained service dog, whereas, at Franklin-Pierce University, Saki is the athletic trainer's pet with an unknown training history. This could potentially be of importance as it calls into question of whether an active (integrated into rehabilitation) or passive (simply there in the room) dog is more beneficial, and if that could ultimately effect the relationship that seemed nonexistent between the dog and the male participants in this current study. Remington, at UNC, can retrieve drinks for the athletes, provides emotional support during treatments, can carry a bucket of balls out to the field, as well as 100 other different commands (Maisano, n.d.). On the other hand, Saki is able to fetch balls and is sometimes incorporated into treatment activities, however, she is usually there just to serve as an emotional support animal and is not actively involved in the process of rehabilitation. How the nature of training may impact the dog's effectiveness is unknown, and there is no known research looking at dog training differences.

Seven of the thirteen questions from Dog Treatment Questionnaire 3 were significantly positive. Dog Treatment Questionnaire 3 was a questionnaire that asked those participants who had not undergone rehabilitation with the presence of the dog, to predict how they would feel if a dog was present during rehabilitation. This is meaningful because these participants had never experienced a dog during rehabilitation, yet their responses were very similar to the reported responses by the athletes who had actually been with a dog in the training room. Predicted effects are similar to expectation effects that are essential to the placebo response. Thus, the positive effects with the dog simply could be a self-fulfilling prophecy, as these participants are now already predisposed to

believing that the dog helps. When undergoing treatment in the presence of a dog, they may already be inclined to believe in these positive effects, which is dependent on the participant's belief in a specific treatment.

In this study, the dog appeared to enhance the environment and psychosocial atmosphere; however, the nature of the study cannot determine if these enhancements can be specifically attributed to the dog. Moreover, this study cannot determine the biological and psychological basis for these effects. On the other hand, whether the dog is actually the reason behind the enhancement in the psychosocial atmosphere or not, the dog does not seem to negatively impact the athletic training room environment.

Summary

The purpose of this study was to examine if the presence of a canine in an athletic training room impacts the psychosocial environment, and hegemonic masculine athletes' help-seeking behaviors. Questionnaires were sent to 452 athletes with 95 athletes responding. Athletes were presented with an online survey that consisted of a demographics and injury questionnaire, three different questionnaires pertaining to the effectiveness of a dog being present in the athletic training room, and if the participant was male, a fifth questionnaire assessing that athlete's masculinity levels. Lastly, a sixth questionnaire was sent to the athletic trainers to gain insight from their perspectives regarding the presence of the canine in the athletic training room setting. It was hypothesized that canines would enhance the psychosocial athletic training room atmosphere. This hypothesis was supported as statistical analyses led to the conclusion that dogs can provide a better psychosocial atmosphere in an athletic training room; however, there is little research examining why this is. It was also hypothesized that the

hegemonic masculinity levels would affect a male athlete's perception of the canine-assisted therapy. This hypothesis was not supported as analyses showed that there was no relationship between the scores on the Dog Treatment Questionnaires and the subscales on the CMNI-46. Despite this, the current data support the use of a comfort dog in an athletic training room as a way to enhance the rehabilitation atmosphere. Further, there was no evidence of any possible detrimental effects of the dog such as an unwanted distraction or fear of the dog. This latter statement must be taken with caution, however, as the low response rate may have been selectively biased against negative responses.

CHAPTER 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine if the presence of a canine in an athletic training room impacts the psychosocial environment and hegemonic masculine athletes' help-seeking behaviors. Questionnaires were sent to 452 athletes with 95 athletes responding. Athletes were presented with an online survey that consisted of a demographics and injury questionnaire, three different questionnaires pertaining to the effectiveness of a dog being present in the athletic training room, and if the participant was male, a fifth questionnaire assessing that athlete's masculinity levels. Lastly, a sixth questionnaire was sent to the athletic trainers to gain insight from their perspectives regarding the presence of the canine in the athletic training room setting.

It was hypothesized that canines would enhance the psychosocial athletic training room atmosphere. This hypothesis was supported. Overall, chi-square analyses revealed fifteen of the sixteen questions in the Dog Treatment Questionnaire 1, and twelve of the fifteen questions in Dog Treatment Questionnaire 2 to be significant at the $p \leq 0.05$ level, meaning that significantly more participants found the experience with the dog to be favorable versus neutral or unfavorable. A chi-square analysis also found Dog Treatment Questionnaire 3 to be significant at the $p \leq 0.05$ level for seven of the thirteen questions, meaning that significantly more participants believed that the scenarios presented would be stronger if a dog was present.

A correlation analysis also indicated that there was a high positive relationship with the scores on Dog Treatment Questionnaire 1 and Dog Treatment Questionnaire 2 at the $p \leq 0.01$ level ($r = 0.823$). However, a correlation analysis did not show a relationship between the dog treatment questionnaire scores and any of the subscales of the CMNI-46. Lastly, athletic trainers' responses reinforced the idea that the presence of the dog only enhanced the psychosocial atmosphere in the athletic training room.

Despite these positive findings, there is little existing research that explains the dog-human relationship. There is speculation about dog similarities to newborns, the increase in oxytocin levels, and the relationship dogs had with our ancestors; however, there is no strong evidence to support these speculations (Kaplan, 2017; Nagasawa, Ogawa, Mogi, & Kikusui, 2017; Savishinsky, 1983; Wilson, 1984, 1993). Regardless, the findings in this study were limited by a low response rate (21%), a cross-sectional design, potential selection bias, and a lack of validation in the questionnaires used.

It was also hypothesized that the hegemonic masculinity levels would affect a male athlete's perception of the canine-assisted therapy. This hypothesis was not supported. A correlation analysis did not show any relationship between the Dog Treatment Questionnaire scores and any of the subscales of the CMNI-46. However, this data was significantly limited due to the small response rate, as well as the homogenous range of scores.

Despite a lack of strong evidence in the existing literature, the anecdotal evidence from the athletic trainers at Franklin-Pierce University, and the responses to the Dog Treatment Questionnaire 3 from participants who had never undergone rehabilitation with a dog indicated the potential positive effects of a dog's presence. These results

strengthen the belief about how a dog might benefit an athletic training room setting, as well as an athlete's rehabilitation.

Conclusions

The results of this study yielded the following conclusions:

1. Dogs can enhance the psychosocial environment of an athletic training room.
2. Dogs can decrease athlete anxiety, increase confidence, and increase adherence within rehabilitation.
3. The benefits of a dog's presence are likely to be expected by athletes.
4. The dog had no differential effect on the hegemonic male athletes undergoing rehabilitation.

Recommendations

The following are recommendations for further study:

1. An experimental study, with an intervention, may be an important follow-up study to examine changes the athletes' experienced before and after the dog was introduced in the athletic training room, and to better understand if participant perceptions could be all that is necessary to change attitudes toward the intervention.
2. Recruiting a larger number of males to accurately assess the hypothesis regarding canine-assisted therapy and hegemonic masculinity.
3. Recruiting a larger sample size that includes athletes from different demographics.
4. Finding other locations that have the same or similar intervention to examine the presence of a dog at different sites.
5. Assessing whether the type of dog (e.g., service dog, therapy dog) has any differentiating effects and,

6. Assessing the nature, severity, and time lost due to injury. The average of days missed because of an injury in this specific study was 15-21 days which indicates a moderate to low level injury. Therefore, further research the type and severity of injury, and how each may influence the findings.

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APPENDICES

APPENDIX A

RECRUITMENT STATEMENT

Hello – We are studying the presence of a dog in the Athletic Training room. In the following survey, you will be given questionnaires asking about your own experience with the dog, both positive and negative. Please answer it as honestly as you can. You can skip questions or withdraw from the survey at any time. The survey should take between 10-15 minutes to complete.

By going forward and taking the survey, I am acknowledging that I am 18 years of age or older.

If you have any questions, please feel free to contact me at:
Paige Sokoloff, Graduate Student
Department of Exercise and Sport Sciences
psokoloff@ithaca.edu

Or my faculty advisor at:
Jeffrey Ives, Professor and Chair Graduate Program, Department of Exercise and Sport Sciences
(607) 274-1751, jives@ithaca.edu

APPENDIX B**DEMOGRAPHICS QUESTIONNAIRE**

1. Age:
 - a. 18
 - b. 19
 - c. 20
 - d. 21
 - e. 22
 - f. Other

2. Sex:
 - a. Male
 - b. Female

3. Year in School:
 - a. First Year
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Graduate Student

4. Sport (if more than one, just pick one): (drop down menu)
Men's Baseball, Men's Basketball, Men's Cross Country, Men's Fencing, Men's Football, Men's Golf, Men's Lacrosse, Men's Soccer, Men's Swimming & Diving, Men's Tennis, Men's Track & Field, Men's Wrestling, Men's Ice Hockey, Women's Basketball, Women's Cross Country, Women's Fencing, Women's Golf, Women's Field Hockey, Women's Gymnastics, Women's Lacrosse, Women's Rowing, Women's Soccer, Women's Softball, Women's Swimming & Diving, Women's Tennis, Women's Track & Field, Women's Volleyball, Women's Ice Hockey

5. Length of time playing current sport:
 - a. 0-5 years
 - b. 6-10 years
 - c. 11-15 years
 - d. 15+ years

6. Previous experience with dogs: (can pick more than one)
 - a. I grew up with dogs
 - b. I currently have a dog
 - c. I have ever had a dog

7. Have you been injured in the last 12 months? (if no, skips to question 9)
 - a. Yes
 - b. No

8. How many days of participation have you missed?
 - a. None
 - b. Between 1-7 days
 - c. Between 8-14 days
 - d. Between 15-21 days
 - e. Between 22-28 days
 - f. Between 1-2 months
 - g. Between 2-3 months
 - h. Between 4-6 months
 - i. Greater than 6 months

9. During the time of injury, how many days per week do you use the Athletic Training Room?
 - a. 0
 - b. 1
 - c. 2
 - d. 3
 - e. 4
 - f. 5
 - g. 6
 - h. 7

APPENDIX C

DOG TREATMENT QUESTIONNAIRE 1

1. Have you undergone any athletic training rehabilitation in the presence of the dog? If yes, go to questions 2 and 3. If not, go to question 4.
2. How would you rate your rehabilitation experiences with the dog compared to no dog? If all your experiences have included the dog, and none without the dog, go to question 3.

	Much Better With Dog	Better With Dog	Not Better or Worse With Dog	Worse With Dog	Much Worse With Dog
Dealing with any anxiety or nervousness about your treatment					
Your confidence in the effectiveness of treatment					
Managing your pain or discomfort					
Your adherence to rehabilitation					
Your attention in carrying out routine or monotonous rehab tasks					
Your enthusiasm to engage in rehabilitation					
Your emotional comfort or safety in the athletic training room					
Your willingness to ask the athletic training staff for help					
Your overall mood in the athletic training room					

Your willingness to go to the athletic training room to do your treatments					
Your willingness to engage in new or unknown treatment techniques					
Your willingness to engage in treatment on your own time					
Your willingness to share your feelings with your athletic trainer about how your injury affects you					
Your trust in the competence of the athletic training staff					
The overall effectiveness of the athletic training treatments you receive					
Your feelings of being safe with an athletic trainer of the opposite sex					

APPENDIX D

DOG TREATMENT QUESTIONNAIRE 2

3. Please mark the following scale regarding the presence of the dog in the Athletic Training room during your rehabilitation.

	Agree	Neutral	Disagree	I Don't Know
The dog was simply present when I was in the athletic training room				
I was actively engaged with the dog when I was in the training room				
The dog helped me get over some of my nervousness				
The dog helped me ignore the pain or discomfort of treatments				
The dog was a bother that kept me from focusing on what I needed to do				
The dog helped me open up to my athletic trainer and communicate better				
The dog made me feel more comfortable in the training room environment				
The dog helped me stay on task to complete my rehabilitation treatments or exercises				
I felt more motivated or enthusiastic toward rehabilitation with the dog present				
The dog got in the way of me being serious and purposeful in my rehabilitation				
The dog was an unwelcome distraction				
The dog made me feel nervous				
The dog got in the way of me communicating with my athletic trainer				
Knowing there was a dog in the training room made it easier for me to seek treatment for a new injury or problem				
The dog helped create an overall positive atmosphere in the athletic training room				

APPENDIX E

DOG TREATMENT QUESTIONNAIRE 3

4. If you have no experience with the dog in the athletic training room, please answer the following questions.

	Agree	Neutral	Disagree	I Don't Know
I think a dog would be an unwelcome distraction				
I think a dog would help me get over some of my nervousness of being in the athletic training room				
I think a dog would help me ignore the pain or discomfort of treatments				
I think a dog would be a bother and keep me from focusing on what I need to do				
I think a dog would help me open up to my athletic trainer and communicate better				
I think a dog would help me feel more comfortable in the training room environment				
I think a dog would help me stay on task to my rehab exercises				
I think a dog would help me in meeting my rehabilitation goals				
I think a dog would help me be more motivated or enthusiastic toward rehabilitation				
I think a dog would prevent me from being serious and purposeful in my rehabilitation				
I think a dog would make me feel nervous				
I think a dog would help me be more comfortable in communicating with my athletic trainer				
I think knowing there is a dog in the training room would make it easier to seek treatment for a new injury or problem				

APPENDIX F

CONFORMITY TO MASCULINE NORMS-46 (CMNI-46)

Will appear if participant chose yes to male:

	Strongly Agree	Agree	Disagree	Strongly Disagree
In general, I will do anything to win				
If I could, I would frequently change sexual partners				
I hate asking for help				
I believe that violence is never justified				
Being thought of as gay is not a bad thing				
In general, I do not like risky situations				
Winning is not my first priority				
I enjoy taking risks				
I am disgusted by any kind of violence				
I ask for help when I need it				
My work is the most important part of my life				
I would only have sex if I was in a committed relationship				
I bring up feelings when talking to others				
I would be furious if someone thought I was gay				
I don't mind losing				
I take risks				
It would not bother me at all if someone thought I was gay				
I never share my feelings				
Sometimes violent action is necessary				
In general, I control the women in my life				
I would feel good if I had many sexual partners				
It is important for me to win				

I don't like giving all my attention to work				
It would be awful if people thought I was gay				
I like to talk about my feelings				
I never ask for help				
More often than not, losing does not bother me				
I frequently put myself in risky situations				
Women should be subservient to men				
I am willing to get into a physical fight if necessary				
I feel good when work is my first priority				
I tend to keep my feelings to myself				
Winning is not important to me				
Violence is almost never justified				
I am happiest when I'm risking danger				
It would be enjoyable to date more than one person at a time				
I would feel uncomfortable if someone thought I was gay				
I'm not ashamed to ask for help				
Work comes first				
I tend to share my feelings				
No matter what the situation I would never act violently				
Things tend to be better when men are in charge				
It bothers me when I have to ask for help				
I love it when men are in charge of women				
I hate it when people ask me to talk about my feelings				
I try to avoid being perceived as gay				

APPENDIX G

ATHLETIC TRAINER QUESTIONNAIRE

1. Have you engaged in treating any athletes or carrying out routine athletic training tasks in the training room while the dog has been present?
Yes No
2. If you answered yes, please complete the rest of this form. If no, you may close out this survey.
3. How would you rate your ability to carry out athletic training services with the dog compared to no dog?

	Much Better With Dog	Better With Dog	Not Better or Worse With Dog	Worse With Dog	Much Worse With Dog	Don't Know
Dealing with patient anxiety or nervousness about the treatment						
Managing patient pain or discomfort						
Your attention in carrying out treatments or routine athletic trainer duties						
Your enthusiasm to engage with patients or routine athletic trainer duties						
Your emotional comfort or safety in the athletic training room						
Your overall mood in the athletic training room						
Your communication with patients						

4. Please complete the following scale regarding the presence of the dog in the athletic training room during times you were providing treatments or engaging in other athletic trainer duties

	Agree	Neutral	Disagree	I Don't Know
When the dog was in the training room the dog was simply present and did not specifically engage with athletic trainers or patients				
When the dog was on the training room I normally engaged with the dog such as petting or talking to the dog				
The dog was a bother that kept me from focusing on what I needed to do				
I normally ignored the dog while it was in the training room				
I sometimes directed my patient's attention toward the dog during treatments				
The dog helped me and my patients communicate better				
The dog made for a more relaxed training room environment				
The dog helped me stay on task to complete my routine athletic trainer duties				
I felt my patients were more motivated or enthusiastic toward rehabilitation with the dog present				
The dog got in the way of me being serious and purposeful in carrying out my treatment duties				
The dog was an unwelcome distraction				
The dog made me feel nervous				
The dog got in the way of me communicating with my patients				

The dog helped create an overall positive atmosphere in the athletic training room				
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5. From your perspective, please provide what you think is both positive and negative about the presence of the dog?

6. When the dog is around the athletes, what sort of common behaviors does the dog exhibit?

7. When the dog is around the athletes, what sort of common behaviors do the athletes exhibit?

APPENDIX H

HANDLER OF THE DOG QUESTIONNAIRE

1. Is your canine a:
 - a. Service Dog
 - b. Therapy Dog
 - c. Other: _____

2. Based off of your answer above, please elaborate on the sort of skills your canine provides for the athletes.

3. How often is the canine around the athletes?

4. When the canine is around the athletes, what sort of common behaviors does the canine exhibit?

5. When the canine is around the athletes, what sort of common behaviors do the athletes exhibit?