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The Relationship Between General Anxiety, Social Physique Anxiety, and Body Image in
Collegiate Athletes and Non-Athletes

A Thesis

Presented to the Faculty of the
Department of Sports Medicine
West Chester University
West Chester, Pennsylvania

In Partial Fulfillment of the Requirements for the
Degree of
Master of Science

By

Jessica Nugent LAT, ATC

May 2020

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Abstract

The Relationship Between General Anxiety, Social Physique Anxiety, and Body Image in Collegiate Athletes and Non-Athletes

By Jessica Nugent

Chairperson: Lindsey Keenan, PhD, LAT, ATC

Context: Due to the clinical significance, it is important that anxiety is identified early in collegiate athletes. Unlike the extensive amount of research done conducted on mental health in the general population, there is minimal research examining the mental health of athletes. The relationship between general anxiety (GAD), social physique anxiety (SPA), and body image (BI) in this population has not been studied. Objective: To examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athletes.

Design: Cross-sectional quantitative study. Setting: One NCAA Division II University.

Participants: Three hundred and eleven students participated in this study. Interventions: Participants completed surveys electronically during the fall semester of the 2019-2020 academic year. Measures included the Generalized Anxiety Disorder 7-item (GAD-7) scale, Social Physique Anxiety Scale (SPAS), Multidimensional Body-Self Relations Questionnaire (Appearance Evaluation; MBSRQ-AE), and Weight Pressures in Sport (WPS) questionnaire.

Main Outcome Measures: GAD-7, SPAS, MBSRQ-AE, and WPS mean scores. Results: A significant, negative relationship was found between SPA and BI satisfaction in all groups. There was no significant difference in mean WPS scores ($p=.067$) between male and female athletes, but males did have a higher mean score ($p=2.15$) than females ($p=1.84$). Conclusion: These findings support previous research on the topics discussed and assist in filling a gap in research

being these relationships have never been studied before in this population. These findings may provide medical professionals in the fields of sports medicine and sports psychology a better understanding of the relationship between these constructs. Word Count: 249.

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CHAPTER I

INTRODUCTION

Mental health, defined by The World Health Organization, is more than the absence of a mental illness (WHO, 2019). Mental health is “a state of well-being in which each individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2019).

Anxiety is a common condition that influences a person’s mental health and can have both short-term and long-term physical effects on the body (Toussaint et al., 2020). Due to the clinical significance, it is important that anxiety is identified early in the diagnostic process (Toussaint et al., 2020). The most prevalent type of mental health disorders are anxiety disorders affecting 30% of adults in the United States (Kessler et al., 2005).

Generalized anxiety disorder (GAD) is a common type of anxiety disorder and has a prevalence rate of 5.2% in those aged 18 to 64 (Kessler, Petukhova, Sampson, Zaslavsky, Wittchen, 2012). In 2006 Spitzer et al. developed the General Anxiety Disorder scale (GAD-7), which is a 7-item questionnaire that measure the level of clinical anxiety symptoms, and cutoff scores to categorize scores into severity levels (Spitzer et al., 2006). The cutoff scores for the general population are as follows: 5 is mild, 10 is moderate, and 15 is severe (Spitzer, Kroenke, Williams, & Löwe, 2006). Social physique anxiety is defined as “the fear of one’s physique being negatively evaluated by others” (Hart, Leary, & Rejeski, 1989). Social physique anxiety is a subtype of social anxiety which results from a person feeling as though their physique is being evaluated by another (Hart, Leary, & Rejeski, 1989).

Unlike the extensive amount of research done regarding mental health in the general population, there is minimal research looking at the mental health of athletes (Sarac, Sarac,

Pedroza, & Borchers, 2018). In just the United States alone, there are about 2.5 million collegiate student-athletes participating in sport each year (NAIA, 2017; NCAA, 2016). Due to the emphasis put on how they look in their uniforms, these athletes experience a higher level of social physique anxiety when compared to sports such as soccer, basketball, and lacrosse that wear a uniform that is not as revealing nor does the score depend on how they look (Haase & Prapavessis, 2001). The social physique anxiety athletes experience can be so strong that it deters them from participating in sport (Haase & Prapavessis, 2001). Athletes have not one, but two “ideal” body images (Krane, Waldron, Michalenok, Stiles-Shiple, 2001). Athletes have an athletic ideal body image and a social ideal body image (Krane, Waldron, Michalenok, Stiles-Shiple, 2001). A study done looking at 212 college students found that males had a lower mean score on the social physique anxiety scale compared to females indicating that males experience lower levels of SPA than females (McLester, Hicks, Miller, & McLester, 2018).

Schilder in 1935 defined body image as “an individual’s perception of his or her own body”. Body dissatisfaction is having negative thoughts and feelings about one’s own body (Grogan, 2008). A person’s body image, whether they be satisfied or dissatisfied, can change depending on the setting or situation they are in (Krane, Waldron, Michalenok, Stiles-Shiple, 2001). Davison and McCabe found that women are not only more likely to report higher levels of social physique anxiety but are also more likely to report that this anxiety influences their behaviors when compared to men (2005). Although social physique anxiety prevalence is higher in women than men, a study done in 2002 by Russell found that men who experience high levels of social physique anxiety also experience high levels of body dissatisfaction and low levels of self-esteem.

Pressures athletes experience can come from a multitude of sources such as parents, coaches, fans, teammates, society, uniforms, etc. A study that looked at 96 elite athletes around the age of 14 years old found that higher social pressures from the athlete's sports environment resulted in higher sports-related body dissatisfaction (Krentz & Warschburger, 2011). The study done in 2010 by Reel, SooHoo, Greenleaf, and Carter was the creation of the 16-item WPS-F questionnaire. The purpose of the study was to create an assessment tool that can be used for female athletes to assess sport-specific weight pressures and identify frequencies of these pressures (Reel, SooHoo, Greenleaf, & Carter, 2010). Over 200 Division I female athletes took the 20-item WPS-F which was modified to 16 items at the conclusion of this study (Reel, SooHoo, Greenleaf, & Carter, 2010). A 14-item Weight Pressures in Sport – Males questionnaire was later developed in 2011 by Galli, Reel, Petrie, Greenleaf, and Carter. The questionnaire started with 20 items but was modified to 14 items (Galli, Reel, Petrie, Greenleaf, & Carter, 2011).

The purpose of this study is to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athlete college students. The design of this study was a cross-sectional quantitative study.

Purpose Statement

The purpose of this study was to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athletes.

Research Questions

1. What is the relationship between social physique anxiety, general anxiety, and body image satisfaction in male and female athletes and non-athletes?
2. Is there a difference in social physique anxiety, general anxiety, and body image satisfaction between male and female athletes and non-athletes?
3. What is the relationship between weight pressures in sport and body image satisfaction, social physique anxiety, and general anxiety symptoms in male and female athletes?
4. Is there a difference in weight pressures in sport between male and female athletes?

Hypotheses

1. There will be a relationship between social physique anxiety, general anxiety, and body image satisfaction in male and female athletes and non-athletes.
 - a. There will be a positive relationship between social physique anxiety and general anxiety in participants
 - b. There will be a negative relationship between social physique anxiety and body image satisfaction in participants.
 - c. There will be a negative relationship between general anxiety and body image satisfaction in participants.
2. There will be a difference in social physique anxiety, general anxiety, and body image satisfaction between male and female athletes and non-athletes
 - a. Athletes will have higher social physique anxiety, general anxiety, and poorer body image satisfaction compared to non-athletes
 - b. Females will have higher social physique anxiety, general anxiety, and poorer body image satisfaction compared to males

3. There will be a relationship between weight pressures in sport and body image satisfaction, social physique anxiety, and general anxiety in male and female athletes.
 - a. There will be a positive relationship between weight pressures in sport and social physique anxiety and general anxiety in athletes
 - b. There will be a negative relationship between weight pressures in sport and body image satisfaction
4. Female athletes will report more weight pressures in sport compared to male athletes

Assumptions

1. The participants in this study truthfully and accurately completed all questionnaires.
2. The participants clearly understood the directions for each questionnaire used in this study.
3. All four questionnaires used are reliable and valid, and used in their validated format.

Limitations

1. The results may be affected by inaccurate reporting due to the fact that all questionnaires are self-reported.
2. Questionnaires were sent electronically to athletes and were not completed in person, so questions were not able to be answered regarding misunderstandings, if any existed.

Delimitations

1. The participants were limited to college students and athletes 18 years of age and older.
2. The participants were limited to female and male students and athletes from one NCAA Division II university.

Significance of the Study

This study filled a gap in the literature as the relationship between social physique anxiety, general anxiety symptoms, body image satisfaction and pressures from sport has not been published in the literature in any population. This study is unique in that it aimed to fill this gap in the research, as well as attempted to create a better understanding of the relationship between these constructs, while including a non-athlete control group. Clinicians may gain a better understanding of whether there is a relationship between general anxiety symptoms athletes experience, and their body image satisfaction, as well as weight pressures from their sport.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athletes. The background information necessary to understand this topic and research study will be explained in the following sections; (1) mental health, (2) mental health in athletes, (3) anxiety, (4) generalized anxiety disorder (5) generalized anxiety disorder in athletes, (6) social physique anxiety, (7) social physique anxiety in athletes, (8) body image, (9) body image in athletes, and (10) weight pressures in sport.

Mental Health

Mental health, defined by The World Health Organization, is more than the absence of a mental illness (WHO, 2019). Mental health is “a state of well-being in which each individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2019).

Depression is the number one contributor and anxiety is ranked the 6th on the list of contributors to global disability (WHO, 2019). It was estimated that 322 million people in the world suffered from depression and 264 million people suffered from an anxiety disorder (WHO, 2019). A huge barrier to people seeking help for their mental health is the stigma regarding mental health that continues to exist (Jorm, 2000). Throughout the past decade, there has been an increase in the number of government-funded mental health awareness interventions, and even still these stigmas exist and prevent people from seeking help (Ahmedani, 2011).

In the American youth population, it is approximated that 1 in every 4 to 5 people meet the criteria for some type of mental health disorder (Merikangas & Burstein, 2010). In 2010, 45.9

million Americans aged 18 and older experienced a mental illness (Substance Abuse & Mental Health Services Administration, 2012). Those aged 18 to 25 had a mental illness prevalence rate that was twice as high when compared to those who were 50 years of age and older (Substance Abuse & Mental Health Services Administration, 2012). A study done in Canada looking at college students found that stress, difficulty sleeping, and anxiety were the three most common factors affecting students' academic performance (American College Health Association, 2009). Forty seven percent of the students reported feeling such a high level of anxiety and 30% reported feeling so depressed they had trouble functioning normally in the last 12 months (ACHA, 2009). A national survey in the 2012-13 academic year found that 89.1% of students felt overwhelmed by their work load, 62% felt lonely, and 8.6% considered suicide (ACHA, 2013). A study conducted in the United Kingdom examined student mental health and found that more than 1 in 4 students were experiencing a mental illness and approximately 8 in 10 students reported they had experienced difficulties regarding their mental health state in the past year (Bewick, Gill, Mulhearn, Barkham, & Hill, 2008). In the United States, a study found that 17% of students screened positive for depression and 10% screened positive for an anxiety disorder (Hunt & Eisenberg, 2010).

A significant precursor for poor mental health in the college population is stress (Mikolajczyk, Maxwell, Naydenova, & Meier, & Ansari, 2008). Stress is experienced when people undergo a significant amount of pressure they cannot cope with (Mikolajczyk et al., 2008). There are multiple studies reporting high levels of anxiety, stress, and depression in first-year college students (Dyson & Renk, 2006; Sasaki & Yumasaki, 2007; Verger et al., 2009). As a result of these high levels, physical and mental health can both decline (Pritchard, Wilson, & Yamnitz, 2007). Mental illness prevalence rates are not just high in the general population, but in

the athletic population as well (Putukian, 2016). The high prevalence rate of mental disorders in people aged 16-34, approximately 25%, is startling because this is the primary age for competitive sport participation (Gulliver, Griffiths, & Chrtiensen, 2012; Breslin, Haughey, O'Brien, Caulfield, Robertson, & Lawlor, 2018).

Mental Health in Athletes

In just the United States alone, there are about 2.5 million collegiate student-athletes participating in sport each year (National Association of Intercollegiate Athletics, 2017; NCAA, 2016). Unlike the extensive amount of research conducted on mental health in the general population, there is minimal research examining the mental health of athletes (Sarac, Sarac, Pedroza, & Borchers, 2018). Although at this time there is limited research in this area, the growing prevalence rate of mental illness type, severity, and percentages in those aged 18 to 25 is being made aware of (Substance Abuse & Mental Health Services Administration, 2012). Student-athletes suffer from mental health disorders such as anxiety, eating disorders, depression, and substance abuse disorders, just like the rest of the population (Yang et al., 2007).

Student-athletes experience not only the stressors of everyday life, but they also experience injuries, burnout, time demands, various sport pressures, and conflict with coaches and/or teammates, to name a few (Sudano, Collins, & Miles, 2017). Increased anxiety and depression can occur if these stressors and mental health problems are left unaddressed (Vargas, Rabinowitz, Meye, & Arnett, 2015). In 2010 Proctor and Boan-Lenzo reported that 15.6% to 21% of collegiate student-athletes suffered from depression. These additional stressors experienced by student-athletes from both sport and school negatively affect their mental health (Broughton & Neyer, 2001). A study done in 2008-2009 looking at 2067 French athletes found

that women in particular are twice as likely, when compared to men, to experience episodes of depression over their lifetime (Schaal et al., 2011).

The culture of sports in addition to the previously mentioned social stigmas are just two possible reasons why athletes avoid seeking help for mental illnesses. Athletes experience a social environment that deter them from seeking help because they fear they will be seen as weak by teammates and coaches (Gulliver, Griffiths, & Chrsitensen, 2012; Lopez & Levy, 2013). This negative mindset and fear regarding seeking help for a mental illness leads to athletes acting in a positive manner to hide their insecurities and true feelings (Breslin et al., 2019; Putukian, 2016). In turn, the decreased likelihood that an athlete will seek help for their mental illness puts them at a greater risk of suicide (Armstrong, Burcin, Bjerke, & Early, 2015).

Demands are placed on athletes that are very different from students who do not participate in sports, such as limited social and occupational opportunities because of time constraints, pressure to maintain a certain fitness level, missing out on social events, balancing multiple relationships, physical fatigue causing low motivation levels, and low income due to limited working opportunities (Parham, 1993; Rushall, 1993). Finally, all the previously mentioned stressors may cause the development of dysfunctional thoughts, anxiety, depression etc.

One study conducted in 2016 found that about 24% of athletes experience clinical depression (Wolanin, Hong, Marks, Panchoo, & Gross, 2016). Often society stigmatizes athletes, falsely believing sport participation will decrease the risk for depression (Wolanin, Hong, Marks, Panchoo, & Gross, 2016). Athletes not only experience depressive triggers that the normal population experience, but they also experience sport specific triggers (Reardon & Factor, 2010). The average college student experiences triggers such as relationship break-ups, bad grades,

financial stress, and genetic predisposition for example (Reardon & Factor, 2010). Athletes also experience sport specific pressures such as balancing sport and academics, inflexible and demanding schedules, managing nutrition and maintaining a certain body composition, and traveling to away games/competitions (Reardon & Factor, 2010). The multitude of triggers student-athletes experience can not only make an existing mental illness worse but can also elicit new psychological concerns (Neal et al., 2013).

Anxiety

Anxiety is a common condition that influences a person's mental health and can have both short-term and long-term physical effects on the body (Toussaint et al., 2020). Anxiety has a variety of definitions with one common factor. Anxiety was described by Höschl, Libiger, and Švestka in 2004 as an emotional state that is unpleasant in which the cause cannot be quite defined. Anxiety is a feeling that a threat might happen, but the person can't convey what it might be (Höschl et al., 2004). In 2011, Slepíčka, Hošek, and Hátlová stated anxiety is an uncertain fear that the person can't describe, but experiences an unpleasant feeling accompanied by somatic activation. It is commonly noted that the cause of anxiety is unknown by the person experiencing this feeling (Pacesova, Smela, Kracek, & Plevkova, 2018). General signs and symptoms of anxiety are redness or paleness in the face, changes in voice, posture, and pain, pressure in the head, dizziness, chest tightness, trembling hands or voice, general weakness, sleep disturbance, negative thoughts, and/or feeling hopeless and helpless (Pacesova, Smela, Kracek, & Plevkova, 2018). Examples of anxious behaviors are foot tapping, nail biting, playing with random items, excessive eating, drinking, and smoking, and crossing legs (Pacesova, Smela, Kracek, & Plevkova, 2018).

Anxiety can be classified as two types: state anxiety and trait anxiety. State anxiety is anxiety experienced due to being in a certain situation, whereas trait anxiety is anxiety experienced due to a person's personality traits (Pacesova, Smela, Kracek, & Plevkova, 2018). Anxiety also has two elements, or components. The first element is cognitive anxiety which is the extent to which the person worries about his or her own self or has negative thoughts about his or her self (Batista et al., 2019). The second element is somatic anxiety which is the moment-to-moment physiological changes one experiences (Batista et al., 2019). Due to the clinical significance, it is important that anxiety is identified early in the diagnostic process (Toussaint et al., 2020).

Compared to the number of studies conducted on depression in various populations, there is far less research on anxiety (Spitzer, Kroenke, Williams, & Löwe, 2006). It was not until just recently that anxiety was studied in the athletic population (Tahtinen & Kristjansdottir, 2019). Tahtinen and Kristjansdottir's 2019 research, comparing the prevalence rate of anxiety symptoms between collegiate athletes and non-athletes, showed a 20.2% prevalence rate in individual sport athletes and a 30.7% prevalence rate among non-athletes. On average in the general population, anxiety is reported to be the highest between the ages 20 to 30 years old and then declines after 30 (Pacesova, Smela, Kracek, & Plevkova, 2018). Both past and current research has demonstrated that women experience anxiety more than men (Maeng & Milad, 2015; Stewart, Taylor, & Baker, 1997; Breslau, Schultz, & Peterson, 1995). Due to the inconsistent findings in research on anxiety in athletes, Tahtinen & Kristjansdottir (2019) stated that further research is needed looking at specific college athlete groups/sports.

Generalized Anxiety Disorder

The most prevalent type of mental health disorders are anxiety disorders affecting 30% of adults in the United States (Kessler et al., 2005). Generalized anxiety disorder (GAD) is a common type of anxiety disorder and has a prevalence rate of 5.2% in those aged 18 to 64 (Kessler, Petukhova, Sampson, Zaslavsky, Wittchen, 2012). Generalized anxiety disorder is one of the most common (Spitzer, Kroenke, Williams, & Löwe, 2006) and frequently diagnosed (Chiu, Lebenbaum, Cheng, de Oliveira, & Kurdyak, 2017) anxiety disorders in the general population. People who suffer from GAD experience uncontrollable worrying and physical symptoms such as increased muscle tension (Kessler et al., 2005). The lifetime prevalence rate of GAD is 6%, and if left untreated it can lead to worsened quality of life, other medical problems, and other mental health disorders (Ruscio et al., 2007).

The General Anxiety Disorder scale (GAD-7) is a commonly used tool to assess the severity of general anxiety symptoms. A study published in 2020 found that the questionnaire is sensitive to detect change (Toussaint et al.). The study not only found that the GAD-7 is an efficient tool for measuring anxiety over the course of treatment, but also that a 4-point decrease in the total score can be considered a statistically significant improvement within patients who also suffer from major depression as well (Toussaint et al., 2020).

In 2006 Spitzer et al. developed the GAD-7 and cutoff scores to categorize scores into severity levels (Spitzer, Kroenke, Williams, & Löwe, 2006). The cutoff scores for the general population are as follows: 5 is mild, 10 is moderate, and 15 is severe (Spitzer, Kroenke, Williams, & Löwe, 2006). Another study published in 2008 looked to investigate the reliability and validity of the GAD-7 and generate normative data in the general population (Löwe et al., 2008). From a total sample of 5,030 people (2,332 men and 2,698 women) the mean GAD-7

score for males was 2.66 and 3.20 for females (Löwe et al., 2008). For those aged 14-24 years old, the mean GAD-7 score was 2.76 (Löwe et al., 2008). For those with 13-15 years of education the mean GAD-7 score was 2.52 (Löwe et al., 2008). Those within the age range of 14-24 and with 13-15 years of education could be representative of college aged students.

Not all individuals with anxiety seek help or treatment. The barriers to seeking treatment does not make this any easier. A study published in 2020 by Goetter et al. aimed to identify barriers to treatment for people with social anxiety disorder (SAD) and general anxiety disorder (GAD; Goetter et al., 2020). The study consisted of 226 adults in which 121 were diagnosed with SAD and 105 were diagnosed with GAD (Goetter et al., 2020). The Liebowitz Social Anxiety Scale was used to assess the severity of social anxiety symptoms, and the Hamilton Anxiety Rating Scale was used to assess the severity of general anxiety symptoms (Goetter et al., 2020). This study found that individuals diagnosed with both SAD and GAD most frequently reported barriers were wanting to handle problems on their own, feeling embarrassed about needing help, and not knowing where to go for treatment (Goetter et al., 2020).

Generalized Anxiety Disorder in Athletes

A study done in 2016 aimed to look at the prevalence of depression and anxiety in football players (Junge & Feddermann-Demont, 2016). To assess anxiety levels, the study used the GAD-7 and compared the mean scores of the 471 male and female American football players (Junge & Feddermann-Demont, 2016) to the results of the general population in the previously mentioned study (Spitzer, Kroenke, Williams, & Löwe, 2006). The athlete population was made up of 10 first league women's teams, 10 first league men's teams, and 4 U-21 men's teams (Junge & Feddermann-Demont, 2016). One hundred ninety-eight men and 178 women made up the respective first league population samples (Junge & Feddermann-Demont, 2016). One

hundred ninety-six of the men and 176 of the women on each team scored below a 10, 1 male and 2 females scored a 10-14, and 1 male and 0 females scored above a 14 (Junge & Feddermann-Demont, 2016). The study found that the average score of the GAD-7 for all the athletes who participated in the study was 2.14 (Junge & Feddermann-Demont, 2016).

Social Physique Anxiety

Social physique anxiety is defined as “the fear of one’s physique being negatively evaluated by others” (Hart, Leary, & Rejeski, 1989). Social physique anxiety is a subtype of social anxiety which results from a person feeling as though their physique is being evaluated by another (Hart, Leary, & Rejeski, 1989). The term ‘physique’ refers to one’s body structure, more specifically their body fat, muscle tone, and body proportions (Hart, Leary, & Rejeski, 1989). It is important to realize that social physique anxiety refers to others’ evaluations of a person’s physique and not their own evaluation of themselves (Hart, Leary, & Rejeski, 1989). Because society puts such a spotlight on physique and physical attractiveness, social physique anxiety can deter people from being physically active if they are worried about other’s evaluating them (Crawford & Eklund, 1994; Kowalski, Crocker, & Kowalski, 2001). Decreased participation in exercise in public (Crawford & Eklund, 1994), low self-esteem (Davison & McCabe, 2005), fearing negative judgement (Crawford & Eklund, 1994), body image dissatisfaction, and increased odds of developing an eating disorder (Aşçı, Tüzün, & Koca, 2006) are all related to social physique anxiety (Grieve, Jackson, Reece, Marklin, & Delaney, 2008).

Davison and McCabe (2005) found that women are not only more likely to report higher levels of social physique anxiety but are also more likely to report that this anxiety influences their behaviors when compared to men. Although social physique anxiety prevalence is higher in women than men, a study done in 2002 by Russell found that men who experience high levels of

social physique anxiety also experience high levels of body dissatisfaction and low levels of self-esteem. Self-presentation and managing the impressions one has on another are the two theories that drive social physique anxiety (Mülazimoglu Balli, Erturan-Ilker, & Arslan 2014). The self-presentation theory states that people attempt to control the impressions they make on other people in any social setting (Leary 1992). Social anxiety kicks in when people are unable to control the impressions they make on others or they don't make the impression they intended to on others (Crocker et al., 2000).

A study done looking at 212 college students found that males had a lower mean score on the Social Physique Anxiety Scale compared to females (McLester, Hicks, Miller, & McLester, 2018). They also found that males showed significantly higher levels of appearance satisfaction than females (McLester, Hicks, Miller, & McLester, 2018). In addition, females were more likely to feel pressure to attain or maintain a certain physical appearance (McLester et al., 2018).

Social Physique Anxiety in Athletes

The definition of social physique anxiety, as it pertains to athletes, is exactly the same as it is for the general population. The difference in social physique anxiety between athletes and non-athletes is who or what the source of anxiety is. In athletes, the "others" they fear being negatively evaluated by are coaches, teammates, competitors, fans, judges, etc. All sports require a certain uniform, but not all sports are judged on their uniform, and more importantly how they look in their uniform. Sports such as gymnastics, diving, and figure skating are physique-judged sports, meaning these athletes are not only judged on how they perform but also how they look while performing. These athletes wear revealing uniforms that put their bodies on display, and more importantly for them, their body in that uniform determines how successful they are in their competition (Haase & Prapavessis, 2001). Every day these athletes practice and compete in an

environment where their physique is being judged (Borgen & Corbin, 1987). Due to the emphasis put on how they look in their uniforms, these athletes experience a higher level of social physique anxiety when compared to athletes in sports such as soccer, basketball, and lacrosse, who wear a uniform that is not as revealing nor does the score depend on how they look (Haase & Prapavessis, 2001). The social physique anxiety experienced by athletes can be so strong that it can deter them from participating in sport (Haase & Prapavessis, 2001).

Body Image

In 1935, Schilder defined body image as “an individual’s perception of his or her own body” (pg 11). Body dissatisfaction is having negative thoughts and feelings about one’s own body (Grogan, 2008). A person’s body image, whether they be satisfied or dissatisfied, can change depending on the setting or situation they are in (Krane, Waldron, Michalenok, Stiles-Shipley, 2001; Russell, 2004). There is an ideal and a realistic/actual appreciation of body image; society creates a certain ideal body image for men and women that people aim to make their body fit that image. There is also the real appreciation of body image which is that every person’s body is different, and the ideal body image created by society does not align with the realistic idea appreciation of body image. The inconsistency that exists between the ideal body image created by society and the realistic body image individualized person-to-person can lead to social physique anxiety and body image dissatisfaction (Koyuncu, Tok, Canpolat, & Catikkas, 2010).

Research within the last ten years has shown that adults, both male and female, have such a strong desire to be thin and that body image obsession is on the rise (Juarez, Soto, & Pritchard, 2012; Tylka, Russell, & Neal 2013). A study done in 2015 found that individuals who are unhappy with their body image have a greater risk of body image distortion (Kimber,

Georgiades, Couturier, Jack, & Wahoush, 2015). People who have a negative outlook on body image feel various negative emotions like internal shame when they see their body image as inferior to other people (Mashalpourfard, 2018). In addition, when people experience shame from an external source (i.e. friends, family, etc.) and experience social anxiety, an individual can experience increased anxiety and depression (Mashalpourfard, 2018).

A study was published which aimed to compare disordered-eating symptoms between female collegiate non-athletes and athletes, categorized into lean and non-lean sports, at an NCAA Division I institution (Reinking & Alexander, 2005). There were 84 athletes and 62 non-athletes included in the study, and they were assessed using the Eating Disorders Inventory-22, 91-item questionnaire with 11 subscales (Reinking & Alexander, 2005). Findings showed that non-athletes had a significantly higher mean score for the body dissatisfaction subscale as well as a higher mean score for the social insecurity subscale than the athlete group. The non-athlete group was less satisfied with their body and had more social insecurities than the athlete group (Reinking & Alexander, 2005).

Body Image in Athletes

Athletes have not one, but two “ideal” body images (Krane, Waldron, Michalenok, Stiles-ShIPLEY, 2001). Athletes have an athletic ideal body image and a social ideal body image (Krane et al., 2001). For example, female athletes have two conflicting ideal body images, one being a muscular, athletic body their sport demands, and the other being the ideal body image society demands of a tall, thin woman. Body image is simply a social construct. Gender norms, appearance-related norms and sport type are all influences of body image satisfaction or dissatisfaction (Steinfeldt, Zakrajsek, Bodey, Middendorf, & Martin, 2013). Research in the past has shown that athletes who wear revealing uniforms have an increased prevalence of body

image concerns (Reel & Gill, 2001; Steinfeldt et al., 2013). A research study done in 2002 found that athletes reported feeling more aware of their body image and shape while in their uniform, and as a result of this felt an increase in body dissatisfaction (Greenleaf).

Another study found the strongest correlation between social physique anxiety, body image satisfaction/dissatisfaction, and self-esteem in female athletes when compared to female non-athletes (Koyuncu et al., 2010). Overall, female collegiate student-athletes had higher body satisfaction and lower social physique anxiety (Koyuncu et al., 2010). Similarly, another study examined the differences in body dissatisfaction between male and female athletes, sport types, and division levels (Perelman, Buscemi, Dougherty, & Haedt-Matt, 2018). The study concluded that women reported greater body dissatisfaction than men, and there was no significant difference between division I and III athletes (Perelman et al., 2018). There was also no significant difference in body dissatisfaction in females who participated in non-lean-promoting sports (i.e. basketball) versus females in lean-promoting sports (i.e. gymnastics; Perelman et al., 2018). On the other hand, males who participated in a lean-promoting-sport were significantly more dissatisfied with their body than males who participated in non-lean promoting sports (Perelman et al., 2018).

Weight Pressures in Sport

Pressures surrounding an athlete's weight can come from a multitude of sources such as parents, coaches, fans, teammates, society, etc. Krentz and Warschburger conducted a study in 2011 examining 96 elite athletes around the age of 14 years old and found that higher social pressures (i.e. coaches, parents, teammates) from the athlete's sports environment resulted in an increased sports-related body dissatisfaction. This study also found that mean scores for body dissatisfaction were relatively equal for athletes and non-athletes (Krentz & Warschburger,

2011). Another study published in 2015 aimed to assess the risk of disordered eating among female athletes using the ATHLETE survey (Wells, Chin, Tacke, & Bunn). The study concluded that female athletes who participate in lean sports respond more negatively to external criticism regarding their body shape, suggesting the media, family, and/or friends influence how they feel about their body (Wells et al., 2015). The researchers felt these results were startling because the pressure could be a strong contributor to the risk of disordered eating in order to improve their performance and satisfy their coach (Wells et al., 2015).

Further research regarding weight pressures was conducted in 2015 via personal interviews with 15 female figure skaters (Voelker & Reel, 2015). The skaters reported feeling weight pressures from their sport starting as young as 7 years old (Voelker & Reel, 2015). The pressures they experienced came from watching older skaters, weigh-ins before and after practices, their body not meeting the ideal body image of a figure skater, coaches, parents, teammates, finding a male skating partner, and cultures that have been rooted in the figure skating society for years (Voelker & Reel, 2015). It was also stated that these pressures make the skaters feeling a certain level of anxiety (Voelker & Reel, 2015).

In another study utilizing collegiate synchronized skaters, researchers examined weight pressures and levels of social physique anxiety (Greenleaf, 2004). The SPAS and SYNCHROSKATE were the two questionnaires used (Greenleaf, 2004). The SYNCHROSKATE is a questionnaire that is used to assess weight pressures associated with synchronized skating (Greenleaf, 2004). The findings showed that the synchronized skaters experienced moderate levels of SPA and moderate levels of weight pressures (Greenleaf, 2004). While it was noted that most of the pressures these skaters experienced were pressures, they put

on themselves, participants also noted they still did experience pressures from teammates, coaches, and judges (Greenleaf, 2004).

In 2010, Reel, SooHoo, Greenleaf, and Carter created the 16-item WPS-F questionnaire. The researchers sought to create an assessment tool that can be used for female athletes to assess sport-specific weight pressures and identify frequencies of these pressures (Reel et al., 2010). The Reel et al., (2010) study of over 200 Division I female athletes used the 20-item WPS-F which was modified to 16 items at the conclusion of this study. The 20-item WPS-F was a modification of the 17-item CHEER which was used to assess weight pressures in high school and college cheerleaders (Reel et al., 2010; Reel & Gill 1996). The CHEER was also modified for college swimmers (Reel & Gill, 2001), college synchronized skaters (Greenleaf, 2004), and college dancers (Reel, SooHoo, Gill, & Jamieson, 2005). Reel et al., (2010) study used the factor analysis of the CHEER and found that the items on the CHEER with the highest factor loadings pertained to pressures from coaches for female athletes to lose weight, pressures from teammates, and the sport itself (Reel et al., 2010). Thus, the researchers developed the WPS-F based on the results.

A 14-item Weight Pressures in Sport – Males (WPS-M) questionnaire was later developed in 2011 by Galli, Reel, Petrie, Greenleaf, and Carter. The questionnaire started with 20 items but was modified to 14 items (Galli, Reel, Petrie, Greenleaf, & Carter, 2011). This study also examined the WPS-M questionnaire in relation to other questionnaires, one being the Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire (MBSR-AE; Galli et al., 2011). This study found that the mean score for the MBSRQ-AE was a 3.99 with a standard deviation of .68 (Galli et al., 2011).

CHAPTER III

METHODOLOGY

The purpose of this study was to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athlete college students. The design of this study was a cross-sectional quantitative study.

Participants

From one University in Pennsylvania, approximately 550 male and female NCAA athletes and 300 male and female non-athletes were invited to participate in this study. Students from two freshmen undergraduate courses in the college of health sciences, who did not participate in an NCAA sport, were invited for the non-athlete group. Exclusion criteria for the athlete group included participating in a club or recreational sport and being younger than 18 years of age. Exclusion criteria for the non-athlete group included participation in an NCAA varsity sport during any athletic season and being younger than 18 years of age.

Instrumentation

Demographics Questionnaire

A brief demographics questionnaire was administered to all participants. Demographics included gender, age, race, and sport type. Non-athletes indicated whether they participated in intramural or club sports, if applicable. NCAA athletes indicated which sport they participated in. If they participated in more than one sport, they were instructed to select their primary sport.

General Anxiety Disorder 7-item scale (GAD-7)

The General Anxiety Disorder scale (GAD-7) was used to measure the participants' level of clinical anxiety symptoms (Spitzer, Kroenke, Williams, & Löwe, 2006). The GAD-7 is a 7-item questionnaire (Spitzer et al., 2006). The 7-item questionnaire is rated on a Likert scale from

0 (not at all) to 3 (nearly every day) based on how the person felt in the last two weeks (Spitzer et al., 2006). The GAD scale originally consisted of 13 questions that asked how the person felt in the last two weeks on a scale: 0 (not at all sure), 1 (several days), 2 (over half the days), and 3 (nearly every day; Spitzer et al., 2006). Of the 13 items, the items with the highest correlation were chosen for the published version, the GAD-7 (Spitzer et al., 2006). The internal consistency of the GAD-7 was .92, and the test-retest reliability was .83 (Spitzer et al., 2006). A cutoff score of 10 or greater is representative of the need for further evaluation for GAD (Spitzer et al., 2006). Furthermore, cutoff scores of 5, 10, and 15 could be representative of mild, moderate, and severe levels of anxiety, as determined for the general population (Spitzer et al., 2006). The construct validity of this scale was based on the fact that as scores on the GAD-7 increased, so did the number of disability days, number of diagnoses made by a mental health professional, and the use of mental health care (Spitzer et al., 2006).

Social Physique Anxiety Scale (SPAS)

The Social Physique Anxiety Scale (SPAS) was used to measure the participants' level of anxiety regarding their appearance in a social setting when they feel they are being evaluated by others. It was designed for the general population, not specific to athletes. The questionnaire consists of 12 questions rated on a Likert type scale from 1 (not at all) to 5 (extremely) with the total score ranging from 12 to 60 (Hart, Leary, & Rejeski, 1989). This questionnaire does not have published cutoff scores in the populations being examined in this study. The scale originally consisted of 30 questions but was decreased to 12 questions by a team of experts based on clarity, validity, and appropriateness for both sexes (Hart et al., 1989). The original 30-item scale was administered to 195 subjects, which was then edited to a 12-item scale and administered to 89 new subjects (Hart et al., 1989). Based on the responses of the 89 subjects, 46

females and 43 males, the interitem reliability coefficient was .90 (Hart et al., 1989). An eight-week test-retest reliability was .82 (Hart et al., 1989). The validation of this scale was conducted based on the responses of 93 female subjects and 94 male subjects (Hart et al., 1989).

Multidimensional Body-Self Relations Questionnaire (MBSRO)

The original version of the MBSRQ from 1983 was called the ‘Body-Self Relations Questionnaire’ and consisted of 294 items (Cash, 2015 & 2018). The 294-item survey was used in a 1983 pilot study with college students, which then reduced the survey to 140-items in 6 subscales: Appearance Evaluation (AE), Appearance Orientation (AO), Fitness (FE), Fitness Orientation (FO), Health Evaluation (HE), and Health Orientation (HO; Cash, 2015). Two years later Cash and colleagues used this questionnaire in a national body-image survey which yielded 30,000 responses (Cash, 2015 & 2018). Two thousand fifty-three responses were randomly chosen for the studied sample. Years later Cash added three more validated subscales: Body Areas Satisfaction Scale (BASS), Overweight Preoccupation (OWP), and Self-Classified Weight (SCW) to the questionnaire and named the 10-subscale version the ‘Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 2015 & 2018). This scale was created and still intended for people ages 15 and older and is deemed inappropriate for use with anyone younger (Cash, 2015 & 2018). This questionnaire has been used in an extensive amount of published research and validated in 7 different languages (Cash, 2015 & 2018). Norms for each subscale, except the BASS and SCW, are taken from a U.S national survey in 1985 consisting of 988 males and 1064 females (Cash, 2018). Internal consistencies and test-retest correlations are reported for each subscale (Cash, 2018). Internal consistencies are reported based on 1985 survey population, and the test-retest correlations are from the 1983 college student sample (Cash, 2018).

For the present study the 7-item Appearance Evaluation (AE) subscale of the MBSRQ was used in both the athlete and non-athlete groups. The AE subscale assesses a person's feelings of attractiveness/unattractiveness, satisfaction/dissatisfaction with how they look (Cash, 2015 & 2018). Higher scores yield a more positive and satisfied feeling with one's physical appearance and lower scores yield an unhappy, negative feeling regarding one's appearance (Cash, 2018). Of the 7 items, 2 of the items were reverse scored because they were negatively worded (Cash, 2018). This questionnaire does not have published cutoff scores in the population being examined in the current study.

Weight Pressure in Sport (WPS)

The Weight Pressure in Sport (WPS) questionnaire was used to measure pressures related to weight for the athlete group (Reel et al., 2010). The WPS questionnaire was originally developed for female athletes, as the Weight Pressure in Sport-Female (WPS-F). Reel and colleagues developed this questionnaire in 2010 based on the CHEER questionnaire (Reel et al., 2010). They modified the CHEER, which is a 17-item questionnaire that was developed to look at weight and body pressures in high school and college cheerleaders (Reel et al., 2010). Since the CHEER was developed, it has been modified to evaluate multiple different sports (Reel et al., 2010). The WPS-F is a 16-item questionnaire that is rated on a 6-point Likert scale, 1 (never) to 6 (always; Reel et al., 2010). The internal consistency of this questionnaire is 0.90 (Reel et al., 2010). The CHEER was also modified to assess weight pressures in sport for males (WPS-M) pertaining to how they truly feel at the point in time the survey was administered (Galli, Petrie, Reel, Greenleaf, & Carter, 2011). The original WPS-M consisted of 18 items, but after interviews and written feedback from sample participants, review of items by two experts, and an exploratory factor analysis the scale was shortened to 14 items (Reel, Greenleaf, Carter, 2011;

Galli, Petrie, Reel, Chatterton, & Baghurst, 2013). Higher scores represent increased weight-related sport pressures (Galli et al., 2011). WPS-M is rated on a 6-point Likert scale, 1 (never), 2 (rarely), 3 (sometimes), 4 (often), 5 (usually), and 6 (always; Galli et al., 2011). This questionnaire does not have published cutoff scores in collegiate athletic populations. Internal consistency is .90 (Galli et al., 2011). For the present study, only the athlete group was administered the WPS questionnaire since the control group included non-athletes. Female athletes completed the 16-item WPS-F questionnaire, and male athletes completed the 14-item WPS-M questionnaire.

Procedures

This study was first reviewed and approved by the West Chester University Institutional Review Board (IRB). Questionnaires used were distributed electronically to all participants in this study in the fall semester of the 2019-2020 academic year. The questionnaires were found in published articles for the public use and were used in their validated forms. All non-athletes who wished to participate were invited during class to use their phone to scan a QR-code, which took them to the consent form and questionnaires administered through Qualtrics. All athletes received an email to their academic email address, inviting them to participate in this study. This email was sent out by the Associate Athletic Director. If they wished to participate, they opened the link provided in the email. The athletes went through the same steps as non-athletes, through Qualtrics. After consent was given by participants, they then clicked 'yes' or 'no' when asked if they are 18 years of age or older. If consent was not given or the participant clicked 'no' when asked if they are 18 years of age or older, a thank you message appeared, and they were dismissed and did not complete the questionnaires. If consent was given and participant clicked 'yes' when asked if they are 18 years of age or older, they moved on to the demographics portion

of the study. The non-athletes indicated that they were not an NCAA athlete before continuing on in the study.

Once the demographics portion was complete, the participants completed the questionnaires for their group. All athletes first completed the WPS questionnaire, followed by the SPAS, GAD-7, and the MBSRQ-AE. If the athlete selected 'male' when responding to the question regarding gender they were only shown the male version of the WPS questionnaire. If the athlete selected 'female' they were only shown the female version of the WPS questionnaire. If the athlete selected 'other' they were then given the option to select which version of the WPS survey they wanted to take. All non-athletes completed the SPAS, GAD-7, and the MBSRQ-AE. Once all questions were answered the participant clicked 'submit' and the page closed out. If at any point the participant wished to remove themselves from the study, they had the option to close the page at any time. If the participant failed to complete all surveys their answers were not used in this study.

Data Analysis

Descriptive statistics, including frequencies, percentages and means, were conducted to describe demographics of all participants including gender, race, age, primary sport, and sport type, as well as mean scores and standard deviations for all 5 surveys (SPAS, GAD-7, MBSRQ-AE, WPS-F and WPS-M). To answer our first research question regarding the relationship between SPA, general anxiety, and body image satisfaction, Pearson Correlations were run to examine relationships between these variables. To answer our second research question regarding differences in general anxiety, social physique anxiety, and body image satisfaction, an ANOVA was run for each of the three variables. To answer our third research question regarding the relationship between weight pressures in sport, body image satisfaction, SPA, and

general anxiety, a Pearson's Correlation was run between mean WPS, GAD-7, SPA, and MBSRQ-AE scores in athletes. To answer our fourth research question regarding differences in weight pressures in sport between male and female athletes, a Mann-Whitney U test, a nonparametric test of differences using ordinal data, was run to compare mean WPS scores between male and female athletes.

CHAPTER IV

RESULTS

The purpose of this study was to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athletes.

Data were obtained from all participants during the fall semester of the 2019-2020 academic year via an online survey using Qualtrics online software. General anxiety symptoms were assessed using the General Anxiety Disorder Scale (GAD-7), social physique anxiety was assessed using the Social Physique Anxiety Scale (SPAS), body image satisfaction was assessed using the Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ-AE), and for NCAA athletes weight pressure was assessed using Weight Pressure in Sport Questionnaire (WPS). Data collected included: age, gender, race, sport type, primary sport, GAD-7 scores, SPAS scores, MBSRQ-AE scores, and WPS scores.

Demographics

A total of 311 college students from one Division II institution participated in the study completing all questionnaires. Females represented 75.6% of the participants (n= 235), and males represented 24.4% (n= 76). Regardless of gender, athletes represented 45.0% (n= 140) of the sample, and non-athletes represented 55% (n= 171). Gender by Athlete Status can be found in Table 1. Of the athlete group, 24.3% (n= 34) were males and 75.7% (n = 106) were females. Of the non-athlete participants, 24.6% (n = 42) were males and 75.4% (n = 129) were females (Table 1).

Table 1
Participants by Gender and Athlete Status

Gender	Athletes		Non-Athletes		Total	
	n	%	n	%	n	%
Male	34	24.3%	42	24.6%	76	24.4%
Female	106	75.7%	129	75.4%	235	75.6%
Total	140	45.0%	171	55%	311	100%

Age

Table 2 presents the ages of all participants. The ages ranged from 18-26 years old.

Participants aged 18 years old represented the largest portion of the participants at 63% (n= 196).

Table 2
Age, in years

Age	n	%
18	196	63.0%
19	38	12.2%
20	38	12.2%
21	31	10.0%
22	5	1.6%
23	0	0.0%
24	1	0.3%
25	1	0.3%
26	1	0.3%
Total	311	100.0%

Race

There was an unequal distribution for race among all participants (Table 3). The majority of participants (84.6%, $n = 263$) identified as white. The race distribution among the athlete group and the non-athlete group can be seen in Table 4.

Table 3
Race of all Participants ($n = 311$)

Race	n	%
White	263	84.6%
Black or African American	20	6.4%
American Indian or Alaska Native	1	0.3%
Asian	2	0.6%
Other	7	2.3%
2+ Races/Mixed Race	18	5.8%
Total	311	100.0%

Table 4
Race of Athlete and Non-Athlete Groups

Race	Athletes		Non-Athletes	
	n	%	n	%
White	122	87.1%	141	82.5%
Black or African American	9	6.4%	11	6.4%
American Indian or Alaska Native	1	0.7%	0	0.0%
Asian	1	0.7%	1	0.6%
Other	1	0.7%	6	3.5%
2+ Races/Mixed Race	6	4.3%	12	7.0%
Total	140	100.0%	171	100%

Primary Sport

Athletes from 23 different sports teams were invited to participate in this study, which consisted of 9 male sports teams and 14 female sports teams. The number of participants from each sport was uneven but included a broad range of both male and female sports (See Table 5).

At the time of the study, the athletes were asked to select their primary sport if they participated in more than one sport.

Table 5
Primary Sport

Sport	n	%
Women's Rugby	22	15.7%
Baseball	15	10.7%
Volleyball	14	10.0%
Men's Soccer	11	7.9%
Field Hockey	9	6.4%
Women's Soccer	9	6.4%
Gymnastics	8	5.7%
Women's Lacrosse	7	5.0%
Women's Swimming	7	5.0%
Cheerleading	6	4.3%
Softball	6	4.3%
Women's Track & Field	6	4.3%
Women's Tennis	4	2.9%
Football	3	2.1%
Women's Golf	3	2.1%
Women's Cross Country	3	2.1%
Men's Basketball	2	1.4%
Men's Swimming	2	1.4%
Women's Basketball	2	1.4%
Men's Track & Field	1	0.7%
Men's Golf	0	0.0%
Men's Tennis	0	0.0%
Men's Cross Country	0	0.0%
Total	140	100.0%

Survey Results

Mean scores by groups (all participants, males, females, athletes, non-athletes, male athletes, female athletes, male non-athletes, and female non-athletes) for each questionnaire can be found in Tables 6-9.

Table 6
GAD-7 Mean Scores

Group	n	mean
All Participants	311	6.04
Males	76	4.67
Females	235	6.48
Athletes	140	5.34
Non-Athletes	171	6.61
Male Athletes	34	3.41
Female Athletes	106	5.96
Male Non-Athletes	42	5.69
Female Non-Athletes	129	6.90

Table 7
SPAS Mean Scores

Group	n	mean
All Participants	311	35.14
Males	76	28.07
Females	235	37.43
Athletes	140	33.17
Non-Athletes	171	36.75
Male Athletes	34	25.71
Female Athletes	106	35.57
Male Non-Athletes	42	29.98
Female Non-Athletes	129	38.96

Table 8
MBSRQ-AE Mean Scores

Group	n	mean
All Participants	311	23.76
Males	76	26.89
Females	235	22.75
Athletes	140	25.02
Non-Athletes	171	22.73
Male Athletes	34	28.32
Female Athletes	106	23.96
Male Non-Athletes	42	25.74
Female Non-Athletes	129	21.75

Table 9
WPS Mean Scores

Group	n	mean
Male Athletes	34	2.15
Female Athletes	106	1.84

Research Question Results

Research Question 1: *What is the relationship between social physique anxiety, general anxiety, and body image satisfaction in male and female athletes and non-athletes?*

Pearson's correlations were calculated to assess the relationship between general anxiety (GAD), social physique anxiety (SPA), and body image satisfaction (BI). Correlations were run for all participants, males, females, athletes, non-athletes, female athletes, female non-athletes, male athletes, and male non-athletes. The general correlations for all groups can be seen in Table 10. The partial correlations for all groups can be seen in Table 11.

Table 10
General Correlations

	GAD & SPA		SPA & BI		BI & GAD	
	r-value	p-value	r-value	p-value	r-value	p-value
All Participants	.444	.000*	-.788	.000*	-.428	.000*
Males	.391	.000*	-.678	.000*	-.328	.004*
Females	.430	.000*	-.789	.000*	-.429	.000*
Athletes	.537	.000*	-.786	.000*	-.499	.000*
Non-Athletes	.346	.000*	-.778	.000*	-.351	.000*
Male Athletes	.481	.004*	-.704	.000*	-.436	.010*
Female Athletes	.514	.000*	-.775	.000*	-.475	.000*
Male Non-Athletes	.252	.108	-.640	.000*	-.201	.201
Female Non-Athletes	.356	.000*	-.788	.000*	-.381	.000*

*Significant correlations $p < .05$

Table 11
Partial Correlations

Control Variables →	Body Image Satisfaction GAD & SPA		General Anxiety Disorder SPA & BI		Social Physique Anxiety BI & GAD	
	r-value	p-value	r-value	p-value	r-value	p-value
All Participants	.192	.001*	-.738	.000*	-.142	.012*
Males	.243	.036*	-.632	.000*	-.093	.426
Females	.165	.011*	-.741	.000*	-.162	.013*
Athletes	.270	.001*	-.709	.000*	-.148	.083
Non-Athletes	.124	.107	-.748	.000*	-.139	.072
Male Athletes	.272	.125	-.627	.000*	-.156	.386
Female Athletes	.261	.007*	-.703	.000*	-.143	.146
Male Non-Athletes	.163	.308	-.621	.000*	-.054	.737
Female Non-Athletes	.097	.274	-.755	.000*	-.175	.048*

*Significant correlations $p < .05$

Question 2: *Is there a difference in social physique anxiety, general anxiety, and body image satisfaction between male and female athletes and non-athletes?*

One-way ANOVAs were run to determine the differences in general anxiety, social physique anxiety, and body image satisfaction in the four subgroups (male athletes, female athletes, male non-athletes, female non-athletes). Table 12 shows the F value and p-value by

gender, athlete status, and gender and athlete status. Table 13 shows the mean values and standard deviations for each variable by gender, athlete status, group totals, and all participants.

Table 12
ANOVA

Dependent Variable →	SPA		GAD		BI	
	F	p-value	F	p-value	F	p-value
Gender	50.09	.000*	8.90	.003*	26.207	.000*
Athlete Status	8.29	.004*	6.51	.011*	8.650	.004*
Gender & Athlete Status	.108	.743	1.13	.290	.053	.818

Table 13
ANOVA Descriptive Statistics

Dependent Variable →		SPA		GAD		BI	
Gender	Athlete Status	Mean	SD	Mean	SD	Mean	SD
Male	Yes	25.71	9.04	3.41	4.84	28.32	4.65
	No	29.98	8.54	5.70	4.91	25.74	5.88
	Total	28.07	8.97	4.67	4.97	26.89	5.49
Female	Yes	35.57	9.47	5.96	5.26	23.96	5.97
	No	38.96	11.11	6.90	4.22	21.75	6.69
	Total	37.43	10.52	6.48	4.72	22.75	6.45
Total	Yes	33.17	10.25	5.34	5.26	25.02	5.96
	No	36.75	11.21	6.61	4.42	22.73	6.71
	Total	35.14	10.92	6.04	4.84	23.76	6.47

Question 3: *What is the relationship between weight pressures in sport, body image satisfaction, social physique anxiety, and general anxiety symptoms in male and female athletes?*

Pearson's correlations were calculated to assess the relationship between weight pressures in sport (WPS), body image satisfaction (BI), social physique anxiety (SPA), and general anxiety (GAD) in male athletes and female athletes. The general correlations for both groups can be seen in Table 14. The partial correlations for all groups can be seen in Table 15.

Table 14
General Correlations

Variables		Male Athletes	Female Athletes
SPA & GAD	r-value	.481	.514
	p-value	.004*	.000*
GAD & BI	r-value	-.436	-.475
	p-value	.010*	.000*
BI & SPA	r-value	-.704	-.775
	p-value	.000*	.000*
GAD & WPS	r-value	.591	.281
	p-value	.000*	.004*
WPS & BI	r-value	-.511	-.391
	p-value	.002*	.000*
SPA & WPS	r-value	.605	.456
	p-value	.000*	.000*

*Significant correlations $p < .05$

Table 15
Partial Correlations

Control Variables	Variables		Male Athletes	Female Athletes
Weight Pressure in Sport	SPA & GAD	r-value	.192	.451
		p-value	.284	.000*
	GAD & BI	r-value	-.193	-.414
		p-value	.282	.000*
	BI & SPA	r-value	-.577	-.728
		p-value	.000*	.000*
Social Physique Anxiety	BI & WPS	r-value	-.151	-.066
		p-value	.403	.502
	BI & GAD	r-value	-.156	-.143
		p-value	.386	.146
	GAD & WPS	r-value	.430	.061
		p-value	.013*	.537
General Anxiety Disorder	BI & SPA	r-value	-.627	-.703
		p-value	.000*	.000*
	SPA & WPS	r-value	.454	.379
		p-value	.008*	.000*
	BI & WPS	r-value	-.349	-.305
		p-value	.046*	.002*
Body Image Satisfaction	GAD & SPA	r-value	.272	.261
		p-value	.125	.007*
	SPA & WPS	r-value	.402	.264
		p-value	.020*	.007*
	GAD & WPS	r-value	.476	.117
		p-value	.005*	.233

*Significant correlations $p < .05$

Question 4: *Is there a difference in weight pressures in sport between male and female athletes?*

A Mann-Whitney U test was run to assess the difference in weight pressures in sport between male athletes and female athletes. There was no significant difference ($p = .067$) between the two groups.

CHAPTER V

DISCUSSION

The primary aim of this study was to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athlete. This study identified several significant findings between the variables assessed. Tests were run on all participants and/or one of the eight subgroups: males, females, athletes, non-athletes, male athletes, female athletes, male non-athletes, and female non-athletes. This section will further discuss and explain the results by research question.

Research Question 1

This study showed there was multiple significant relationships between general anxiety, social physique anxiety, and body image satisfaction across male and female athletes and non-athletes. Within all participants, there was a significant, positive relationship between general anxiety and social physique anxiety; a significant, negative relationship between social physique anxiety and body image satisfaction; and a negative, significant relationship between body image satisfaction and general anxiety. These findings support the hypotheses made by the researchers. When breaking it down into the eight subgroups, all subgroups except male non-athletes had significant, positive relationships between general anxiety and social physique anxiety, and significant, negative relationships between body image satisfaction and general anxiety. The relationship between social physique anxiety and body image was a significant, strong, negative, significant relationship in all participants and all eight subgroups. It can be concluded that when examining all participants and each of the subgroups except male non-athletes, as general anxiety increased so did social physique anxiety, and as body image satisfaction increased general

anxiety decreased. In all participants and all eight subgroups as body image satisfaction increased social physique anxiety decreased.

The partial correlations run on the same three variables in the same groups were used to show any differences in the relationships when controlling for the third variable. Examining the relationship between general anxiety and social physique anxiety while controlling for body image satisfaction no longer showed a significant relationship for the non-athletes, male athletes, and female non-athletes subgroups. The reason for the relationship between general anxiety and social physique anxiety no longer being significant in these three subgroups could be because the relationship between social physique anxiety and body image satisfaction is stronger. When we controlled for body image satisfaction the relationship between general anxiety and social physique anxiety was no longer significant which shows that by taking body image satisfaction out of the picture the relationship significance changes. This could be because it was already shown that body image satisfaction and social physique anxiety had a stronger relationship.

When examining the relationship between social physique anxiety and body image, all participants and all 8 subgroups had significant, strong, negative relationships in both the general and partial correlations. This may just further support the idea that social physique anxiety and body image satisfaction have the strongest relationship of the three variables. Controlling for general anxiety did not change the direction, strength, or significance of the relationship between social physique anxiety and body image satisfaction.

Assessing the relationship between body image satisfaction and general anxiety did show differences from the general to the partial correlation when controlling for social physique anxiety. The difference shown was males, athletes, non-athletes, male athletes, and female athletes subgroups were no longer significant. Controlling for social physique anxiety showed

the biggest difference when looking at the general correlations and the partial correlations. When controlling for social physique anxiety, the relationship between body image satisfaction and general anxiety is now significant in only 3 of the 9 participant groups. This too supports that social physique anxiety and body image satisfaction have the strongest relationship. By taking social physique anxiety out of the relationship, 6 of the 9 groups were no longer significant. We see over and over that when either social physique anxiety or body image satisfaction are controlled for, that some relationships lose significance.

These findings not only support the hypotheses made by the researchers of the current study, but they also align with findings from previous research. Mashalpourfard (2018) found that people with a negative body image feel negative emotions about feeling inferior to others. The Mashalpourfard (2018) findings support our findings that as body image satisfaction decreases, social physique anxiety increases. Looking at the relationship between general anxiety and social physique anxiety, it is not surprising that there is a positive relationship between the two because social physique anxiety is a subtype of general anxiety. Considering social physique anxiety is a form of anxiety, it makes sense to see this positive relationship.

The negative relationship between body image satisfaction and general anxiety, and body image satisfaction and social physique anxiety, also only seems to make sense. As a person feels less satisfied with their body it can be seen as “normal” for that person to feel increased anxiety in general and increased anxiety when one thinks another person is looking at them, especially in a negative way (social physique anxiety).

Much of the previous research looking at athletes and body image focuses on sport type or uniform type. There are studies with findings pertaining to gender and athlete status and body image. Koyuncu et al. (2010) found that female athletes reported higher levels of body

dissatisfaction than female non-athletes, and female athletes had higher body dissatisfaction and lower social physique anxiety. The findings in this current study align with the findings by Koyuncu et al. in that not only female athletes, but females in general showed a significant, negative relationship between body image satisfaction and social physique anxiety.

Question 2

There were multiple findings when examining the difference between social physique anxiety, general anxiety, and body image satisfaction in male and female athletes and non-athletes. There was a significant difference in SPA mean scores ($p = .000$) between males and females. Males had a mean score of 28.07 and females had a mean score of 37.43. Another study that assessed SPA in 212 college students also found that males had a lower mean score on the SPAS when compared to females (McLester, Hicks, Miller, & McLester, 2018). Being there was a significant relationship between SPA and WPS in female athletes, as seen in our Research Question three results, weight pressures could play a role in why the mean SPA score was higher in females compared to males. However, there was no significant difference in weight pressures in sport between male and female athletes. Moreover, general social pressures that women experience could play a role in why women experience more SPA and had a higher SPA mean score. There was also a significant difference in SPA mean scores between athletes and non-athletes. Athletes had a mean score of 33.17 and non-athletes had a mean score of 36.75.

There were significant differences in GAD mean scores between males and females ($p = .003$), and athletes and non-athletes ($p = .011$). The mean score for males was 4.67 and for females was 6.48. The mean score for athletes was 5.34 and for non-athletes was 6.61. Similar to results from Löwe et al. (2008), we also found that females had higher GAD mean scores when compared to males. Löwe et al. (2008) found lower mean scores overall for both females

($M=2.66$) and males ($M=3.20$) than the current study. One might conclude that athletes had lower GAD scores because they exercise regularly which can have a positive impact on mental health, or that underreporting was involved.

When examining the difference in body image satisfaction between male and female athletes and non-athletes there was a significant difference between genders ($p=.000$) and athlete versus non-athletes ($p=.004$). The mean score for males was 26.89 and for females was 22.75. The mean score for athletes was 25.02 and for non-athletes was 22.73. Reinking and Alexander (2005) found results which support the findings in this current study. They too found that non-athletes are less satisfied with their body when compared to athletes (Reinking & Alexander, 2005). One might conclude that athletes are more satisfied with their body because regularly participating in a collegiate sport will have a physical effect on one's body. A sport might put such a physical demand on the athlete that might it leads to appearance satisfaction, but it might not have such a positive effect on the athlete's mental health. A study done in 2018 also found that males had higher body satisfaction when compared to women (Perelman, Buscemi, Dougherty, & Haedt-Matt, 2018). Perelman et al. (2018) looked at collegiate athletes only, so they did not have a non-athlete control, but the findings supported what the current study also found. A study done examining body satisfaction between males and females also found that males had higher levels of body satisfaction when compared to females (McLester, Hicks, Miller, & McLester, 2018). One may not be surprised by males reporting higher body satisfaction when compared to females because males may not be judging their physical appearance as hard as females might. Females may feel they experience increased pressures from society to look a certain way so they may be more inclined to judge their own body more than a male would leading to increased body dissatisfaction.

When considering all three factors, body image satisfaction, social physique anxiety, and general anxiety, we found that there was a significant difference in mean scores for all three variables between males and females and athletes and non-athletes. Females had higher mean scores for social physique anxiety and general anxiety and a lower mean score for body image satisfaction. So, one might conclude that when looking at the three factors together there is no surprise in the findings. One might conclude that feeling less satisfied with body image could be a factor in general anxiety and social physique anxiety or vice versa.

Question 3

When examining the relationship between weight pressures in sport, body image satisfaction, social physique anxiety, and general anxiety in male and female athletes there were multiple significant relationships. These variables were only examined in male and female athletes due to the fact that these two groups were the only ones to complete the weight pressures in sport questionnaires. The general correlations for relationships between the 4 variables were significant in all 9 groups. The only new relationships to discuss here are the relationships involving weight pressures in sport. A significant, positive relationship was found in both male and female athletes when examining the relationship between general anxiety and weight pressures in sport. This shows that in both groups as general anxiety increased so did the weight pressures experienced from sports. When looking at the relationship between weight pressures in sport and body image satisfaction, there was a significant, negative relationship in both male and female athletes. Both groups showed that as weight pressures in sport increased body image satisfaction decreased. The relationship between social physique anxiety and weight pressure in sport was a significant, positive relationship in male and female athletes.

The findings here support the hypotheses of the researchers and findings from previous research. Krentz and Warschburger (2011) found that more sport related pressures resulted in higher body dissatisfaction. For both male and female athletes in the current study as weight pressures in sport increased, body image satisfaction decreased. Voelker and Reel (2015) found that sport pressures are associated with anxiety. Voelker and Reel (2015) findings can be supported by the results of the current study which found that weight pressures and general anxiety have a positive, significant relationship, so as general anxiety increased so did the weight pressures experienced in sport.

When comparing the general correlations to the partial correlations there were differences in some of the relationships for both male athletes and female athletes. When controlling for weight pressures in sport the only relationship that did not change was the negative relationship in male athletes between body image satisfaction and social physique anxiety. This further supports the findings from Research Question one that the relationship between these two variables is very strong, and that controlling for weight pressures in sport did not change that. When controlling for weight pressures in sport, the relationship between social physique anxiety and general anxiety and general anxiety and body image was no longer significant in male athletes. This could be because the relationship between general anxiety and weight pressures in sport is stronger than the relationship between general anxiety and body image satisfaction and general anxiety and social physique anxiety. General anxiety was the one variable that was in both of the relationships that was no longer significant when controlling for weight pressures in sport which may further support the strong relationship these two variables have. When controlling for weight pressures in sport in female athletes, the relationships between the other three variables were significant just as they were in the general correlations.

When comparing the general to the partial correlations while controlling for social physique anxiety, the only relationship that was still significant in male athletes was the relationship between general anxiety and weight pressures in sport. This further supports the findings explained in the previous paragraph about the strong relationship between general anxiety and weight pressures in sport. We also found in Research Question one that the relationship between body image satisfaction and social physique anxiety is very strong. Being that body image satisfaction was the one variable that was consistent in the two relationships that were no longer significant when controlling for social physique anxiety makes sense. When controlling for social physique anxiety in female athletes, the relationships between the other 3 variables was no longer significant for all 3 relationships.

When controlling for general anxiety in both male athletes and female athletes, the relationships between the other three variables were consistent which did not change from the general correlations. We have seen from results in other relationships that they are strong so this should be no surprise. Seeing that these three variables are significant when controlling for general anxiety supports findings throughout the study. This also supports the hypotheses made by the researchers.

In male athletes, the relationship between general anxiety and social physique anxiety was the only relationship to no longer be significant in male athletes from the general to the partial correlations. This could be because we have found multiple times throughout this study that the relationship between social physique anxiety and body image satisfaction is strongly correlated. When looking at female athletes, the only relationship to no longer be significant when controlling for body image satisfaction was the relationship between general anxiety and weight pressures in sport. We saw in Table 15 that when controlling for general anxiety and

weight pressures in sport, all other relationships were significant in female athletes. Seeing that general anxiety and weight pressures in sport were no longer significant when controlling for body image satisfaction may not be so surprising. Weight pressures in sport and body image satisfaction may have a stronger correlation than the relationships between weight pressures in sport and general anxiety. This can be supported by seeing that in female athletes the relationship between weight pressure in sport and body image was still significant when controlling for general anxiety.

Research Question 4

When examining the difference in weight pressures in sport between male and female athletes it was found that there was no significant difference between the two groups. Both groups had low mean scores as seen in Table 9. Mean scores could range from 1-6; the males mean score was 2.15 and the females mean score was 1.84. The low scores could be because at the collegiate level athletes may not look at the pressures from coaches, teammates, parents, etc. as pressures but as the nature of the sport. After participating in a sport for so many years it may seem normal to have these pressures. The athletes may be used to the pressures by now, so they don't cross their minds as abnormal.

Limitations

It is important to note there were limitations in this study. One limitation in this study was the difference in number of female and male participants. There were three times as many females (75.6%) that participated in the study than males (24.4%). Likewise, there were three times as many female athletes (75.7%) and non-athletes (75.4%) that participated in the study as there were male athletes (24.3%) and non-athletes (24.6%). It could have been the title of the study that deterred males from participating in this study. Males may have felt that this study

would not apply much to them or they may not have been interested because of the topics examined in this study.

There were also not enough athletes representing each sport to conduct meaningful comparison analyses across sports. Another limitation to the study is that the questionnaires were all self-reported, so response bias is possible. When creating the online version of the questionnaires for the non-athlete participants there was a systematic error and one question was left out by accident in the GAD-7. The statement left out was “Worrying too much about different things”. To correct this error all non-athlete participants who completed the survey were given a 1.5 which is the mean score being the GAD-7 is answered on a scale 0-3. Lastly, this study was conducted at one division II institution, therefore the findings cannot be generalized to all college students.

Future Research

Future research is needed to examine a larger and more equal sample size when researching the constructs of general anxiety, social physique anxiety, body image, and weight pressures in sport. It would also be beneficial to examine these same variables across multiple institutions of varying levels of competition. Other demographics that could be included in future include academic class, years participating in primary sport, and total number of sports participating in. Although there was a large number of total questions for each participant to answer, future researchers could administer the questionnaires at multiple times in the academic year/athletic season to assess the change in scores over time or determine if time of administration plays a role in results. It is certainly possible general anxiety may change throughout an athletic season for athletes, and throughout an academic semester for both athletes and non-athletes. Additionally, pressures in sport can potentially change depending on whether

athletes are in-season or out of season. Another component that may be considered for future research is injury status. Controlling for injuries in athletes could be beneficial in examining anxiety, body image, and weight pressures. Lastly, future research could also examine athletic identity and/or gender identity as well.

CHAPTER VI

CONCLUSION

The goal of the present study was to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate athletes and non-athletes. Several significant findings were discovered in this study. We found that social physique anxiety may have a stronger relationship with body image satisfaction than general anxiety in all 9 groups. We also found that when compared to men, women had a higher mean social physique anxiety score and general anxiety score, and lower mean score for body satisfaction. When compared to the control group, athletes had a lower mean general anxiety score and a higher mean body image satisfaction score. There was no significant difference between male and female athlete mean weight pressure in sport scores. It was also evident that when controlling for weight pressures in sport, the relationship between body image satisfaction and social physique anxiety was still significant in male and female athletes. Lastly, it could be seen in female athletes that the relationship between body image satisfaction and weight pressures in sport was a significant relationship in both the general correlations and partial correlations while controlling for general anxiety.

These findings not only align with previous research, but also assist in filling a gap in the research on the topics never published before, such as the relationship between these three factors in any population. The findings in this study may give medical professionals in the fields of sports medicine and sport psychology a better understanding of the relationship between these constructs. Clinically, when sports medicine health care providers are making a referral to a mental health specialist it is important to attempt to gather as much information as possible under

their licensure to make the most accurate referral, and for the mental health specialist to carefully consider multiple factors and/or diagnoses.

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Appendix A: Demographics Questionnaire

Are you 18 years of age or older?

Yes

No

Age

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

Race/Ethnicity

White

Black or African American

American Indian or Alaska Native

Asian

Native Hawaiian or Pacific Islander

2+ Races/Mixed-Race

Other

Q4 Sport Type. (FYE Course Only)

NCAA varsity sport

Club sport

Intramural/Recreational sport

None

Primary Sport (NCAA Athletes Only)

- Baseball
- Men's Basketball
- Women's Basketball
- Cheerleading
- Men's Cross Country
- Women's Cross Country
- Football
- Field Hockey
- Men's Golf
- Women's Golf
- Gymnastics
- Lacrosse
- Rugby
- Men's Soccer
- Women's Soccer
- Softball
- Men's Swimming
- Women's Swimming
- Men's Tennis
- Women's Tennis

Men's Track & Field

Women's Track & Field

Volleyball

Gender

Male

Female

Other _____

Would you prefer to take a survey on Weight Pressures in Sport for male athletes or a survey on Weight Pressures in Sport for female athletes? (NCAA Athletes Only)

Male

Female

Appendix B: Generalized Anxiety Disorder 7-item (GAD-7) scale

For the following questions, please indicate **over the last 2 weeks**, how often have you been bothered by the following problems?

Feeling nervous, anxious, or on edge

- Not at all
- Several days
- Over half the days
- Nearly every day

Not being able to stop or control worrying

- Not at all
- Several days
- Over half the days
- Nearly every day

Worrying too much about different things

- Not at all
- Several days
- Over half the days
- Nearly every day

Trouble relaxing

- Not at all
- Several days

Over half the days

Nearly every day

Being so restless that it's hard to sit still

Not at all

Several days

Over half the days

Nearly every day

Becoming easily annoyed or irritable.

Not at all

Several days

Over half the days

Nearly every day

Feeling afraid as if something awful might happen.

Not at all

Several days

Over half the days

Nearly every day

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all

Somewhat difficult

- Very difficult
- Extremely difficult

Appendix C: Social Physique Anxiety Scale (SPAS)

The following questionnaire contains statements concerning your body physique or figure. By physique or figure we mean your body's form and structure; specifically, body fat, muscular tone, and general body proportions.

I am comfortable with the appearance of my physique or figure.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

I would never worry about wearing clothes that might make me look too thin or overweight.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

I wish I wasn't so up-tight about my physique.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

When I look in the mirror I feel good about my physique or figure.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

Unattractive features of my physique or figure make me nervous in certain social settings.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

In the presence of others, I feel apprehensive about my physique or figure.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

I am comfortable with how fit my body appears to others.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

It would make me uncomfortable to know others were evaluating my physique or figure.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

When it comes to displaying my physique or figure to others, I am a shy person.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

I usually feel relaxed when it's obvious that others are looking at my physique or figure.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

When in a bathing suit, I often feel nervous about how well proportioned my body is.

- Not at all characteristic of me
- Slightly characteristic of me
- Moderately characteristic of me
- Very characteristic of me
- Extremely characteristic of me

Appendix D: Multidimensional Body-Self Relations Questionnaire (Appearance Evaluation)

The following pages contain a series of statements about how people might think, feel or behave. You are asked to indicate the extent to which each statement pertains to you personally.

My body is sexually appealing

- Definitely Disagree
- Mostly Disagree
- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

I like my looks just the way they are

- Definitely Disagree
- Mostly Disagree
- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

Most people would consider me good-looking

- Definitely Disagree
- Mostly Disagree
- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

I like the way I look without my clothes on

- Definitely Disagree
- Mostly Disagree
- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

I like the way my clothes fit me

- Definitely Disagree
- Mostly Disagree
- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

I dislike my physique

- Definitely Disagree
- Mostly Disagree
- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

I am physically unattractive

- Definitely Disagree
- Mostly Disagree

- Neither Agree Nor Disagree
- Mostly Agree
- Definitely Agree

Appendix E: Weight Pressure in Sport – Male (WPS-M) (Male Athletes Only)

Please choose the response that best describes how you truly feel about your current situation and team. There are no right or wrong answers, so please answer honestly.

My coach places an emphasis on team members' weight.

- Never
- Rarely
- Sometimes
- Often
- Usually
- Always

The leanest athletes get chosen for the best positions on the team or the best positions in a game/competition.

- Never
- Rarely
- Sometimes
- Often
- Usually
- Always

My teammates notice if I put on weight.

- Never
- Rarely
- Sometimes
- Often

Usually

Always

My team performance would improve if I gained at least 5 pounds of muscle.

Never

Rarely

Sometimes

Often

Usually

Always

My coach encourages athletes to gain muscle mass.

Never

Rarely

Sometimes

Often

Usually

Always

My team uniform makes me aware of my build.

Never

Rarely

Sometimes

Often

Usually

Always

The crowd scrutinizes my body and makes me concerned about my weight and appearance.

Never

Rarely

Sometimes

Often

Usually

Always

Body weight and appearance are important to my coach.

Never

Rarely

Sometimes

Often

Usually

Always

Body weight and appearance are important to my family.

Never

Rarely

Sometimes

Often

Usually

Always

Body weight and appearance are important to my friends outside of my sport.

Never

Rarely

Sometimes

Often

Usually

Always

Any of my body flaws are readily apparent in my uniform.

Never

Rarely

Sometimes

Often

Usually

Always

Weigh-ins are held periodically throughout the season.

Never

Rarely

Sometimes

Often

Usually

Always

My coach notices changes in my weight.

Never

Rarely

Sometimes

Often

Usually

Always

The leanest team members are at a distinct performance advantage.

Never

Rarely

Sometimes

Often

Usually

Always

Appendix F: Weight Pressure in Sport – Female (WPS-F) (Female Athletes Only)

Please choose the response that best describes how you truly feel about your current situation and team. There are no right or wrong answers, so please answer honestly.

My team/sport has a weight requirement to try out

- Never
- Rarely
- Sometimes
- Often
- Usually
- Always

My team/sport should have a weight limit

- Never
- Rarely
- Sometimes
- Often
- Usually
- Always

My teammates notice if I put on weight.

- Never
- Rarely
- Sometimes
- Often

Usually

Always

My coach encourages female team members to maintain a below average weight.

Never

Rarely

Sometimes

Often

Usually

Always

The lightest female team members are at a distinct performance advantage.

Never

Rarely

Sometimes

Often

Usually

Always

My team uniform makes me conscious of my bodily appearance.

Never

Rarely

Sometimes

Often

Usually

Always

The crowd scrutinizes my body and makes me concerned about my weight and appearance.

Never

Rarely

Sometimes

Often

Usually

Always

Body weight and appearance are important to my coach.

Never

Rarely

Sometimes

Often

Usually

Always

Body weight and appearance are important to my family.

Never

Rarely

Sometimes

Often

Usually

Always

Body weight and appearance are important to my friends outside of my sport.

Never

Rarely

Sometimes

Often

Usually

Always

Any of my body flaws are readily apparent in my uniform.

Never

Rarely

Sometimes

Often

Usually

Always

Other team members make comments if a teammate gains weight.

Never

Rarely

Sometimes

Often

Usually

Always

My coach notices if I gain weight.

Never

Rarely

Sometimes

Often

Usually

Always

My coach encourages athletes to drop pounds.

Never

Rarely

Sometimes

Often

Usually

Always

There are pressures associated with my sport to lose weight.

Never

Rarely

Sometimes

Often

Usually

Always

There are pressures associated with my sport to maintain a below average weight.

Never

Rarely

Sometimes

Often

Usually

Always

Appendix G: IRB Approval



Office of Research and Sponsored Programs | West Chester University | Wayne Hall
 West Chester, PA 19383 | 610-436-3557 | www.wcupa.edu

Protocol ID # 20190909A

This Protocol ID number must be used in all communications about this project with the IRB.

TO: Jessica Nugent and Lindsey Keenan
 FROM: Nicole M. Cattano, Ph.D.
 Co-Chair, WCU Institutional Review Board (IRB)
 DATE: 9/9/2019

Project Title: The relationship between general anxiety, social physique anxiety, and body image in collegiate student-athletes and non-athletes

Date of Approval: 9/9/2019

Expedited Approval

This protocol has been approved under the new updated 45 CFR 46 common rule that went in to effect January 21, 2019. As a result, this project will not require continuing review. Any revisions to this protocol that are needed will require approval by the WCU IRB. Upon completion of the project, you are expected to submit appropriate closure documentation. Please see www.wcupa.edu/research/irb.aspx for more information.

Any adverse reaction by a research subject is to be reported immediately through the Office of Research and Sponsored Programs via email at irb@wcupa.edu.

Signature:

A handwritten signature in black ink, appearing to read "Nicole M. Cattano".

Co-Chair of WCU IRB

WCU Institutional Review Board (IRB)
 IORG#: IORG0004242
 IRB#: IRB00005030
 FWA#: FWA00014155

Appendix H: Informed Consent

CONSENT FORM**Project Title: The Relationship Between General Anxiety, Social Physique Anxiety, and Body Image in Collegiate Student-Athletes and Non-Athletes**

Investigator(s): Jessica Nugent and Lindsey Keenan

Project Overview:

Participation in this research project is voluntary and is being conducted by Jessica Nugent as part of their Master's Thesis to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate student-athletes and non-athletes. Your participation will take about 10 minutes to sign the informed consent and take the survey. Upon completion of the survey you will get the opportunity to enter for the chance to win one of five \$10 Wawa gift cards. The risks from participating in this study are minimal. You may become aware of, or more aware of, your mental health as it relates to anxiety, body image, and/or sport pressures. If you were unaware of your mental health prior to participating in this study, you may experience a sense of discomfort, doubt, etc. At the end of the consent form and the end of the study, information for the West Chester University counseling center will be provided to you. If any questions or concerns arise due to participation in this study contact information for both researchers will be provided as well. There is the possibility of becoming aware of your mental health and gaining the opportunity to improve your overall well-being and quality of life. You will also gain access to information for the West Chester University counseling center at two different times during this study. This research may help improve the knowledge and understanding of the relationship between general anxiety, social physique anxiety, and body image in the college population.

The research project is being done by Jessica Nugent and Lindsey Keenan as part of Jessica's Master's Thesis to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate student-athletes and non-athletes. If you would like to take part, West Chester University requires that you click "I consent" when you are finished reading this consent form.

You may ask Jessica Nugent or Lindsey Keenan any questions to help you understand this study. If you don't want to be a part of this study, it won't affect any of your studies from West Chester University. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

- **What is the purpose of this study?**
 - The purpose of this study is to examine the relationship between general anxiety, social physique anxiety, and body image in collegiate student-athletes and non-athletes.
- **If you decide to be a part of this study, you will be asked to do the following:**
 - Sign the informed consent
 - Take the survey

This study will take about 10 minutes of your time.

- **Are there any experimental medical treatments?**
 - No
- **Is there any risk to me?**
 - Possible risks or sources of discomfort include: becoming aware of, or more aware of, your mental health as it relates to anxiety, body image, and/or sport pressures. If you were unaware of your mental health prior to participating in this study, you may experience a sense of discomfort, doubt, etc. At the end of the consent form and the end of the study, information for the West Chester University counseling center will be provided to you. If any questions or concerns arise due to participation in this study contact information for both researchers will be provided as well
 - If you become upset and wish to speak with someone, you may speak with Jessica Nugent (researcher): (267) 570-6127. Lindsey Keenan (researcher): (609) 436-2753.
 - If you experience discomfort, you have the right to withdraw at any time.
- **Is there any benefit to me?**
 - Benefits to you may include: the possibility of becoming aware of your mental health and improving your overall well-being and quality of life. You will also gain access to information for the West Chester University counseling center at two different times during this study.
 - Other benefits may include: the potential to improve the knowledge and understanding of the relationship between general anxiety, social physique anxiety, and body image in the college population.
- **How will you protect my privacy?**
 - The session will **not** be recorded.
 - Your records will be private. Only Jessica Nugent, Lindsey Keenan, and the IRB will have access to your name and responses.
 - Your name will **not** be used in any reports.
 - Records will be stored:
 - Password Protected File/Computer
 - All responses from participants will be anonymous as well.
 - Records will be destroyed after manuscript development, but no less than three years
- **Do I get paid to take part in this study?**
 - You get the opportunity to enter for the chance to win one of five \$10 Wawa gift cards.
- **Who do I contact in case of research related injury?**
 - For any questions with this study, contact:
 - **Primary Investigator:** Jessica Nugent at 267-570-6127 or JN827717@wcupa.edu
 - **Second Investigator/Faculty Sponsor:** Lindsey Keenan at 610-436-2753 or LKeenan@wcupa.edu
- **What will you do with my Identifiable Information/Biospecimens?**
 - Not applicable.

For any questions about your rights in this research study, contact the ORSP at 610-436-3557.

By clicking I CONSENT, you provide permission and consent to take part in this research study.

This project has been approved by the West Chester University Institutional Review Board for the Protection of Human Subjects.

I CONSENT

I CONSENT

Approval Dates: 9/10/2019

Office of Research and Sponsored Programs:

(610) 436-3557

West Chester University Counseling & Psychological Services

Lawrence Center, Second Level

705 S. New Street

West Chester, PA 19383

Phone: 610-436-2301

Appendix I: Letter of Support: Kellianne Milliner, Associate Athletic Director

8/8/2019

To Whom it May Concern:

Please accept this letter as my acknowledgment of the research study titled, *[The relationship between general anxiety, social physique anxiety, and body image in collegiate student-athletes and non-athletes](#)*, being conducted through the Department of Sports Medicine by graduate student Jessica Nugent and faculty member Dr. Lindsey Keenan.

An anonymous survey will be used in this study to assess general anxiety, social physique anxiety, body image, and weight pressures in sport. As Associate Athletic Director, I am aware that this study will be conducted with all West Chester University NCAA varsity athletes and students enrolled in two sections of a freshmen undergraduate course in the college of health sciences. I will forward the Qualtrics link to the student-athletes to invite them to participate in this study.

Thank you,

A handwritten signature in black ink that reads "Kellianne Milliner".

Kellianne Milliner
Associate Athletics Director
West Chester University