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The Relationship Between Physical Self-Concept, Body Image Dissatisfaction and Competition Anxiety in Female "Aesthetic" and "Non-Aesthetic" Collegiate Athletes

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THE RELATIONSHIP BETWEEN PHYSICAL SELF-CONCEPT, BODY IMAGE
DISSATISFACTION AND COMPETITION ANXIETY IN FEMALE “AESTHETIC”
AND “NON-AESTHETIC” COLLEGIATE ATHLETES

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ABSTRACT

The purpose of this study was to examine the relationship of physical self-concept and competitive trait anxiety through the use of body image dissatisfaction in female aesthetic and non-aesthetic athletes. While there was much published research available that was focused upon physical self-concept and competition anxiety, nothing done previously emphasizes the relationship between these variables while taking sport type (aesthetic or non-aesthetic) into account. The present study investigated the predictive qualities of physical self-concept and body image dissatisfaction for competitive trait anxiety in female aesthetic and non-aesthetic athletes. Female athletes from gymnastics and diving represented aesthetic athletes (n=52) and female athletes from swimming, volleyball, basketball, cross country, track, and golf represented non-aesthetic athletes (n=45). All participants competed at Division I universities located in the Southeastern United States and participants completed a survey comprised of three questionnaires that assessed: (1) physical self-concept, (2) body image dissatisfaction, and (3) competitive trait anxiety.

Results indicated no significant difference between the sport types regarding physical self-concept and body image dissatisfaction, however, aesthetic athletes reported significantly higher levels of competitive trait anxiety than non-aesthetic athletes. A moderate negative correlation was found among the five subscales of physical self-concept, body image dissatisfaction, and competitive trait anxiety in aesthetic athletes. This indicated that low physical self-concept is associated with high body image dissatisfaction and high competitive trait anxiety in aesthetic athletes. A significant positive correlation between body image dissatisfaction and competitive trait anxiety was found in aesthetic athletes, meaning, a dissatisfied body image is associated with high levels of competitive trait anxiety.

Physical self-concept was shown to have stronger causal paths to competitive trait anxiety.
anxiety, as well as body image dissatisfaction in aesthetic athletes than in non-aesthetic athletes. Further research in the area of physical self-concept, body image dissatisfaction, and competitive trait anxiety is needed to understand the explanatory power of the variables. Detailed athlete-specific instruments assessing body image dissatisfaction is recommended.
CHAPTER ONE
INTRODUCTION

Contemporary North American Society tends to hold a stereotypical view of the attractive woman as one who is “firm but shapely, fit but sexy, strong but thin,” (Markula 1995, p.424). In particular, sports that emphasize leanness, such as gymnastics, figure skating, and diving, are also influenced by this ideal. Although judges do not admittedly incorporate “beauty” as a variable in their scoring, certain sports emphasize aesthetic performance in addition to skill. Gymnastics, diving, and cheerleading are examples of subjectively judged sports that place importance on a lean physique for successful performance. Linder and Caine (1992) found that compared to lower level gymnasts, high level gymnasts had less body fat, thus suggesting that those with less body fat could perform better. In another study Rose, Sherman, and Thompson (1996) investigated the relationship between Body Mass Index (BMI)-a measure of an individual’s height/weight ratio-and athletic performance in elite gymnasts. Their findings suggested that a lower BMI score is strongly related to better performance.

In addition to performing skillfully, athletes in certain sports are often expected to present an aesthetically appealing body (Calabrese & Kirkendal, 1983; Hamilton, 1986). For instance, cheerleaders are expected to attract the attention of spectators, and therefore, ‘physical attractiveness’ was incorporated into the selection process of members of a cheerleading squad (National Cheerleaders Association, 1984). The positive correlation between a lean physique and successful performance is well established in the so-called aesthetic sports (Calabrese & Kirkendal, 1983; Hamilton, 1986; Linder & Caine, 1992; Rose, Sherman, & Thompson, 1996). This erroneously suggests that the more aesthetic appeal provided by the performer—the more successful her performance ought to be. Unfortunately, this implication may have a detrimental impact upon the athlete’s self-concept, specifically the physical self-concept. It might
conceivably also affect the athlete’s competitive anxiety level. In addition, the athlete may be motivated to pursue deviant or unhealthy methods of achieving reduced body weight such as, diet restriction or disordered eating patterns. This could have deleterious physical, as well as, psychological affects on the athletes. Therefore, it is important to study physical self-concept and competition anxiety within “aesthetic sport” athletes. The relationship between physical self-concept, competition anxiety, and body image dissatisfaction in female aesthetic and non-aesthetic athletes needs to be determined to establish if there is a difference between the two athletic types. A review of existing literature provides support of aesthetic athletes possessing a high physical self-concept, high competition anxiety levels, and body image dissatisfaction. However, the relationship of the three variables in aesthetic and non-aesthetic athletes has yet to be established.
CHAPTER TWO
LITERATURE REVIEW

The following review of literature addresses physical self-concept, body image dissatisfaction, and competition anxiety in relation to aesthetic and non-aesthetic sport. Terms relevant to the study in this thesis are operationally defined as well as are the aforementioned psychological constructs. An *aesthetic athlete* is one who competes on a varsity team for an NCAA Division I school. Physical appeal is typically incorporated in the evaluation of her competitive performance. Conversely, a *non-aesthetic athlete* is an athlete currently competing on a varsity team for an NCAA Division I school whose performance does not have an element of physical appeal and is judged objectively. Physical self-concept (PSC) is a person’s perceptions of herself formed through experience with and interpretations of her environment related to her physical domain (Shavelson, Hubner, & Stanton, 1976). PSC is linked to *body image dissatisfaction* (BID). BID is the subjective difference between an athlete’s current body image (i.e., her mental representation of her body), and her ideal body image (i.e., the mental representation she holds of the physique necessary for success in her sport). A link is established between physical self-concept, body image dissatisfaction, and the concept of *competitive trait anxiety* (CTA). CTA is defined as a tendency to perceive competitive situations as threatening and to respond to these situations with state anxiety, or the subjective consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system (Spielberger, 1966).

*Self-Concept Theories*

Self-concept is a person’s perceptions of himself formed through experience with and interpretations of the environment. These perceptions are influenced by a number of factors such as evaluations of significant others, reinforcements, and attributions of
behavior (Shavelson, Hubner, & Stanton, 1976). Contemporary theories and definitions of self-concept stem from William James’ theory (1890, 1963) over a century ago. He hypothesized that humans distinguish between the self as a subject (the “I” self) and the self as an object (the “Me” self). The “I” instigates change or action, while the “Me” represents the accumulation of self-knowledge (James, 1890, 1963). The “Me” self laid the foundation for future self-concept theories (Coopersmith, 1967; Marsh & Shavelson, 1985; Marx & Winne, 1978; Shavelson, et al., 1976; Soares & Soares, 1977).

Self-concept was represented by a variety of models. Coopersmith (1967) was the first to propose a unidimensional model, where there is one general factor of self-concept that governs more definitive factors. Coopersmith (1967), as well as Marx and Winne (1978), argued that the facets of self-concept are so dominated by a general factor that it is impossible to differentiate between them. Coopersmith (1967) claimed that if the adolescents made a distinction of their worthiness it was within the realm of a general appraisal; therefore disregarding the notion of distinguishable facets of self-concept. Mark and Winne (1978) compared the responses of three commonly used self-concept instruments all measuring different facets. They found some agreement among responses across the instruments, but the responses to the different scales could not be differentiated. Since they found more support for convergence than divergence, they concluded that self-concept was more of a unitary concept than one that can be separated into subparts.

In contrast to the unidimensionality concept, subsequent research has supported the multidimensionality of self-concept (Marsh & Shavelson, 1985; Shavelson, et al. 1976; Soares & Soares, 1977). While their conceptualization agreed with theorists that presented a multifaceted, hierarchical structure to self-concept, Soares and Soares (1977) argued that the low correlations among different aspects of self-concept suggested a model that required all the factors to be uncorrelated. Shavelson et al. (1976) and later a revised version with Marsh in 1985, presented the popular theory of self-concept as a multidimensional, hierarchical structure. The postulation of this theory was an important basis for the advancement of research of self-concept and will be the basis of this study in particular.
Shavelson et al. (1976) broadly defined self-concept as a person’s view of himself created through experience with and interpretations of his surroundings. These interpretations are influenced by significant other’s evaluations, reinforcements, and attributions of the individual’s behavior. Shavelson et al. described the effects of this concept as cyclical. Self-perceptions influence an individual’s behavior, and that behavior influences the way in which the individual perceives him- or herself. Furthermore, Shavelson et al. believed that self-concept is important as both an outcome and as a mediating variable that helps to explain other outcomes. They identified seven features that are critical to their definition of self-concept:

1. Self-concept is organized or structured; in that individuals categorize the immense amount of information they have about themselves and relate this information to one another.
2. It is multifaceted, and the particular facets represent a self-referent category system adopted by an individual.
3. It is hierarchical, with perceptions of personal behavior in specific situations at the base of the hierarchy, inferences about the self in broader domains (i.e., academic, social, and physical) at the middle of the hierarchy, and a global, general self-concept at the apex.
4. General self-concept is stable, but as an individual descends the hierarchy, self-concept becomes increasingly situation-specific and less stable.
5. As an individual develops, self-concept becomes increasingly multifaceted as the individual moves from infancy to adulthood. Preadolescents have self-concepts that are global and undifferentiated. Self-concept becomes differentiated and integrated into a multifaceted, hierarchical construct with increasing age.
6. Self-concept has both a descriptive and an evaluative aspect such that individuals may describe themselves (“I am happy”) and evaluate themselves (“I do well in gymnastics”). Evaluations can be made against some absolute ideal, comparisons with peers, or expectations of significant others.
7. Self-concept can be differentiated from other constructs to which it is theoretically related. For example, academic achievement should be more highly correlated with academic self-concept than with social or physical self-concept,
and self-concepts in specific school subjects should be more highly correlated with achievement in matching school subjects than achievement in other school subjects.

Shavelson et al. (1976) also produced a blueprint of a possible self-concept model that eventually became consecrated as the intended representation. In this model, general self-concept is at the apex and is divided into two components: Academic self-concept and nonacademic self-concept (including social, emotional, and physical self-concept). Each area of self-concept is divided into sub-areas. Academic self-concept is divided into the sub-areas of English, History, Math, and Science; Social self-concept is divided into the sub-areas of peers and significant others; particular emotional states stem from emotional self-concept; and physical self-concept is divided into the sub-areas of physical ability and physical appearance. These sub-areas extend to the base of the hierarchy where evaluation of behavior in specific situations occurs. This original representation of self-concept paved the way for future researchers to elaborate on and make refinements to a nearly complete model (Marsh & Shavelson, 1985; Shavelson & Bolus, 1982).

Shavelson and Bolus (1982) expanded on the original Shavelson et al. (1976) review by examining the multifaceted, hierarchical structure of academic self-concept. They inspected the hypotheses about the increasing stability of self-concept as an individual approaches the apex of the hierarchy, as well as the causal ordering of academic self-concept. They used a sample of 99 seventh- and eighth-grade boys (n=50) and girls (n=49) from a school in a predominately white, upper middle-class, Los Angeles suburb. Data consisted of self-concept measures (general, academic, English, math, and science) and the adolescent’s grades (English, math, and science), and was collected five months apart. Results supporting the multidimensionality of self-concept reported the five components tested to be unrelated. In support of the hierarchical characteristic of self-concept, general self-concept was most highly correlated with general academic self-concept, less correlated with subject-specific sub-areas, and least correlated with subject grades. Academic self-concept was most highly correlated with subject-specific sub-areas, each which were most highly correlated with subject grades. The results did not indicate that an individual’s self-concept became less stable as it descended the hierarchy. However, this is consistent with the Shavelson’s et al. (1976) fifth definition of self-
concept, which states that self-concept becomes more multidimensional and hierarchical as an adolescent develops. Since the sample that Shavelson and Bolus (1982) used was 12 and 13 year old boys and girls, it is safe to assume that their self-concepts had not reached full development and possessed hierarchical instability.

Marsh and Shavelson (1985) examined a sample of late adolescent responses to a self-concept scale. They found that the correlations among the different facets of self-concept was significantly small (mean $r = .09$). The findings showed the multifaceted aspect of self-concept and “the hierarchical structure found in preadolescent self-concept has nearly vanished,” (p.115). This is consistent with expectations of late-adolescent self-concept (Shavelson et al., 1976) however; the degree to which the facets were uncorrelated was not an expectation. In essence, Marsh and Shavelson (1985) found that the structure of higher order self-concept is more complicated than first hypothesized, and the hierarchical structure of self-concept becomes weaker with age, where more importance is placed on a sub-area self-concept than that of general self-concept found at the apex of the hierarchy.

**Physical Self-Concept**

Much of the self-concept literature has reported developments within the realm of academics (Coopersmith, 1967; Marsh & Shavelson, 1985; Shavelson et al., 1976; Shavelson & Bolus, 1982). However, it is important to explore the nonacademic facets of self-concept as well. For this study in particular, the relationship between self-concept and sport involvement is important. It has been proven that as an individual develops, facets of self-concept become increasingly independent (Marsh & Shavelson, 1985; Shavelson et al. 1976; Shavelson & Bolus, 1982). In today’s society where much importance is placed on athletic involvement; the self-concept of an adolescent may depend on his or her achievement in athletics. In accordance with this statement, there are researchers who used the model proposed by Marsh and Shavelson (1985) to examine the non-academic facet of self-concept, particularly physical self-concept (PSC; Brettschneider & Brautigam, 1990; Fox, 1990; Fox & Corbin, 1989; Marsh, 1998; Marsh & Redmayne, 1994; Mrazek, 1987).

A definition of PSC includes Shavelson’s et al. definition of self-concept but applied to an individual’s physical domain. Marsh (1998) provided the example that
“physical self-concept may be influenced by an experimental intervention involving
sport, exercise, or a weight loss program, but physical self-concept may also function as a
behavioral mediator of the influence of an intervention (e.g., subsequent exercise
adherence),” (p.238).

According to a review of identity, sport and youth development (Brettschneider &
Heim, 1997), a study conducted by Brettschneider and Brautigam (1990) revealed how
adolescents viewed their physical selves and the relationship with sport involvement.
The main focus of this study was the structure of physical self-concept and the effects of
age, gender, and education on adolescent’s self-perceptions. Attributes that the questions
addressed were sport competence and fitness (e.g., “I take care to keep fit” and “I think it
is important to be sporty”), physical self-acceptance, tidy appearance, figure, health,
weight and diet. The results of their study showed a six-factor solution for the PSC. The
factors were: (a) sport competence and fitness, (b) appearance, referring to being well
groomed, (c) cleanliness and good hygiene, (d) appearance, focusing on figure, (e) weight
control, and (f) regulation of eating habits. They also found that females placed more
emphasis on the appearance factors. The authors confirmed the results were consistent
with other findings of a multidimensional PSC structure (Marsh 1988, Marsh and
Redmayne, 1994; Mrazek, 1987).

Marsh and Redmayne (1994) presented support to a multidimensional,
hierarchical physical self-concept. They required adolescent girls to complete various
physical fitness tests that correlated with physical self-concept items from the Sutherland
and Marsh (1982) instrument and it’s a priori scales. The six physical self-concept items
were: (1) physical appearance, (2) physical ability, (3) strength, (4) balance, (5)
flexibility, and (6) endurance. The data presented clear support for the six a priori
physical self-concept scales. There were significant correlations between the self-
concept responses and the physical fitness indicators. However, there was also a
significant limitation to the study. The authors claimed the PSC of 13-year-old girls
might be volatile due to the physiological and psychological changes associated with the
onset of puberty and a sample of older girls might produce different relations between
self-concept and external criteria. Although this study shed light on the structure of
physical self-concept and sport, it did not provide any insight regarding the realm of athletics.

Physical Self-Concept of Elite Athletes

Sport activities can range from weekend-recreation to competitive activities, and consist of physical education students to elite professional athletes. Marsh, Perry, Horsely, and Roche (1995) based their study on previous research (Jackson & Marsh, 1986; Marsh, 1993; Marsh & Peart, 1988) that predicted elite athletes, compared to non-athletes, would have higher Physical Ability self-concept but women athletes would not differ on the Physical Appearance self-concept. Sports represented in this sample were basketball, cycling, field hockey, netball, rowing, soccer, swimming, and water polo with no aesthetic sport represented. The results of this study were consistent with a priori predictions that the largest group difference was for Physical Ability self-concept (AIS athletes versus non-athletes), while there were no considerable differences in Physical Appearance self-concept. This study and a similar study conducted by Marsh, Hey, Roche, and Perry (1997), using a larger sample of athletes and non-athletes lends support to the differentiation of elite athlete and non-athlete physical self-concepts. However, the authors suggested an important direction for future research, pertinent to this study, was the investigation of Physical Appearance self-concepts of athletes in sports in which physical appearance is emphasized (e.g., figure skaters, gymnastics, & body building).

Marsh (1998) reported age and gender effects in Physical self-concepts for adolescent elite athletes and non-athletes in a longitudinal study. He collected responses to a physical self-concept inventory four times over a span of two years for all the participants. The inventory measured nine specific components of physical self-concept: (1) appearance, (2) strength, (3) condition/endurance, (4) flexibility, (5) health, (6) coordination, (7) activity, (8) body fat, and (9) sport. While the general result of the study was that physical self-concept of elite athletes was higher than non-athletes, the separate analysis of each physical self-concept scale provided additional information. Female athletes reported higher overall physical self-concept than female non-athletes, but the older females showed a lower physical self-concept than the younger females in both groups. The same results were evident in the physical appearance scale. Older female athletes had a lower physical appearance rating than younger female athletes and
the same applies to the female non-athlete group. Although Marsh’s (1998) study 
supported the discrimination between the physical self-concept of elite athletes and non- 
athletes, it also revealed the problem of reported low scores on the physical appearance 
scales for female athletes.

The existing literature supports the different physical self-concepts of elite 
athletes and non-athletes (Marsh, Perry, Horsely, & Roche, 1995; Marsh, 1998; Marsh, 
Hey, Roche, & Perry, 1997). Male and female athletes possess higher physical self-
concepts than non-athletes (Brettscneider & Brautigam, 1990; Marsh & Redmayne, 1994; 
Marsh, Perry, Horsely, & Roche, 1995; Marsh, 1998; Marsh, Hey, Roche, & Perry, 
1997). Male athletes possess higher physical self-concepts than female athletes, and 
typically place more importance on physical ability than physical appearance 
(Brettscneider & Brautigam, 1990). However, there is little research on whether the type 
of sport, such as aesthetic versus non-aesthetic, could have an effect on the female 
athlete’s physical self-concept, an aspect addressed in the current study.

Body Image and Athletes

Research has shown that female athletes place more importance on the physical 
appearance aspect of physical self-concept than the physical ability aspect (Brettscneider & 
Brautigam, 1990). As a consequence, one may wonder whether these female athletes 
also experience a dissatisfied body image because their sport (e.g. gymnastics, figure 
skating, & dance) requires aesthetic appeal as well as a technical performance. Sports 
requiring grace and aesthetic appeal in addition to the mechanical skills emphasize that 
athletes maintain a petite and thin appearance. Research has indicated that an athlete’s 
body shape often is perceived as impacting their score (Brennan, 1998; Krane, Greenleaf 
& Snow, 1997; Ryan, 1995). For female athletes competing in these sports, it is apparent 
that a slim, attractive body clinches an important performance advantage. Consequently, 
the female athlete “confronts body image pressures at a number of levels, ranging from 
the performance-related pressures reinforced by coaches and trainers to those inherent in 
the judging criteria that give physically attractive athletes the ‘winning edge’” (Davis, 
1997, p.162). Davis and Cowles (1989) found that female athletes in sports in which a 
slender body build is the idealized shape (e.g., gymnastics and long-distance running) 
reported a greater degree of body dissatisfaction than athletes in other sports, regardless
of actually weighing less than the other group. Likewise, Petrie (1993) found that 50% of a group of national-level gymnasts desired to lose weight, despite having BMI rating fall in the low normal range. Clearly, female athletes emanate a preoccupation with their physique.

Even though a woman has an appealing physique, a distorted perception of her body can cause dissatisfaction. In a comparison of athletes’ and non-athletes’ perceptions of their body shape, Hallinan, Pierce, Evans, DeGrenier, and Andres (1991) found elevated dissatisfaction between both women athletes and non-athletes. They had participants identify their perceived current and ideal body shapes on a nine-figure silhouette scale. Both women athletes and non-athletes judged themselves to be heavier than they conceived average to be. In a qualitative study of body image concerns in female athletes, Krane, Waldron, Michalenok, and Stiles-Shipley (2001) found similar results. When discussing their bodies within a social context, the athletes expressed the most dissatisfaction, although, they had already expressed pride in their well-trained physique for their sport. Krane et al. claimed that this is a conflicting image. As athletes, these females have developed strong, muscular bodies; yet these bodies do not conform to the cultural ideal of a toned but not too muscular body (Markula, 1995). Hallinan et al. concluded that when “women who are rewarded for appearance and coordination at the expense of agility, strength, speed, and vigor, a perpetuation of distortion of body image by women can be expected” (p.129).

Davis (1992) conducted a study examining the body image of high-performance athletes claiming that these athletes experienced the most pressure to conform to ideal standards of body size. The initial results found that 71% of the female athletes wanted to lose weight, and a third of those who wanted to lose weight had a BMI score lower than average. Results also indicated that the perceived body size of the athletes accounted for the largest proportion of the variance in weight concerns. Remarkably, they found that weight preoccupation occurred most frequently among gymnasts and synchronized swimmers (e.g., aesthetic athletes) as opposed to basketball players or field hockey players (e.g., non-aesthetic athletes). The findings of this study support the strong pressures for female athletes to minimize body fat to very low levels. Specifically,
the results suggest that even high-performance athletes are not accustomed to the rigorous aesthetic and performance demands of their sport.

There seems to be little doubt that an environment that fosters physical appeal as a key to success can be detrimental to the perceptions an athlete has about her body. The overlapping influence this circumstance could have on an athlete’s self-concept or competitive anxiety has hardly been explored. Therefore, the examination of the relationship between physical self-concept and competition anxiety in relation to an athlete’s body image and the type of sport is necessary to benefit the future physical and psychological success of female athletes.

*Anxiety Theories*

There are causes for an athlete’s anxiety prior to competition. It is prudent to consider that an athlete competing in an aesthetic sport feels more competition anxiety than an athlete competing in a non-aesthetic sport. The well-known association between physical appeal and a successful performance in aesthetic competition could be linked to higher levels of anxiety in athletes who feel their physiques are not satisfactory.

In regards to understanding the concept of competitive anxiety, Martens, Vealey, and Burtons (1990), contended that common terminology is necessary. They utilized Spielberger’s (1966) theory of state-trait anxiety in their competitive anxiety theory. Spielberger (1966) defined state anxiety as “subjective, consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system, (p.17).” He went on to define trait anxiety as “a motive or acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively non-dangerous circumstances as threatening and to respond to these with state anxiety reactions disproportionate in intensity to the magnitude of the objective danger” (p.17).

Other terms requiring clarity are cognitive and somatic anxiety. Martens et al. (1990) referenced Morris, Davis, and Hutchings (1981) as they defined cognitive anxiety as “conscious awareness of unpleasant feelings about oneself or external stimuli, worry, [or] disturbing visual images,” (p.547). Somatic anxiety was then characterized as the perceived physiological elements of the anxiety experience that develop directly from autonomic arousal (i.e., rapid heart rate, clammy hands, & tense muscles).
Additional terms that are closely related to cognitive and somatic anxiety are arousal and stress. Arousal is universally defined as the measurement of the intensity and activation of the biological system. Martens et al. (1990) placed the state of arousal on a continuum from deep sleep to intense excitement. According to Martens et al. (1990), stress has been defined as a stimulus, intervening, and response variable, which can make stress a precipitator, a mediator, and a behavior.

McGrath (1970) conceptualized stress as a process encompassing four events that must be considered: (1) The physical or social environment that places some objective demand on the individual, (2) The individual’s perception of the demand and the decision about how to respond to it, (3) The individual’s actual response to the perceived demand, and (4) The consequences resulting from that response. McGrath defined stress as the imbalance perceived between demand and response capability. However, Spielberger (1972a) defined stress as a stimulus event in an anxiety process. Accordingly, a particular level of stress is perceived to involve a specific level of danger. Stress is limited in Spielberger’s model as precipitator and the subject’s evaluation of the situation as dangerous or as a threat. This results in a state anxiety reaction.

Though McGrath’s (1970) and Spielberger’s (1972a) models of stress appear to be similar, the significant difference is the terms they utilized to describe the overall processes and individual components of their models. Spielberger referred to the overall process as anxiety, whereas McGrath characterized it as stress. Spielberger described the stimulus as stress, while McGrath described it as objective demand. Lastly, where McGrath used the term response to label the actual response of the individual, Spielberger coined the response the state anxiety reaction.

Martens et al. (1990) borrowed from McGrath (1970) and Spielberger (1972a) to produce an independent model of competitive anxiety. They preferred McGrath’s stress to Spielberger’s anxiety to describe the overall process. Marten’s reasoned that anxiety was “too often associated with personality traits, which constitute only the stimulus portion of the anxiety process” (p.8) of Spielberger’s model. Subsequently, stress is “often considered to be more than only a stimulus variable” (p.9). Martens et al. (1990) also used McGrath’s term “objective demand” to refer to the precursor variables that may elicit the perceptions of threat, a term taken from Spielberger’s model. Martens
described the individual’s response to threat using Spielberger’s term state anxiety reaction. Thus, Martens et al. (1990) described the stress process as an objective demand, which elicits the perception of threat, and results in a state anxiety reaction by the athlete.

**Competitive Trait Anxiety**

Martens et al. (1990) defined competitive trait anxiety as a tendency to perceive competitive situations as threatening and to respond to these situations with state anxiety. Competitive trait anxiety is a situation-specific construct that was developed to identify trait anxiety temperaments in competitive sport situations. Martens et al. (1990) applied the competitive process (Martens, 1975) to Spielberger’s (1972b) trait-state theory of anxiety, which is based on the following assumptions:

1. Stimuli that are either external or internal to the person, and that are perceived as threatening, evoke A-state reactions. High levels of A-state are experienced as unpleasant through sensory and cognitive feedback mechanisms.
2. The greater the amount of threat perceived, the more intense the A-state reaction.
3. The longer the person perceives threat, the more enduring the A-state reaction.
4. Compared with persons low in A-trait, persons high in A-trait will perceive more situations as threatening; respond with more intense A-state reactions, or both.
5. Elevated levels of A-state have stimulus and drive properties that may be manifested directly in behavior or that may serve to initiate psychological defenses that have been effective in reducing A-states in the past.
6. Stressful situations frequently encountered may cause an individual to develop specific psychological defense mechanisms that are designed to reduce or minimize A-state.

Martens (1975) outlined his model for the competitive process using the assumptions developed by Spielberger (1972b) in his state-trait anxiety theory. The important feature of Martens’ model is the “cognitive emphasis” (p.14) on the individual as the mediator between stimulus and response. The four components described in
relation to state and trait anxiety are the objective competitive situation, the subjective competitive situation, response, and consequences.

According to Martens (1975) the objective competitive situation encompasses the objective stimuli in the competitive process. Objective stimuli include the type of task, opponent difficulty, playing conditions, rules, and available extrinsic rewards. Martens (1975) considered these stimuli to be the objective demand on the individual. In a competitive situation, this demand is dictated by what the athlete is required to do to obtain a desirable result compared to various standards, including an opponent’s performance, an idealized personal best, or a past performance of the athlete. Since the competitive process is an evaluative situation, Martens (1975) believed threat to arise in this initial facet of the model, possibly causing a rise in state anxiety. Thus, the objective competitive situation is where the source of threat to the athlete may occur.

The next component of the competitive process according to Martens (1975) is the subjective competitive situation. This situation involves how the athlete perceives, accepts, and appraises the objective competitive situation, and is mediated by factors, such as, personality, attitudes, abilities, and other intrapersonal dynamics. Since athletes perceive objective competitive situations differently, their response to the subjective competitive situation are expected to vary according to their mediating factors. Martens, (1975) hypothesized that competitive trait anxiety is an important personality predisposition that can affect the athlete’s perceptions of the competitive situation as threatening or non-threatening.

**Competitive Anxiety and Sport**

There has been a broad spectrum of studies related to competitive anxiety within the realm of sport, including topics pertaining to self-presentation, evaluation, and team versus individual competition (Bray, Martin, & Widmeyer, 2000; James & Collins, 1997; Marchant, Morris, & Anderson, 1998; Martin & Hall, 1997; Martin & Mack, 1996; Passer, 1983; Rainey, Conklin, & Rainey, 1987; Rainey & Cunningham, 1988; Swain & Jones1991; Wark & Wittig, 1979; Wittig, Duncan, & Schurr, 1987; Wong, Lox, & Clark, 1993). Understanding the athlete’s perception of threat in the competitive situation is important to the management of a possible anxiety reaction. The degree to which the athlete perceives threat is another consideration to take into account. Within the realm of
this study, an aesthetic athlete with a high physical self-concept and a dissatisfied body image could experience greater competition anxiety than their peers who do have satisfied body images or participate in non-aesthetic sports due to the perceived threat of their unsatisfactory physique.

An area of research involving competitive trait anxiety is based on Passer’s (1983) hypothesis that competitive trait anxiety is related to fear of failure and fear of evaluation. He evaluated male soccer players’ fear of failure with groups of items that assessed performance expectancies, performance worries, and feelings associated with good and poor performance. The players’ fear of evaluation was assessed with groups of items dealing with evaluation worries and expectancy of criticism. Passer (1983) found that players high in competitive trait anxiety had lower performance expectancies, more frequent performance-related worries, higher expectancies for criticism when playing poorly, and more frequent worries about evaluation than players low in competitive trait anxiety. Also, players high in competitive trait anxiety found failure more emotionally aversive than players low in competitive trait anxiety.

Two studies in particular have examined the effect of evaluative concerns on competitive trait anxiety. Rainey, Conklin, and Rainey (1987) conducted research on junior high school athletes participating in a variety of sports. Using a combination of Martens (1975) and Passer’s (1983) ideas, they hypothesized that athletes high in competitive trait anxiety would report less success in sport, less satisfaction with sport, and a higher value for success in sport than athletes with low competitive trait anxiety. They found that athletes high in competitive trait anxiety reported more frequent worries about making mistakes, losing, not playing well, what their coaches and teammates would think or say about them, and more anticipated feelings of shame and upset when playing poorly than athletes with low competitive trait anxiety. Likewise, Bray, Martin, and Widmeyer (2000) found that youth skiers concerned with the evaluations of spectators and competitors experienced higher anxiety than the skiers who did not have evaluative concerns. The findings also indicated that athletes high in competitive trait anxiety reported more frequent evaluation and performance worries than athletes with low competitive trait anxiety, confirming Passer’s (1983) hypotheses. Rainey et al. and Bray et al. provided support for the general hypothesis that competitive trait anxiety is
related to fear of failure and evaluation, however, some doubts about the response validity were expressed as the sample of athletes were very young.

The relationship between gender and competition anxiety has also been addressed in the literature; specifically the anxiety experienced by females competing in feminine roles. In a preliminary investigation of the relationship between sex roles and competitive trait anxiety, Wark and Wittig (1979) found that males who endorsed a masculine sex role were less anxious regarding sport competition than females who endorsed a feminine sex role. Although this study seemed basic, it laid the foundation for future research to be conducted regarding gender and competition anxiety.

It is a possibility since female aesthetic athletes require femininity in their athletic performance that they could experience higher levels of competition anxiety than female non-aesthetic athletes. Wittig, Duncan, and Schurr (1987) examined the relationship of gender, gender-role endorsement and perceived physical self-efficacy to sport competition anxiety. They found that individuals with high masculine-role endorsements reported less sport competition anxiety than individuals with low masculine-role endorsements, while females endorsing a feminine role had the highest sport competition anxiety. However, they did not limit their study to athletes alone, so factors such as the type of sport in which the athlete participated was not examined. Swain and Jones (1991) found that masculine females had lower anxiety than feminine females who reported the highest anxiety prior to performance. One limitation of this study was that it was conducted on one sport, which makes it difficult to generalize the findings across sports. Different sports could possibly evoke different anxiety responses from athletes.

Since aesthetic athletes commonly compete in individual events it is necessary to review the literature pertaining to anxiety in team versus individual athletes. Martin and Hall (1997) compared the anxiety levels of female figure skaters that competed in both singles freeskating and precision team events. Results indicated that trait anxiety levels were higher prior to the individual events than the team events. Similarly, Wong, Lox, and Clark (1993) found that competitive trait anxiety was higher in females participating in individual sports. Also, females who participated in individual sports reported less confidence than females playing on teams. The researchers concluded that individual
performance evokes a considerably high trait anxiety reaction compared to a team performance.

Another requirement of aesthetic athletes that could be linked to competition anxiety is the presentation of their physique during competition. Martin and Mack (1996) conducted a preliminary study on the relationship between physical self-presentation, social physique anxiety - the self-presentation anxiety related to physique (Hart, Leary, & Rejeski, 1989), and competitive trait anxiety. They found that females with lower physical self-presentation confidence had higher competitive trait anxiety as well as higher social physique anxiety. They concluded that the correlation between competitive trait anxiety and social physique anxiety suggested that females might be threatened not only by negative evaluation of their athletic performance, but also by negative evaluation of their physical appearance. Likewise, James and Collins (1997) conducted a qualitative study of self-presentational sources of competitive stress during athletic performance. The athletes reported experiencing stress brought on by significant others, social evaluation/self-presentational concerns, and competitive anxiety. A gymnast listed officials as a significant other stressor, such as a judge that was hard to impress. They also expressed pressure to attain external standards, and implied overt criticism as a source of self-presentational concern. Sources of competitive anxiety for the athletes included how their opponents ‘looked’, self doubt, and the characteristic cognitive and somatic competitive anxiety. From the athletes’ responses, the authors concluded that sources of stress seem to operate either by increasing the perceived self-presentational importance of the competition, which would elevate self-presentational motivation, or by increasing the likelihood of failure or poor personal performance; lowering self-presentational efficacy.

Numerous studies have evaluated competitive anxiety in sport (Bray, Martin, & Widmeyer, 2000; James & Collins, 1997; Marchant, Morris, & Anderson, 1998; Martin & Hall, 1997; Martin & Mack, 1996; Passer, 1983; Rainey, Conklin, & Rainey, 1987; Rainey & Cunningham, 1988; Swain & Jones 1991; Wark & Wittig, 1979; Wittig, Duncan, & Schurr, 1987; Wong, Lox, & Clark, 1993). Many variables have been explored through Martens et al. (1990) theory of competitive anxiety, including gender and individual versus team performance. Generally, females experienced higher levels of
competitive anxiety than did males (Rainey & Cunningham, 1988; Swain & Jones, 1991; Wark & Wittig, 1979; Wittig, Duncan, & Schurr, 1987), especially the females that endorsed a more feminine role. The literature also supports that individual performances evoke higher levels of competitive anxiety than team performances (Martin & Hall, 1997; Wong, Lox, & Clark, 1993). Another source of competition anxiety is self-presentational concerns of athletes (James & Collins, 1997; Martin & Mack, 1996; Wong, Lox, & Clark, 1993). Research found females participating in individual performances reported lower self-presentation confidence and higher levels of competitive anxiety, as well as other concerns regarding subjective judging and criticism. However, there is a lack of research concerning the type of sport as a variable affecting competitive anxiety. Athletes involved in a sport where appearance is considered in a subjective ruling could experience higher levels of competitive anxiety than an athlete whose performance is objectively determined.

Purpose of the Study

The purpose of this study is to explore the relationships among physical self-concept, body image dissatisfaction, and competition anxiety level in “aesthetic” and “non-aesthetic” female collegiate athletes. According to the proposed model (see Figure 1), the physical self-concept of the athletes is comprised of five domains as defined by the Physical Self-Perception Profile. Physical self-concept is assessed along five categories: (1) perceived sport competence, (2) body attractiveness, (3) physical conditioning, (4) physical strength, and (5) global perception of overall physical self-worth. These dimensions were used to evaluate PSC as seen in the model. PSC is linked to competition anxiety, with body image satisfaction as a mediating variable. Body image dissatisfaction is a latent variable that is assessed using a continuum of figure silhouettes. Previously published findings reviewed in the above discussion suggest that an athlete’s body image satisfaction, that may rely on PSC, appears to be related to competition anxiety.
Figure 1. Proposed model depicting the relationship between physical self-concept (SP = perceived sport competence; CN = physical condition; BA = body attractiveness; ST = physical strength; PS = physical self-worth), and competitive trait anxiety, using body image dissatisfaction (SA = satisfied; DS = dissatisfied), as a mediating variable.

However, the links among physical self-concept, body image dissatisfaction, and competition anxiety levels might differ in aesthetic and non-aesthetic athletes. The current study uses the theory of physical self-concept to examine the possibility that these proposed links could be affected by the type of sport in which she participates. Therefore, the invariance of the model will be examined in aesthetic and non-aesthetic athletes. An aesthetic athlete whose competitive performance is assessed by subjective means might experience higher competition anxiety, mediated by her body image dissatisfaction than a non-aesthetic athlete whose competitive performance is objectively assessed. Also, an aesthetic athlete with low PSC might feel that her competitive performance might rely on her physical grace and appeal, which will result in a higher level of competition anxiety if she displays a dissatisfied body image as well.

Athletes themselves, as well as coaches and sport psychology consultants would benefit from such inquiry in that efforts to prepare performers for competition and counseling athletes whose performances have been disappointing would be enhanced.
Research Hypotheses

Four hypotheses were tested in this study:

(1) Aesthetic athletes will report higher levels of the five domains of physical self-concept, higher levels of competitive trait anxiety, and greater body image dissatisfaction than non-aesthetic athletes.

(2) The five domains of physical self-concept will be negatively correlated with body image dissatisfaction and competitive trait anxiety levels among aesthetic athletes.

(3) There will be a positive correlation between body image dissatisfaction and competitive trait anxiety among aesthetic athletes.

(4) The model in which the five domains of physical self-concept affect competitive trait anxiety, mediated by body image dissatisfaction will fit the data of female aesthetic and non-aesthetic athletes.

Limitations of the Study

The following limitations are recognized in the study’s design and methods.

1. The research will be limited to female collegiate athletes in the Southeastern United States. Therefore, the results may only be generalized to a similar population of athletes.

2. The statistical power of the findings in this study are limited by the lack of availability of a large sample of collegiate female aesthetic athletes.
CHAPTER THREE
METHOD

Participants
The sample for this study consisted of volunteer female athletes currently competing on an NCAA Division I varsity athletic team from a major Southeastern university. The sample was further differentiated based on the type of sport in which participants compete: Aesthetic or non-aesthetic. An aesthetic sport is one in which there is emphasis on physical appearance and in which success is subjectively judged. Gymnastics, diving, equestrian dressage, and cheerleading are considered aesthetic sports. A non-aesthetic sport is one that does not place any emphasis on physical appearance and in which success is objectively judged. Volleyball, soccer, softball, tennis, and golf are considered non-aesthetic sports. There were 52 athletes representing aesthetic sports and 45 athletes representing non-aesthetic sports resulting in a sample size of 97 participants.

Instrumentation

Informed Consent (Appendix C). An informed consent form was administered by the researcher to participants during their athletic practice prior to their completing the other surveys. The purpose of the informed consent form is to obtain permission from each of the participants in their willingness to partake in this study. The form indicates exactly what the study demands, what the participants can expect from the study, the minimal risks and benefits of their participation, and the guarantee of confidentiality. It also states the participants ability to withdraw from the study at any time without penalty and provides the researcher’s contact information if any questions, comments, or concerns arise.

Demographic Information (Appendix D). This form obtained information from the participant regarding their date of birth, height, weight, sport in which they compete, and number of competitive years they have been involved in the sport. It was
administered by the researcher to the participants who completed it before a scheduled practice.

*Physical Self Perception Profile* (PSPP: Fox, 1990; Fox & Corbin, 1989; Appendix E). The Physical Self-Perception Profile is a multidimensional 30-item self-report instrument measuring an individual’s physical self-concept. It features four domain-specific subscales assessing perceived sport competence (SPORT), body attractiveness (BODY), physical condition (CONDITION), and physical strength (STRENGTH), and one subscale that assesses a global perception of overall physical self-worth (PSW). A four-choice structured alternative item format is used with six items per subscale. The subject is first asked which kind of person best describes them (e.g., “Some people always have a really positive feeling about the physical side of themselves” BUT “Others sometimes do not feel positive about the physical side of themselves”) and then to decide to what degree they are that kind of person (e.g., “Sort of true of me” or “Really true of me”). The result is a four choice response. The PSPP was administered to participants in this study by the researcher during a scheduled practice.

Scoring the PSPP involves adding the scores of each subscale. Each response is assigned a value of 1 to 4 points. Each subscale, SPORT, CONDITION, BODY, STRENGTH, and PSW, contains six items ranging from 6 to 24. The negative items are reversed so that the lowest-scoring descriptor is placed first, and items from each of the subdomains are placed in sequence within the complete profile. Therefore, high scores reflect high self-concept. All the subscales have three positive and three negative items except for the STRENGTH subscale which contains four positive and two negative items. An example of a negative item from the SPORT subscale is: “Some people feel they are not very good when it comes to playing sports BUT others feel they are really good at just about every sport.” A positive item from the CONDITION subscale is: “Some people make certain they take part in some form of regular vigorous physical exercise BUT others don’t often manage to keep up regular vigorous physical exercise.” A negative item from the BODY scale is: “Some people feel that compared to most their bodies do not look in the best of shape BUT others feel that compared to most their bodies always look in excellent physical shape.” A positive item from the PSW subscale is: “Some people feel extremely satisfied with the kind of persons they are physically
BUT others sometimes feel a little dissatisfied with their physical selves.” Lastly, a positive item from the STRENGTH subscale is: “Some people feel that they are very strong and have well-developed muscles compared to most people BUT others feel that they are not so strong and their muscles are not very well developed.”

Test-retest findings for this instrument have been reported by Fox (1990) with test-retest reliabilities ranging from .74 to .92 over a 16-day period and .81 to .87 over a 23-day period. Two independent samples reported internal consistency reliability using Cronbach’s alpha, with a range of .81 to .92. Contributions of items to internal consistency were indicated by the correlation of the item to scale total (after elimination of the item). They ranged between .5 and .7 with a mean corrected item-total correlation score for all subscales of .69 for females. All items contributed consistently well to the functioning of their subscale.

Fox and Corbin (1989) found evidence for predictive, construct, and convergent validity of the PSPP. They used discriminant function analysis to test the predictive validity finding strong support for the capability of the Physical Strength, Sports Competence, and Physical Condition subscales to discriminate between active and non-active, as well as high-active and low-active adults. Construct validity was determined using factor analytic findings from both exploratory and confirmatory approaches that provided strong evidence for the five-factor structure of the PSPP, whereas zero-order factor intercorrelations argued for the validity of its hierarchical structured physical self-concept theoretical foundation. The authors also examined the convergent validity of the subscales to external criteria to which they should be logically linked. They found that the three subscales, STRENGTH, SPORT, and CONDITION, were most effective in predicting group membership. For example, STRENGTH was most closely related to weight training, whereas SPORT was associated with ball sports. Gender influenced the external criteria associations for the BODY subscale. The BODY subscale was most closely linked with the CONDITION subscale and endurance exercise for women but closely linked with CONDITION and STRENGTH for men.

Sport Competition Anxiety Test (SCAT: Martens, 1977; Appendix F) The Sport Competition Anxiety Test is a 15-item trait anxiety instrument designed to measure a predisposition to respond with varying levels of state anxiety in competitive sport
situations. It is composed of 10 statements referring to feelings of anxiety spawned by competition (e.g., “Before I compete I feel uneasy”) and 5 spurious statements that are added to reduce response bias (e.g., “I am a good sport when I compete.”). The scale is presented to subjects as the Illinois Competition Questionnaire (or the state of your choice). For this study, the “Florida Competition Questionnaire” was chosen for the title of the instrument. The questionnaire was administered to the participants in this study by the researcher during a scheduled practice.

The SCAT is self-administered with subjects responding to the items on a 3-point Likert-type scale. Scoring SCAT involves assigning values to the possible responses: (a) Hardly ever, (b) Sometimes, (c) Often. The 10 test items are scored by adding the items together with one point for “Hardly ever,” two points for “Sometimes,” and three points for “Often.” The 5 spurious items are not scored. Items 6 and 11 require reverse scoring. The total scores for the SCAT range from 10 to 30, with high scores indicating a high predisposition to respond to competitive situations with state anxiety. SCAT inventories in which one test item is omitted can still be scored, however if more than one item is omitted then the test is invalid. When one item has been omitted from the SCAT the following scoring procedure is used: compute the mean item score for the nine items answered, multiply this value by 10, and then round the product to the nearest whole number.

The test-retest reliability coefficient of the SCAT ranged from .57 to .93 producing a mean of .77 (Martens et al., 1977). Rupnow and Ludwig (1981) reported a KR-20 coefficient range from .95 to .97, indicating a high degree of internal consistency.

Smith, Smoll, and Weichman (1998) established concurrent validity of the SCAT by investigating relations between the SCAT and general trait anxiety inventories. A high degree of correspondence was obtained between the SCAT and the Sport Anxiety Scale (SAS) Somatic Anxiety subscale, concluding that the SCAT has good concurrent validity as a trait anxiety measure (Smith et al., 1990). The construct validity of the SCAT has been reported by Martens (1977) by relating it to other constructs such as locus of control, self-esteem, and sport-specific self-confidence and perceived ability (Betts, 1982; Brustad, 1988; Harter, 1979; Passer, 1983; McKelvie, Valliant, & Asu, 1985; Vealey, 1986).
The Nine Figure Silhouette Scale (Stunkard, Sorenson, & Schulsinger, 1983; Appendix G). The Nine Figure Silhouette Scale is one of many silhouette continuums used to measure body satisfaction (Fallon & Rozin, 1985; Powers & Erikson, 1986). The scale has 9 female silhouettes evenly distributed across the ectomorphic-endomorphic continuum. Each silhouette is numbered with the smallest ectomorph labeled “1” and the largest endomorph labeled “9.” Subjects are instructed to indicate a silhouette that best represents their current body size (the mental representation of their body), and then indicate a silhouette that represents their ideal body size. The survey was administered to the participants by the researcher during a scheduled practice. For this study the subjects were asked to identify the body ideal for success in their sport. Calculating the absolute value of the difference between the subject’s current body size and the subject’s ideal body size produces a positive score. For example, if subject one indicated her current body size as a “5” and her ideal body size as a “3,” her score would be “2”. If subject two indicated her current body size as a “3” and her ideal body size as a “5,” her score would be the absolute value of “-2”, equaling “2”, and her body dissatisfaction would be equal to subject one. Larger scores indicate greater body dissatisfaction. Researchers have established good instrument validity comparing results of silhouette ratings to other body satisfaction scales such as the Body Cathexis Scale, Body Esteem Scale, and Body Dissatisfaction Scale of the Eating Disorders Inventory (Crawford & Eklund, 1994; Furnham, Titman, & Sleeman, 1994; Hallinan & Schuler, 1993; Rozin & Fallon, 1998; Secord & Jourard, 1953; Thompson & Psaltis, 1988).

Procedure

After obtaining permission from the internal review board, contact information was gathered concerning the coaches and athletes of each varsity sport. The researcher then contacted each coach to ask permission to attend a team practice, at which time the researcher administered the questionnaire packet. Each participant was required to sign a consent form (Appendix C) prior to filling out the survey packet, which was completed and immediately returned to the researcher, indicating that she understood the purpose of the study and her rights as a participant. There was no identification required for the surveys except for type of sport in which the athlete participated to ensure confidentiality. Before completing the surveys the researcher told the athletes that the surveys would
assess their feelings about themselves, their bodies, and their anxiety prior to competition. Time was made available for any questions or concerns the participants might have. Deception was not employed. Each athlete who thoroughly completed the consent form and surveys was considered a participant in this study.

**Statistical Analyses**

A Pearson Product Moment Correlation Coefficient (PPMC) was used to estimate the relationship between Physical Self-Concept, as defined by the five subscales of the PSPP (SPORT, CONDITION, BODY, STRENGTH, and PSW), body image dissatisfaction and competitive trait anxiety in aesthetic and non-aesthetic athletes. PPMCs were also conducted to examine the second and third hypotheses that propose the five domains of physical self-concept would be negatively correlated with body image dissatisfaction and competition anxiety in aesthetic athletes, and that body image dissatisfaction would be positively correlated with competitive trait anxiety in aesthetic athletes.

The fifth hypothesis assumed model fit to the data (e.g., physical self-concept affects competitive trait anxiety, mediated by body image dissatisfaction) and was examined using structural equation modeling (SEM).

The SEM is used to find both the direct effects of the type of athlete on PSC and competitive trait anxiety, as well as the indirect effects, with the use of the mediating variable, body image dissatisfaction. The invariance of the model was examined using the type of sport in which the athlete participates. The model is considered recursive, in that it has one direction of causal flow, with no causal feedback loops. Physical self-concept is considered an exogenous variable, since it is not accounted for by the other variables. Variables that are endogenous, or explained by the model, include body image dissatisfaction, and competitive trait anxiety. Latent variables are comprised of PSC and body image dissatisfaction. These variables are not directly observed but consist of multiple observed “indicators” that represent the described variable. PSC consists of the five subscales of the PSPP: perceived sport competence, physical condition, body attractiveness, physical strength, and physical self-worth. Body image satisfaction assesses two components of body image, current and ideal, which result in a measure of
satisfied or dissatisfied body image. Competitive trait anxiety is considered a manifest variable, in which it is observed directly with a single “indicator.”

There are two stages used in the SEM analysis: a confirmatory factor analysis (CFA), to test the measurement model, and a SEM analysis, to test the full model. However, prior to the CFA, it is necessary to produce an observed covariance matrix from the data (Tate, 1998). A CFA will be conducted to estimate and evaluate the hypothesized measurement model containing latent variables with multiple indicators. When this model is acceptable, it is incorporated into the full model, proposing the implied direct, indirect, and total causal effects among the latent variables (Tate, 1998).

The fit indices for examining the model were: (a) $X^2$, in which a small value is wanted, since a value of zero indicates a perfect fit, (b) $X/df$, where $df$ is equal to the number of missing paths in the proposed recursive model, and where a value less than 2.0 or 3.0 is acceptable, (c) the root mean square error of approximation (RMSEA) which assesses differences between reproduced and observed covariances per degree of freedom and where a value of .05 or less indicates a good fit, (d) the comparative fit index (CFI), which indicates how much better the model fits when compared to an independent model, with its value found in the range of 0 to 1, where 1 indicates a perfect fit, and .90 is an acceptable value (Tate, 1998). Finally, there is the possibility that a modification to the model may be necessary. Modification indices may suggest the addition of a new path to the model. Based on the model evaluation, if the initial model is unacceptable and revisions are in order, modification of the model would follow in concurrence with the most appropriate fit.
CHAPTER FOUR
RESULTS

Descriptive Statistics

Prior to testing the study’s hypotheses, descriptive statistics were computed (mean, standard deviation, and skewness) to assure that inferential assumptions were met. These are presented in Table 1. Results showed moderate mean values, revealing no noticeable response bias. However, the variable of Body Image Dissatisfaction showed a positive skewness. All skewness values were within the –2 to +2 range, indicating accepted normality assumption. These values facilitated the investigation of the study’s hypotheses without the need of any value’s alteration.

Table 1
Descriptive statistics for the variables in this study

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale’s Range</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical self-concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport</td>
<td>1-24</td>
<td>17.38</td>
<td>3.32</td>
<td>0.08</td>
</tr>
<tr>
<td>Conditioning</td>
<td>1-24</td>
<td>19.20</td>
<td>2.72</td>
<td>-0.38</td>
</tr>
<tr>
<td>Body</td>
<td>1-24</td>
<td>15.07</td>
<td>4.27</td>
<td>-0.08</td>
</tr>
<tr>
<td>Strength</td>
<td>1-24</td>
<td>18.36</td>
<td>3.34</td>
<td>-0.33</td>
</tr>
<tr>
<td>Physical self-worth</td>
<td>1-24</td>
<td>16.75</td>
<td>3.88</td>
<td>0.01</td>
</tr>
<tr>
<td>Body image satisfaction</td>
<td>0-8</td>
<td>0.85</td>
<td>0.87</td>
<td>1.31</td>
</tr>
<tr>
<td>Competitive trait anxiety</td>
<td>10-30</td>
<td>21.97</td>
<td>4.55</td>
<td>-0.36</td>
</tr>
</tbody>
</table>
Hypothesis Testing

The first hypothesis proposed that aesthetic athletes would report higher levels of the five domains of physical self-concept, higher levels of competitive trait anxiety, and greater body image dissatisfaction than non-aesthetic athletes. A multivariate analysis of variance (MANOVA) was performed to test the first component of this hypothesis, and a univariate analysis of variance (ANOVA) was employed to examine the second and third components of the hypothesis. The statistical effects of the MANOVA are represented in Table 2.

Table 2

**MANOVA for physical self-concept using the five sub-scales as dependent variables and sport type as an independent variable.**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Wilks’ λ</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Scale</td>
<td>0.43</td>
<td>30.70</td>
<td>4, 92</td>
<td>0.00</td>
</tr>
<tr>
<td>B. Sport</td>
<td>-</td>
<td>0.35</td>
<td>1, 95</td>
<td>0.56</td>
</tr>
<tr>
<td>C. A by B</td>
<td>0.95</td>
<td>1.13</td>
<td>4, 92</td>
<td>0.35</td>
</tr>
</tbody>
</table>

The MANOVA failed to reveal a significant sport-type by physical self-concept interaction. More specifically, there was no significant interaction between sport-type and any of the physical self-concept subscales. The means of the physical self-concept scales depicting the significant ($p < .001$) scale effect are presented in Figure 2.
The second component of the first hypothesis assumed aesthetic athletes would possess higher levels of competitive trait anxiety than non-aesthetic athletes. Results indicated sport-type effect on competitive trait anxiety, $F(1, 95) = 9.35$, $p < .003$. Aesthetic athletes reported a higher mean CTA than non-aesthetic athletes ($M=23.23$, $SD=4.18$ vs. $M=20.51$, $SD=4.58$; ES=0.60). The CTA means of the aesthetic and non-aesthetic athletes are presented in Figure 3.

![Figure 3. Means of competitive trait anxiety in aesthetic and non-aesthetic athletes.](image-url)
The third component of the first hypothesis stated that aesthetic athletes would have greater body image dissatisfaction than non-aesthetic athletes. ANOVA results failed to reveal significant sport-type effect on this variable, $F(1, 95) = 0.001, p < 0.98$, indicating no significant difference between the two groups of athletes. The means of body image dissatisfaction for aesthetic and non-aesthetic athletes are presented in Figure 4. In general, the first hypothesis was rejected with respect to no significant difference found between sport-type, physical self-concept and body image satisfaction; but accepted for the higher CTA mean of aesthetic athletes.

![Figure 4. Means of body image dissatisfaction between aesthetic and non-aesthetic athletes.](image)

The second hypothesis proposed the five subscales of physical self-concept would be negatively correlated with body image dissatisfaction and competitive trait anxiety among aesthetic athletes. Pearson product-moment correlations (PPMC) were computed to test this hypothesis. The PPMCs of the five subscales of physical self-concept, body image dissatisfaction, and competitive trait anxiety of both aesthetic and non-aesthetic athletes are presented in Table 3.
Table 3

Correlations between physical self-concept subscales and competitive trait anxiety and body image dissatisfaction in aesthetic and non-aesthetic sport athletes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Aesthetic Sports</th>
<th>Non-Aesthetic Sports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BID</td>
<td>CTA</td>
</tr>
<tr>
<td>Physical Self-Concept</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport</td>
<td>-0.38**</td>
<td>-0.28**</td>
</tr>
<tr>
<td>Conditioning</td>
<td>-0.30*</td>
<td>-0.45**</td>
</tr>
<tr>
<td>Body</td>
<td>-0.41**</td>
<td>-0.48**</td>
</tr>
<tr>
<td>Strength</td>
<td>-0.31*</td>
<td>-0.45**</td>
</tr>
<tr>
<td>Physical self-worth</td>
<td>-0.48**</td>
<td>-0.51**</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  ** p ≤ 0.01

Results indicated a significant (ps ≤ .01 or ≤ .05) negative moderate correlation between the five subscales of physical self-concept, body image dissatisfaction, and competitive trait anxiety. The correlations magnitude ranged between −0.30 to −0.48 for body image dissatisfaction and between −0.28 to −0.51 for competitive trait anxiety. Body image dissatisfaction and competitive trait anxiety correlated strongest with “physical self-worth” and with “body” physical self-concept. It should be noted that in the non-aesthetic athletes, most of the correlations were low and non-significant, except between “physical self-worth” and “body” physical self-concept. Thus, the second hypothesis was verified.

The third hypothesis postulated a positive correlation between body image dissatisfaction and competitive trait anxiety among aesthetic athletes. A PPMC was used to estimate the relationship. Results indicated a significant (p ≤ .01) positive correlation (r = 0.47) between the two variables. A nonsignificant correlation was obtained between
body image dissatisfaction and competitive trait anxiety among non-aesthetic athletes ($r = 0.03$), verifying the third hypothesis.

The fourth hypothesis concerns the model fit, as a whole. It examines the predictive qualities of physical self-concept and body image dissatisfaction on competitive trait anxiety in female aesthetic and non-aesthetic athletes. This hypothesis accounts for the model fit using the observed data of female aesthetic athletes and non-aesthetic athletes. A Structural Equation Modeling procedure was used to test the hypothesis model for each sport type.

Testing of the original model fit for aesthetic athletes proved to be poor (see Figure 5), $\chi^2 = 32.94$, $p < 0.001$, and $\chi^2/df = 3.66$, $p < 0.001$. In addition CFI = 0.92 but RMSEA = 0.23. The regression path between physical self-concept and body image dissatisfaction was $\beta = -0.57$. This indicates that physical self-concept has a causal path with body image dissatisfaction in the expected direction, i.e., the higher the levels of physical self-concept, the higher the levels of body image dissatisfaction. Physical self-concept also had a causal pathway with competitive trait anxiety, $\beta = -2.25$, indicating higher levels of competitive trait anxiety are associated with higher levels of body image dissatisfaction. Finally, the standardized regression value between body image dissatisfaction and competitive trait anxiety was $\beta = 4.16$. This value indicates a strong causal relationship between body image dissatisfaction and competitive trait anxiety. The more body image dissatisfaction an aesthetic athlete feels, the more competitive trait anxiety she will experience.
The current results suggested a modification of adding an error covariance between the physical self-concept subscales “body” and “physical self-worth.” The improvement in the overall model fit due to the modification was good, $\chi^2 = 6.01$, $p \leq 0.001$; $\chi^2/df = 0.75$; CFI = 1.00; and RMSEA = 0.00. Regression values increased between physical self-concept and competitive trait anxiety ($\beta=-2.25$), decreased between physical self-concept and body image dissatisfaction ($\beta=-0.54$), and remained the same between body image dissatisfaction and competitive trait anxiety ($\beta=4.16$). Statistical analysis showed no additional modifications were required. The final model for female aesthetic athletes is presented in Figure 6.

Figure 5. Original model proposed for aesthetic athletes with its standardized regression values, loadings, and $R^2$ values ($^*p \leq .05$).
Figure 6. Final modified model with regression values, loadings, and R² values (*p \leq .05)

Testing of the original model fit for non-aesthetic athletes was poor, χ²=21.92, p \leq .001, and χ²/df = 2.44, p \leq .001. CFI = 0.85 and the RMSEA = 0.18 (see Figure 7). The regression path between physical self-concept and body image dissatisfaction was β=-0.37, indicating high levels of physical self-concept are linked with low levels of body image dissatisfaction. Physical self-concept also had a causal pathway with competitive trait anxiety, β=-1.65, meaning high levels of physical self-concept are associated with low levels of competitive trait anxiety. Lastly, the regression path between body image dissatisfaction and competitive trait anxiety was β=4.57. This value indicates the more body image dissatisfaction an athlete feels, the more competitive trait anxiety she experiences.
The current results suggested a modification of adding an error covariance between the physical self-concept subscales “conditioning” and “strength.” The improvement in the overall model fit due to the modification was good, $\chi^2=11.52$, $p \leq .001$; $\chi^2/df = 1.44$; CFI = 0.97; and RMSEA = 0.10. Regression values increased between physical self-concept and competitive trait anxiety ($\beta=-1.67$), decreased between physical self-concept and body image dissatisfaction ($\beta=-0.36$), and remained the same between body image dissatisfaction and competitive trait anxiety ($\beta=4.57$). Statistical analysis revealed no further modifications were required. The final model for female non-aesthetic athletes is presented in Figure 8.
Results show that the final modified model for aesthetic athletes (see Figure 6) proves to be a better fit to the data than does the final modified model for non-aesthetic athletes (see Figure 8). The model for aesthetic athletes had lower values for $\chi^2$, $\chi^2$/df, and RMSEA, as well as having a higher CFI and p-value than the model for non-aesthetic athletes. The comparative results of the two models are presented in Table 4.

Table 4.

*Comparative Goodness of Fit Statistics for the two sport-type models*

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>$\chi^2$/df</th>
<th>p-value</th>
<th>RMSEA</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetic</td>
<td>6.01</td>
<td>0.75</td>
<td>0.65</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Non-Aesthetic</td>
<td>11.52</td>
<td>1.44</td>
<td>0.17</td>
<td>0.10</td>
<td>0.97</td>
</tr>
</tbody>
</table>
The purpose of this study was to examine the relationships between physical self-concept, body image dissatisfaction, and competitive trait anxiety in female aesthetic and non-aesthetic athletes. The current study proposed that strong correlations would be obtained among physical self-concept, body image dissatisfaction, and competitive trait anxiety in aesthetic type sports. Furthermore, it was believed that aesthetic athletes would show higher levels of physical self-concept, competition anxiety and body image dissatisfaction than non-aesthetic athletes. It was also hypothesized that a predictive relationship among physical self-concept, body image dissatisfaction, and competitive trait anxiety in aesthetic and non-aesthetic athletes would exist. These proposals were developed from theories relevant to the study’s variables.

Marsh and Shavelson’s (1985) self-concept theory was applied to the physical domain by numerous researchers (Brettschneider & Brautigam, 1990; Fox, 1990; Fox & Corbin, 1989; Marsh, 1998; Marsh & Redmayne, 1994). All have concurred that physical self-concept (PSC) is a multidimensional, hierarchical construct. In addition, findings include elite athletes possessing high levels of PSC, levels stabalizing with age, and reported low scores on the body or appearance domain of PSC scales for females (Brettscheider & Brautigam, 1990; Marsh, 1998; Marsh et al., 1995; Marsh et al., 1997; Marsh & Redmayne, 1994). However, few studies addressed the athlete’s sport-type as a factor related to PSC. This point, as well as others pertaining to body image dissatisfaction and competitive trait anxiety, guided the current study’s direction.

Studies have shown that female athletes hold a typically dissatisfied image of their body (Hallinan et al., 1991; Krane et al., 2001; Markula, 1995). Thus, the current study proposed that aesthetic athletes would be more dissatisfied with their body image than non-aesthetic athletes, in turn, affecting their predisposition to competition anxiety. Martens (1975) theory of competitive trait anxiety affirms that the personality
predisposition can affect the athlete’s perceptions of the competitive situation as threatening. Particular studies examining competitive trait anxiety in sport found that female athletes with self-presentational concerns, specifically individual performers, possess high predispositions to competition anxiety (James & Collins, 1997; Martens et al., 1990; Martin & Hall, 1997; Martin & Mack, 1996; Wong et al., 1993). However, previous research has failed to examine sport-type differences in PSC, competitive trait anxiety (CTA), and body image dissatisfaction.

The first hypothesis of this study proposed that aesthetic athletes would have higher levels of the five domains of physical self-concept, higher levels of competitive trait anxiety, and greater body image dissatisfaction than non-aesthetic athletes. Results showed no significant difference between sport-type for the five domains of physical self-concept or body image dissatisfaction. However, there was a significant difference between sport-type and competitive trait anxiety, with aesthetic athletes comprising higher levels of CTA than non-aesthetic athletes.

These findings do not support the proposed hypothesis that aesthetic athletes would possess higher levels of the five domains of physical self-concept than non-aesthetic athletes. However, both aesthetic and non-aesthetic athletes reported high levels of physical self-concept. This is consistent with Marsh et al. (1995) and Marsh et al. (1997) who found that athletes tend to have high levels of physical self-concept. In accordance with Marsh (1998), both athletic sport-types scored lowest on the ‘body’ subscale, which is related to physical appearance. Nonetheless, the hypothesis was not verified probably due to the main factor that the sample was collegiate athletes. To reach a collegiate level of competition, an athlete most likely has an established high level of physical self-concept, regardless of her sport. A sample of adolescent athletes could results in a significant difference of physical self-concept levels between sport-types.

It was also hypothesized that aesthetic athletes possess higher levels of competitive trait anxiety than non-aesthetic athletes. Results indicated that aesthetic athletes had significantly higher levels of competitive trait anxiety than non-aesthetic athletes, thus, verifying the hypothesis. These findings suggest that aesthetic athletes have a greater predisposition to anxiety prior to competitions than non-aesthetic athletes. This finding supports other studies reporting high predispositions to competition anxiety.
in individual female athletes with self-presentational concerns (James & Collins, 1997; Martens et al., 1990; Martin & Hall, 1997; Martin & Mack, 1996; Wong et al., 1993). It is argued that aesthetic athletes experience greater levels of anxiety than non-aesthetic athletes due to their performance environment. An aesthetic athlete’s competitive and subjectively evaluated environment could evoke greater levels of anxiety than a non-aesthetic athlete’s competitive objective-oriented environment because of its evaluative nature related to appearance and form. The pressure to exude aesthetic appeal thus increases the anxiety experienced by the aesthetic athlete, in line with Wittig, et al. (1987) findings on females where those endorsing femininity experienced greater anxiety than those not endorsing a feminine role.

It was expected that the aesthetic athletes would have greater body image dissatisfaction than non-aesthetic athletes. However the difference between the two samples was not significant. These findings suggest that the type of sport in which an athlete competes does not influence her body image dissatisfaction. These results correspond to findings of Hallinan et al. (1991) and Krane et al. (2001) who found that most athletes experience a dissatisfied body image regardless of sport-type. However, the lack of difference in body image dissatisfaction between the sport-types can be attributed to the broad response selection on the inventory. Although the continuum the athletes used to indicate their body image would be acceptable for the general population, athletes might require a more specific variety of silhouettes from which to choose. Specific silhouettes tailored toward the athletic population might produce more variation in the responses.

The second hypothesis proposed that the five domains of physical self-concept would be associated with body image dissatisfaction and competitive trait anxiety in aesthetic athletes. A low to moderate negative correlation was found between physical self-concept and body image dissatisfaction, i.e., a low physical self-concept for aesthetic athletes is indicative of a dissatisfied body image. The physical self-concept “body” subscale correlated the strongest with body image dissatisfaction. The way an aesthetic athlete feels about the attractiveness of her body can influence her body image dissatisfaction. This correlation was anticipated since both the body attractiveness subscale and body image dissatisfaction measure an athlete’s feelings about her physique.
A low to moderate negative correlation was found between the five domains of physical self-concept and competitive trait anxiety in aesthetic athletes. These results suggested the lower an aesthetic athlete’s physical self-concept, the more predisposed she is to experiencing competition anxiety. The physical self-concept “body” subscale had a strong correlation with competitive trait anxiety. This outcome was expected for aesthetic athletes who must perform with grace and physical appeal. Thus, a high correlation between an aesthetic athlete’s physical self-concept regarding her body attractiveness and her predisposition to competition anxiety was predicted. These results are similar to a study that found “feminine” female athletes reported high anxiety prior to performance (Swain & Jones, 1991).

The third hypothesis postulated a positive relationship between aesthetic athletes’ body image dissatisfaction, and their levels of competitive trait anxiety. Results indicated a significant moderate correlation between the two variables for aesthetic athletes. However, the correlation between the two variables for non-aesthetic athletes was low and not significant, implying that anxiety experienced prior to competition in these athletes is not related to body image dissatisfaction. These findings showed the more dissatisfied an aesthetic athlete is with her body, the more anxiety she experiences prior to competition. This was not found to be true for non-aesthetic athletes which suggests the possibility of an aesthetic athlete’s body as a source of her competition anxiety. These results are similar to the research of Martin and Mack (1996) and James and Collins (1997) where athletes with self-presentational concerns, such as feelings of an inadequate physique, experienced high levels of competition anxiety.

The last hypothesis proposed that the model used to guide this study would accommodate the data representing participants in this study. A thorough SEM analysis lent support to the hypothesized causal paths represented in the model. The same model was analyzed separately for both sport types.

The original models were found to be poor fits with the data, and the necessary modifications were made. The modification suggested for the aesthetic athlete model added an error covariance between two physical self-concept dimensions: ‘body attractiveness’ and ‘physical self-worth.” A better model fit was gained when these dimensions were correlated. This correlation may be attributed to difficulty in
completely separating the two dimensions in aesthetic athletes. An aesthetic athlete might closely associate her physical self-worth with the attractiveness of her body. The modification suggested for the non-aesthetic athlete model was an added covariance between the physical self-concept dimensions of ‘conditioning’ and ‘strength.’ This correlation proved a better model fit and may be attributed to the similarity of the two dimensions to a non-aesthetic athlete. An aesthetic athlete feels the need to balance her strength with aesthetic appeal; therefore, her definition of conditioning would not be associated with strength as is the case with non-aesthetic athletes.

The model accommodated the aesthetic athlete better with regard to physical self-concept and body image dissatisfaction as predictors of competitive trait anxiety in comparison to the non-aesthetic model. Physical self-concept proved to be a better predictor of competitive trait anxiety in aesthetic athletes than non-aesthetic athletes. These results coincide with findings from other research that found athletes with self-presentational concerns, such as, body attractiveness or fear of negative evaluation of their appearance experienced high levels of competitive trait anxiety (Martin & Mack, 1996). James and Collins (1997) found that aesthetic athletes’ main concerns of competition were impressing judges and self-presentational style (i.e.- having a competitive physique) as sources of anxiety.

Results in the present study also showed a stronger causal path between physical self-concept and body image dissatisfaction for aesthetic athletes than non-aesthetic athletes. This can be attributed to being rewarded for appearance and coordination related to performance. Hallinan et al. (1991) found that female athletes who were expected to perform with aesthetic appeal reported distorted and dissatisfied body images. Also, the model showed a correlation between an aesthetic athlete’s physical self-concept dimensions of body attractiveness and physical self-worth. It is safe to assume that if an athlete weighs her physical self-worth against the attractiveness of her body that she would have a strong link between her physical self-concept and body image dissatisfaction. A non-aesthetic athlete could develop her body image by more than just aesthetic appeal. The strength or capabilities of their physique could influence their body image, thus, resulting in a weaker link between their physical self-concept and body image dissatisfaction.
Lastly, the path between body image dissatisfaction and competitive trait anxiety showed little difference between the sport types, indicating that body image dissatisfaction alone is a poor predictor of competitive trait anxiety. This can be accredited to cultural influences of having an “ideal” body. Krane et al. (2001) found that most female athletes, regardless of sport type, expressed dissatisfaction with their body image. Since most female athletes experience dissatisfaction with their body image and likewise, experience anxiety prior to competition, it would not be wise to rely on body image dissatisfaction as the sole predictor of competition anxiety.

As a whole, the model proved to be a better fit for aesthetic athletes than non-aesthetic athletes. The model helps illustrate the links between physical self-concept, body image dissatisfaction, and competitive trait anxiety for female aesthetic and non-aesthetic athletes.

Limitations and Future Directions

Although this study found some evidence in support of a predictive relationship among physical self-concept, body image dissatisfaction, and competitive trait anxiety in aesthetic athletes, there are limitations that need to be addressed. The first major constraint to this study was an insufficient variance of body image dissatisfaction between both sport types. These results can be accredited to the lack of variability in the participants’ sports. The majority of aesthetic athletes were gymnasts while the majority of non-aesthetic athletes were swimmers and runners. Although the non-aesthetic sports were not subjectively judged, they are sports that emphasize leanness. Thus, the causal paths in this study could have been stronger had there been greater variability in sports represented by non-aesthetic athletes. Future research in this area should include a greater variety of aesthetic (figure skating, diving) and non-aesthetic (softball, basketball) sports.

Another concern relates to the participants’ honesty. Most female athletes desire to have an ideal body for their sport, but most refrain from admitting that they lack that ideal body. The same concept applies to athletes’ anxiety levels. Most athletes do not admit to feeling of anxiety related to competition. Although complete anonymity was assured to the subjects, one should question the response reliability. Also, all the athletes
were surveyed either before or after practice, therefore the environment, or presence of teammates or coaches might influence their responses in a socially desirable manner.

For future research, different instrumentation may be necessary. There are several alternative methods of measuring the current study’s variables. The Physical Self-Perception Profile is one way of many ways that physical self-concept can be measured. Although the scale’s reliability and validity are well established, there was one issue of concern throughout the study. The questionnaire is a four-choice structured alternative item format. This was a cause of confusion to a majority of the subjects and required the researcher to administer additional verbal instruction. While this scale was chosen for its length (only 30 items), a questionnaire with a Likert-scale response format might produce less confusion for the participants.

A more specific body image dissatisfaction scale may be used in the future instead of the nine-figure silhouette scale. Although the scale has been proven effective with the general population, athletes may need a more detailed description of body images; more than silhouettes can provide. A survey that incorporates items regarding specific body parts, or specific changes to body regions, would be more athlete-appropriate.

In the current study, only two variables were used as predictors for competitive trait anxiety. Competitive trait anxiety has been linked with other variables, such as, gender, gender role endorsement, and individual and team performances. Physical self-concept has also been connected with variables like gender and level of sport. In this study, it was assumed that the sample of athletes would take these factors into account. However, future models should examine the determining factors of physical self-concept in aesthetic athletes, as well as the coping strategies and performance perception of aesthetic athletes with high levels of body image dissatisfaction.

In conclusion, the current study’s findings indicate significant links between physical self-concept, body image dissatisfaction, and competitive trait anxiety in aesthetic athletes. However, the research techniques used in this study are only an initial step for the research in this field. Alterations should be considered in order to find more specific and expounding results.
APPENDIX A

DEFENSE ANNOUNCEMENT

Thesis       Treatise       Dissertation (please circle one)
Name: Lauren H. Kelly       Phone: (850) 294-7656
Department: Educational Psychology and Learning Systems
Major Professor: David Pargman
Defense Day: Wednesday   Date: April 7, 2004   Time: 1:30 pm
Location (room and building): 206 Stone Building
Title: The Relationship Between Physical Self-Concept, Body Image Dissatisfaction, and
Competition Anxiety in Female “Aesthetic” and “Non-Aesthetic” Collegiate Athletes.
APPENDIX B

HUMAN SUBJECTS COMMITTEE APPROVAL MEMORANDUM

Florida State University
Office of the Vice President
For Research
Tallahassee, Florida 32306-2763
(850) 644-6073 FAX (850) 644-4392

APPROVAL MEMORANDUM
Human Subjects Committee

Date: 9/17/2003

Lauren Kelly
2052 East Park Ave
Tallahassee FL 32301

Dept: Educational Psychology and Learning

From: David Quadragno, Chair

Re: Use of Human Subjects in Research
The Relationships Between Physical Self-concept, Body Image Satisfaction and Competition Anxiety in Female “Aesthetic” and “Non-Aesthetic” Collegiate Athletes.

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be exempt per 45 CFR § 46.101(b)2 and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If the project has not been completed by 9/16/2004 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000448.

Cc: Dr. David Pargman
HSC No. 2003-452
APPENDIX C

INFORMED CONSENT FORM

I consent to the following items:

- I freely and voluntarily and without force or coercion, consent to participate in the research project entitled “The Relationships Between Physical Self-Concept, Body Image Satisfaction, and Competition Anxiety in Female ‘Aesthetic’ and ‘Non-Aesthetic’ Collegiate Athletes.
- Lauren Kelly, B.S., who is a Masters student of Sport Psychology at Florida State University, is conducting this research. I understand the purpose of this research is to understand the relationships between Physical Self-Concept, body image satisfaction, and competition anxiety in female aesthetic and non-aesthetic collegiate female athletes. I understand that I will be asked questions pertaining to the topics of Physical Self-Concept, body image satisfaction, and competition anxiety.
- I understand that I will be completing paper and pencil questionnaires. The total time commitment will be approximately 10 minutes. I understand my participation is completely voluntary and I may choose not to participate at anytime without penalty.
- All my answers will be kept confidential. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported.
- I understand there are minimal risks involved in participating in this study. I might experience anxiety over any of the questions asked of me. If I experience any emotional discomfort while participating I will be able to stop my participation.
- I understand that there are benefits of participating in this study. This research will provide valuable insight into female athletes perceptions of competition.
- I understand that this consent may be withdrawn at any time without prejudice or penalty. I have been given the right to ask and have answered any inquiry concerning this study. Questions, if any, have been answered to my satisfaction.
- I understand that I may contact Lauren Kelly (850) 294-7656 or Dr. David Pargman (850) 644-8793, for answers to questions about this research or my rights. Group results will be sent to me upon my request.

I have read and understand this consent form.

(Subject) ______________________ (Date) 

(Witness)
APPENDIX D

DEMOGRAPHIC INFORMATION

__________________________________________________________

Date of Birth: ______________

Sport in which you compete: __________________________________

How many competitive years have you been involved in the sport? ______

Height: _________

Weight: _________
## APPENDIX E

### PHYSICAL SELF PERCEPTION PROFILE

*(Fox, 1990)*

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**THE PHYSICAL SELF PERCEPTION PROFILE (PSPP)**

**WHAT AM I LIKE?**

These are statements which allow people to describe themselves. There are no right or wrong answers since people differ a lot.

First, decide which one of the two statements best describes you.

Then, go to the side of the statement and check if it is just "sort of true" or "really true" FOR YOU.

<table>
<thead>
<tr>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
<th>Example</th>
<th>Really True for Me</th>
<th>Sort of True for Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>Some people are very competitive</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>□</td>
<td>□</td>
<td>BUT</td>
<td>Others are not quite so competitive</td>
<td>□</td>
</tr>
</tbody>
</table>

REMEMBER to check only ONE of the four boxes

---

1. □ □ Some people feel that they are not very good when it comes to playing sports BUT Others feel that they are really good at just about every sport □ □
2. □ □ Some people are not very confident about their level of physical conditioning and fitness BUT Others always feel confident that they maintain excellent conditioning and fitness □ □
3. □ □ Some people feel that compared to most, they have an attractive body BUT Others feel that compared to most, their body is not quite so attractive □ □
4. □ □ Some people feel that they are physically stronger than most people of their sex BUT Others feel that they lack physical strength compared to most others of their sex □ □
5. □ □ Some people feel extremely proud of who they are and what they can do physically BUT Others are sometimes not quite so proud of who they are physically □ □
6. □ □ Some people feel that they are among the best when it comes to athletic ability BUT Others feel that they are not among the most able when it comes to athletics □ □
<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>Answer</th>
<th>Answer</th>
<th>Answer</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Some people make certain they take part in some form of regular vigorous physical exercise</td>
<td>Really True for Me</td>
<td>Some people make certain they take part in some form of regular vigorous physical exercise</td>
<td>BUT</td>
<td>Others don't often manage to keep up regular vigorous physical exercise</td>
</tr>
<tr>
<td>8</td>
<td>Some people feel that they have difficulty maintaining an attractive body</td>
<td>Really True for Me</td>
<td>Some people feel that they have difficulty maintaining an attractive body</td>
<td>BUT</td>
<td>Others feel that they are easily able to keep their bodies looking attractive</td>
</tr>
<tr>
<td>9</td>
<td>Some people feel that their muscles are much stronger than most others of their sex</td>
<td>Really True for Me</td>
<td>Some people feel that their muscles are much stronger than most others of their sex</td>
<td>BUT</td>
<td>Others feel that on the whole their muscles are not quite so strong as most others of their sex</td>
</tr>
<tr>
<td>10</td>
<td>Some people are sometimes not so happy with the way they are or what they can do physically</td>
<td>Really True for Me</td>
<td>Some people are sometimes not so happy with the way they are or what they can do physically</td>
<td>BUT</td>
<td>Others always feel happy about the kind of person they are physically</td>
</tr>
<tr>
<td>11</td>
<td>Some people are not quite so confident when it comes to taking part in sports activities</td>
<td>Really True for Me</td>
<td>Some people are not quite so confident when it comes to taking part in sports activities</td>
<td>BUT</td>
<td>Others are among the most confident when it comes to taking part in sports activities</td>
</tr>
<tr>
<td>12</td>
<td>Some people do not usually have a high level of stamina and fitness</td>
<td>Really True for Me</td>
<td>Some people do not usually have a high level of stamina and fitness</td>
<td>BUT</td>
<td>Others always maintain a high level of stamina and fitness</td>
</tr>
<tr>
<td>13</td>
<td>Some people feel embarrassed by their bodies when it comes to wearing few clothes</td>
<td>Really True for Me</td>
<td>Some people feel embarrassed by their bodies when it comes to wearing few clothes</td>
<td>BUT</td>
<td>Others do not feel embarrassed by their bodies when it comes to wearing few clothes</td>
</tr>
<tr>
<td>14</td>
<td>When it comes to situations requiring strength some people are one of the first to step forward</td>
<td>Really True for Me</td>
<td>When it comes to situations requiring strength some people are one of the first to step forward</td>
<td>BUT</td>
<td>Others seem to have a real sense of confidence in the physical side of themselves</td>
</tr>
<tr>
<td>15</td>
<td>When it comes to the physical side of themselves some people do not feel very confident</td>
<td>Really True for Me</td>
<td>When it comes to the physical side of themselves some people do not feel very confident</td>
<td>BUT</td>
<td>Others feel that they are not one of the best when it comes to joining in sports activities</td>
</tr>
<tr>
<td>16</td>
<td>Some people feel that they are always one of the best when it comes to joining in sports activities</td>
<td>Really True for Me</td>
<td>Some people feel that they are always one of the best when it comes to joining in sports activities</td>
<td>BUT</td>
<td>Others feel that they are not one of the best when it comes to joining in sports activities</td>
</tr>
<tr>
<td></td>
<td>True</td>
<td>False</td>
<td></td>
<td>True</td>
<td>False</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
<td>-------</td>
<td>---</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>17.</td>
<td>Some people tend to feel a little uneasy in fitness and exercise settings</td>
<td>BUT</td>
<td>Others feel confident and at ease at all times in fitness and exercise settings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Some people feel that they are often admired because their physique or figure is considered attractive</td>
<td>BUT</td>
<td>Others rarely feel that they receive admiration for the way their body looks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Some people tend to lack confidence when it comes to their physical strength</td>
<td>BUT</td>
<td>Others are extremely confident when it comes to their physical strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Some people always have a really positive feeling about the physical side of themselves</td>
<td>BUT</td>
<td>Others sometimes do not feel positive about the physical side of themselves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Some people are sometimes a little slower than most when it comes to learning new skills in a sports situation</td>
<td>BUT</td>
<td>Others have always seemed to be among the quickest when it comes to learning new sports skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Some people feel extremely confident about their ability to maintain regular exercise and physical condition</td>
<td>BUT</td>
<td>Others don't feel quite so confident about their ability to maintain regular exercise and physical condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Some people feel that compared to most, their bodies do not look in the best of shape</td>
<td>BUT</td>
<td>Others feel that compared to most their bodies always look in excellent physical shape</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Some people feel that they are very strong and have well developed muscles compared to most people</td>
<td>BUT</td>
<td>Others feel that they are not so strong and their muscles are not very well developed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Some people wish that they could have more respect for their physical selves</td>
<td>BUT</td>
<td>Others always have great respect for their physical selves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Given the chance, some people are always one of the first to join in sports activities</td>
<td>BUT</td>
<td>Other people sometimes hold back and are not usually among the first to join in sports</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Really True for Me</td>
<td>Sort of True for Me</td>
<td></td>
<td>Really True for Me</td>
<td>Sort of True for Me</td>
</tr>
<tr>
<td>---</td>
<td>-------------------</td>
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</tr>
<tr>
<td>27.</td>
<td>Some people feel that compared to most they always maintain a high level of physical conditioning</td>
<td>BUT</td>
<td>Others feel that compared to most their level of physical conditioning is not usually so high</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Some people are extremely confident about the appearance of their body</td>
<td>BUT</td>
<td>Others are a little self-conscious about the appearance of their bodies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Some people feel that they are not as good as most at dealing with situations requiring physical strength</td>
<td>BUT</td>
<td>Others feel that they are among the best at dealing with situations which require physical strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Some people feel extremely satisfied with the kind of person they are physically</td>
<td>BUT</td>
<td>Others sometimes feel a little dissatisfied with their physical selves</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

FLORIDA COMPETITION QUESTIONNAIRE

(Martens, Vealey, & Burton, 1990)

**Directions:** Below are some statements about how persons feel when they compete in sports and games. Read each statement and decide if you HARDLY EVER, or SOMETIMES, or OFTEN feel this way when you compete in sports and games. If your choice is HARDLY EVER, circle the letter A, if your choice is SOMETIMES, circle the letter B, if your choice is OFTEN, circle the letter C. There are no right or wrong answers. Do not spend too much time on any one statement. *Remember* to choose the word that describes how you *usually* feel when competing in *sports and games*.

<table>
<thead>
<tr>
<th></th>
<th>Hardly Ever</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Competing against others is socially enjoyable.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>2. Before I compete I feel uneasy.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>3. Before I compete I worry about not performing well.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>4. I am a good sport when I compete.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>5. When I compete I worry about making mistakes.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>6. Before I compete I am calm.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>7. Setting a goal is important when competing.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>8. Before I compete I get a queasy feeling in my stomach.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>9. Just before competing I notice my heart beats faster than usual.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>10. I like to compete in games that demand considerable physical energy.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>11. Before I compete I feel relaxed.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>12. Before I compete I feel nervous.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>13. Team sports are more exciting than individual sports.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>14. I get nervous wanting to start the game.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>15. Before I compete I usually get uptight.</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>
APPENDIX G

NINE FIGURE SILHOUETTE SCALE

(Stunkard, Sorenson, & Schulsinger, 1983)

DIRECTIONS: On the silhouette continuum provided below, please indicate the figure that you think represents your CURRENT figure and label it (A). Next, indicate the figure that you think represents the IDEAL figure for success in your sport and label it (B). If you feel you are represented by a figure in-between two given on the continuum, then please estimate to the nearest tenth of a decimal and label that number with the appropriate letter. (For example- 4.7 would be an appropriate estimation if you feel your current figure is close to, but not exactly, a 5.)
REFERENCES


BIOGRAPHICAL SKETCH

Lauren H. Kelly was raised in Bradenton, Florida and graduated from Manatee High School. She attended Florida State University in Tallahassee, FL where she graduated with Honors, Cum Laude, with her Bachelor of Science in Psychology, and certification in Performance Management. She earned her Master’s degree in Sport Psychology at Florida State University while working as a student research assistant and substitute Physical Education teacher. She spent time training to run her first marathon as well, and was successful on January 25, 2004 in Tampa, FL at the Hops Marathon by Tampa Bay. Future plans include taking time-off from academics before pursuing a Doctorate degree and continuing to train for challenging physical endeavors.