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# Body Image in Female Collegiate Volleyball Players: Are athletics detrimental or beneficial?

Megan M. Hoag

*Indiana University of Pennsylvania*

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BODY IMAGE IN FEMALE COLLEGIATE VOLLEYBALL PLAYERS: ARE  
ATHLETICS DETRIMENTAL OR BENEFICIAL?

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Psychology

Megan M. Hoag

Indiana University of Pennsylvania

May 2012

Indiana University of Pennsylvania  
School of Graduate Studies and Research  
Department of Clinical Psychology

We hereby approve the dissertation of

Megan M. Hoag

Candidate for the degree of Doctor of Psychology

---

Maureen McHugh, Ph.D.  
Professor of Psychology, Advisor

---

Donald Robertson, Ph.D.  
Professor of Psychology

---

Laurie Roehrich, Ph.D.  
Associate Professor of Psychology

ACCEPTED

---

Timothy P. Mack, Ph.D.  
Dean  
School of Graduate Studies and Research

Title: Body Image in Female Collegiate Volleyball Players: Are athletics detrimental or beneficial?

Author: Megan M. Hoag

Dissertation Chair: Dr. Maureen McHugh

Dissertation Committee Members: Dr. Donald Robertson  
Dr. Laurie Roehrich

Body image research among female athletes has tended to examine the detrimental effects of participation in “thin” sports such as gymnastics and dance. The present study explores positive and negative effects of athletic participation as well as the impact of level of competition on body image among female collegiate volleyball players.

Female collegiate volleyball players and non-athletes were administered measures investigating current and ideal body physiques, body dissatisfaction, social physique anxiety, body appreciation, and sociocultural attitudes toward appearance.

Results indicate that volleyball players internalize the athletic ideal more than non-athletes, and idealize a heavier (although still very thin) and more athletic physique. However, athletes at the highest level of competition were more dissatisfied with their bodies than non-athletes and saw their bodies as larger. Using discriminant analysis, emphasis on the athletic physique and body dissatisfaction were found to best differentiate between athletes and non-athletes. Distinguishing between levels of competition among volleyball players was more challenging, but individuals participating at the most competitive level were best identified by their degree of internalization of sociocultural body image influences and perception of their actual body as highly athletic. This study suggest athletes’ and non-athletes’ have different body images,

particularly in terms of the heavier emphasis on athletic bodies among volleyball players.

While this illustrates a positive effect of athletic participation on body image, body dissatisfaction becomes increasingly evident when women believe they have failed to achieve this athletic ideal, particularly among elite level athletes.

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## CHAPTER I

### OVERVIEW OF THE PROBLEM

Within the United States and other cultures that have adopted Western standards of female beauty, disturbance in body image has swelled to an alarming level (Miller & Halberstadt, 2005). Because the Western ideal of female beauty is traditionally very thin, women often see their own bodies as too heavy, and subsequently experience dissatisfaction with their bodies and may even engage in disordered eating in an attempt to achieve the culturally idealized level of thinness (Cash & Henry, 1995; Thompson, Corwin, Thomas, & Sargent, 1999). The staggering prevalence of body image disturbance among women, combined with the far reaching and often drastic consequences (e.g., disordered eating, depression, low self-esteem, etc.), has made body image an important avenue of research (Brannan, Petrie, Greenleaf, Reel, & Carter, 2009; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006).

Even though body image disturbance and disordered eating exist across demographic groups, certain populations have been identified as being at increased risk (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). For example, adolescents are one such group that appears to exhibit a high prevalence of body image concerns for a variety of possible reasons, such as onset of puberty, peer pressures, and strong sociocultural forces. Women are another group routinely found to display higher levels of body image disturbance, body dissatisfaction, and disordered eating, as compared to men, which is often attributed to the sociocultural pressures placed on women to be thin and attractive (Thompson et al.). Not all at-risk groups are comprised of women, however, as homosexual men have also been found to exhibit high prevalence of body

image concerns (Siever, 1994). One risk group garnering increased attention is individuals whose jobs or activities endorse or require thinness, such as fashion models and actresses. One subset of this group, female athletes, has been identified as being at-risk, as sports culture appears to have embraced the idea that thinness enhances athletic performance (Cumming, Eisenmann, Smoll, Smith, & Malina, 2005).

Research has continually shown that female athletes participating in sports promoting thinness, or that contain a significant aesthetic component, such as ballet and gymnastics, experience higher rates of body image disturbance and disordered eating, as compared to the general female population (Hausenblas & Carron, 1999). Yet, as more sports have adopted the belief that thinner athletes produce better performances, research has begun to explore whether all female athletes are at risk for body image disturbance. Given this growing concern, research on female athletes and body image should expand beyond the traditionally studied sports, such as gymnastics and dance (Smolak, Murnen, & Ruble, 2000).

The current study attempts to extend the research in this area by exploring body image in female collegiate volleyball players. Volleyball athletes' participation in a sport that appears to offer a performance advantage for strength and power, while also promoting leanness and agility, makes this group an interesting and informative population for research. It is important to note that amidst the research depicting athletic participation as detrimental, some studies have shown that there may be some protective or beneficial effects as well, such as producing greater body appreciation (Diehl & Petrie, 1995; Swami & Tovee, 2009; Wilkins, 1991). Therefore, the present study will seek to explore potential positive and negative effects of sports participation by examining

athletes' and non-athletes' beliefs regarding ideal female body, body dissatisfaction, social physique anxiety, body appreciation, and internalization of sociocultural factors influencing body image.

## CHAPTER II

### INTRODUCTION

#### **Body Image**

Body image was first defined as “the picture of our body which we form in our minds” (Schilder, 1935, p.11). Although this would not be considered an adequate definition by today’s standards, this early conceptualization represents an important first step toward attempting to understand how individuals visualize and feel toward their bodies. Over time, it became clear that this view was overly simplistic and neglected the affective components of body image, and the construct of body affect, or body esteem, was developed. Body esteem can be understood as the level of satisfaction or dissatisfaction that an individual has regarding his or her body (Jourard & Secord, 1954). Today, this concept is more frequently referred to as body satisfaction or dissatisfaction, and it remains an important area of body image research. Research regarding body image and body satisfaction soon discovered that these constructs had implications far beyond how an individual conceptualizes and thinks about his or her body. Relationships were found between body image and self-esteem, as feelings about the body were found to be related to feelings about the self in general (Lerner, Karabenick, & Stuart, 1973; Padin, Lerner, & Spiro, 1981; Secord & Jourard, 1953). For example, individuals with negative body image were discovered to be more likely to have issues such as low self-esteem, insecurity, and depression (Secord & Jourard). These early findings solidified the notion that body image was an important construct, one requiring further exploration and research.

Today, body image is understood to be a complex and multidimensional phenomenon. The currently held viewpoint posits that body image is composed of an individual's self-perceptions and attitudes (i.e., thoughts, feelings, and behaviors), as they pertain to one's body (Avalos, Tylka, & Wood-Barcalow, 2005). Therefore, body image is conceptualized as being comprised of elements that are distinct, but related. Some of the components that have been included in the construct of body image include ideas such as appearance evaluation, appearance orientation, accuracy of size perception, and body satisfaction (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999).

### **Body Dissatisfaction**

Within the United States and many other countries, problems with body image and body dissatisfaction have reached near epidemic proportions (Miller & Halberstadt, 2005). The desire to be thin has increased in prevalence, to the point where dieting and calorie restriction are considered standard and normal behaviors, especially among women (Cash & Henry, 1995; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Body dissatisfaction, broadly defined as subjective negative evaluation of the body, has reached such high rates in Western societies, that it is now considered to be a normative experience for women (Brannan et al., 2009; Rodin, Silberstein, & Striegel-Moore, 1984; Stice & Shaw, 2002). Although the desire to be seen as lean with well-defined muscles exists for both women and men, women have been shown to experience greater body dissatisfaction than men across all age groups, and this dissatisfaction remains relatively stable across the lifespan (Esnaola, Rodriguez, & Goni, 2010; Montepare, 1996). On average, women want to be approximately 14 pounds lighter than their current weight (Hart, Leary, & Rejeski, 1989; Rozin & Fallon, 1988). This has resulted in an obsession

with becoming thinner within Westernized cultures (Miller & Halberstadt). Garner (1997) reported that 89% of American women want to lose weight, and that 24% would be willing to exchange 3 years of their lives in order to achieve their desired weight. An early and well researched theory proposed that women's body satisfaction was directly related to the difference between actual and perceived ideal body size (Jourard & Secord, 1954). This is especially problematic given the fact that Western societal ideals are typically narrow and difficult (or impossible) for most women to obtain. As a result, women often report believing that it is better to be thinner or smaller than they currently are, except in regards to bust measurements (Jourard & Secord). Furthermore, body dissatisfaction has been linked to low self-esteem and depression, and is considered to be the primary causal risk factor in the development of eating disorders (Brannan et al.; Paxton et al.).

The sociocultural framework has received the strongest empirical support and is generally viewed as the dominant causal explanation regarding the development of body dissatisfaction and body image disturbance in women (Dittmar, 2005; Stice, 2002;). Women are believed to be under extreme pressure from sociocultural influences such as peers, family, and the fashion industry. These forces emphasize the importance of thinness, which encourages and increases women's dissatisfaction with their own bodies if they perceive that they are unable to achieve the often unrealistic standard of beauty (Levine & Smolak, 1996; Powell & Kahn, 1995; Sypeck, Gray, Etu, Ahrens, Mosimann, & Wiseman, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Tiggemann & Rothblum, 1988). Women generally report greater perceived sociocultural pressures than men, and have also been found to be more affected than men by influences such as



advertising, verbal messages, social models, and social situations (Esanola et al., 2010; Glauert, Rhodes, Byrne, Fink, & Grammer, 2009). Furthermore, the more these sociocultural messages regarding the Western standard of beauty are accepted and internalized, the greater level of body dissatisfaction a woman is likely to experience (Glauert et al.).

### **Ideal Body**

Because of the role that an individual's concept of the ideal female body appears to play in body image disturbance, the concept of the ideal female body has become an important area of research. Fallon and Rozin (1985) discovered that women almost always believed their current body size to be significantly heavier than what they believe to be ideal, a trend not typically seen in males. Furthermore, the female figure that heterosexual women believed men find most desirable was significantly thinner than what men actually reported. Finally, what women selected as the figure they would most like to resemble was almost always thinner than their current weight, and was also thinner than what they believe society and men find to be ideal or most attractive. Men, however, are much more likely to believe their current shape to be what society and women find as ideal, despite the fact that women's ratings of male ideal body do not substantiate these claims. Based on these patterns, it appears that women are more likely to distort society's and men's preferences to align with or even create body dissatisfaction. Men, however, tend to distort society's and women's perceptions to promote satisfaction with their current size (Rozin & Fallon, 1988). Taken as a whole, these findings promote the idea that women are experiencing and internalizing pressure to

attain a very thin ideal body, which is contributing to their high levels of body dissatisfaction.

What society and individuals believe is the ideal female body has been demonstrated to be very influential in how women conceptualize and feel about their bodies. However, the significance placed on obtaining an ideal body is not limited to adult, or even young adult, women. It appears that children internalize cultural standards of beauty even before reaching adolescence. Ideal body size becomes salient even in childhood, as many girls report wanting to be thin, before they report desiring to be beautiful. In fact, as early as the ages of 6-7, 42% of girls state that they prefer body figures thinner than their current size (Collins, 1991). A similar study found that 49% of fourth grade females believe that society's ideal female figure is thinner than their own. These results are significant, because they suggest that even at a young age, girls are susceptible to increasing levels of body dissatisfaction and weight concern, possibly from discrepancies between current and ideal body sizes (Thompson et al., 1997).

### **Sociocultural Factors and Ideal Body**

The sociocultural model is generally accepted to be the most empirically validated approach regarding how ideal body standards and body image disturbance are developed and maintained (Akan & Grillo, 1995; Cusumano & Thompson, 1997; Esnaola et al., 2010; Glauert et al., 2009; Lau, Lum, Chronister, & Forrest, 2006). Individuals often feel the need to conform to standards of ideal body size and shape, and this desire is often driven by social pressure (Fallon, 1990). Ideals are widely held and influential and are seen as communicated through the media (Almond, 2000; Bissell, 2004; Cusumano & Thompson; Fredrickson & Roberts, 1997; Hall, 2008; Lau et al.; Miler & Halberstadt,

2005; Nollen, Kaur, Pulvers, Choi, Fitzgibbon, Li, et al., 2006). Perhaps the most well researched sociocultural influence on what a culture promotes as the ideal female body has been the role of the media. Research has repeatedly demonstrated that the social endorsement of an ideal female body through the media is closely linked to body image disturbance (Altabe & Thompson, 1996).

Through the media, women are constantly being presented with images of what is considered to be the current ideal female body, with little variation or presentation of alternatives. In the 1950s, the curvaceous and feminine figure of Marilyn Monroe was deemed to be the standard of ideal body (Almond, 2000). Therefore, movie stars (e.g., Jane Russell) and other women in the media often possessed this voluptuous hourglass figure. The 1960s, however, demonstrated a shift toward the overly thin ideal, as evidenced by the underweight supermodel Twiggy (Martin, 2010). By the 1990s, Kate Moss and the “waif-look” dominated the fashion and media worlds, and women in the media became thinner and thinner to obtain this ideal. As this brief timeline demonstrates, what is considered to be ideal is a shifting concept that routinely changes over time. One apparent constant, however, is that the media tends to promote the current standard of ideal female body, to the exclusion of other alternatives.

Analyses of media content have demonstrated that men in the media possess a range of body sizes varying in size and shape. Women, however, are almost exclusively presented as extremely thin (Malkin, Wornian, & Chrisler, 1999; Petrie, Austin, Crowley, Helmcamp, Johnson, Lester, et al., 1996; Plous & Neptune; 1997). Furthermore, in television programming and advertising, overweight female characters are subjected to the most negative comments from male characters, while thin female characters are

frequently spared from such criticism (Fouts & Burggraf, 2000). This provides one potential explanation for the higher rate of body dissatisfaction in women as compared to men. Men have a range of bodies that the media presents as acceptable and to which they can compare themselves. Women, however, see a very narrow and often unattainable standard and are provided with many more opportunities to draw negative comparisons between themselves and this thin ideal, which can lead to greater body dissatisfaction (Miller & Halberstadt, 2005).

While the standard of ideal body has changed from the 1950s to the present, it is important to note that the general trend has grown progressively thinner over time. To examine what American society considers to be the ideal female body, Garner, Garfinkel, Schwartz, and Thompson (1980) conducted a famous study examining the bodies of Playboy centerfolds and Miss America Pageant contestants from 1959-1978. These groups were chosen because they were considered to be penultimate examples of the ideal female body. Throughout the studied 20 year period, the weight of the centerfolds and pageant contestants was consistently lower than the average American female during the same time period. Additionally, both groups showed significant decreases in weight over time, including a decrease in the centerfolds' bust and hip measurements. To investigate whether this trend continued, Wiseman, Gray, Mosimann, and Ahrens (1992) continued this research design by examining Playboy centerfolds from 1979-1988. The same trend of decreasing weight and shrinking measurements was found. Furthermore, by using actuarial tables, it was discovered that the centerfolds weighed 13%-19% less than what would be considered normal weight for their given height.

The ways in which television, movies, magazines, and other media sources bombard women with messages regarding the ideal body is an important factor in women's body image and body dissatisfaction. The ideal female body presented in the media, during any time period, is usually narrow and difficult or impossible to obtain. In fact, the ideal female body is usually very far removed from what would be considered physiologically normal. Therefore, the majority of women are unable to obtain this standard of perfection, regardless of any efforts they may make (Almond, 2000). For example, it is estimated that only 2% of American women will ever be capable of achieving the BMI of current fashion models and actresses, which is estimated to be, on average, 15% below the expected weight for their given height ("Dissatisfaction with Our Bodies and Eating Disorders", n.d.; Martin, 2010). Ironically, maintaining a weight of 15% below normal weight is one of the required diagnostic criteria for anorexia nervosa (American Psychiatric Association (APA), 2000). This routine presentation of underweight females in the media is critical, because actual or perceived deviation from what the media presents as ideal is linked to negative effects on emotions (e.g., depression, stress, guilt, shame, insecurity, unhappiness, lowered self-confidence, etc.), and body dissatisfaction (Almond; Stice & Shaw, 1994).

Several aspects of media exposure have been studied as potential predictors of body image disturbance. One established factor is the amount of exposure to the media that women routinely experience. For example, women with more media exposure choose thinner female bodies as ideal, and are more likely to perceive their own bodies as being larger than they actually are (Miller & Halberstadt, 2005). This discrepancy

between what is considered ideal and what is perceived to be one's current body size is often considered to be the foundation of body dissatisfaction (Bissell, 2004).

Another important factor influencing how media messages influence women's body image is the type of media to which women are exposed. While much of mainstream media promotes the thin ideal, there are forms of media that present no body related messages (e.g., nature programming) or messages that run counter to the mainstream thin ideal (e.g., television shows or movies with female protagonists of various body sizes, such as *Ugly Betty* or *Real Women Have Curves*). This is an important distinction, because exposure to programs and images promoting the thin ideal, as compared to media with no body messages or more accepting and diverse body messages, is correlated with greater affective distress and body dissatisfaction for women (Stice & Shaw, 1994). For example, exposure to this specific type of media, known as thinness depicting and promoting media (TDP media) is associated with higher levels of body dissatisfaction, lower body self-esteem, self-objectification, and other negative consequences in women (Bissell, 2004).

While the media cannot be considered solely responsible for issues of negative body image, body dissatisfaction, and eating disorders, it is clearly an important factor, and plays a major role in spreading the image of the ideal female body (Almond, 2000). In fact, the growing evidence chronicling the negative implications of media messages regarding appearance has led to the conclusion that the media is one of the most powerful factors contributing to body image disturbance and disordered eating in college and adolescent females (Bissell, 2004).

### **Internalization of Sociocultural Factors**

Research has demonstrated that both amount and type of media exposure are predictive of problems with body image disturbance. Yet, it appears that an individual's awareness of sociocultural (e.g., media) pressures, and how much one accepts and internalizes these standards, may be the most relevant dimension (Cusumano & Thompson, 1997). In 1995, Heinberg, Thompson, and Stormer developed the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ), which is designed to measure awareness and internalization of appearance related cultural pressures. Internalization has been defined as "the incorporation of specific values to the point that they become guiding principles," or "the extent to which an individual cognitively buys into" social standards of body size and appearance, and alters his or her behaviors to achieve these ideals (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004, p.294; Thompson & Stice, 2001, p.181). Using the SATAQ, both awareness and internalization of media messages regarding body have been found to be strongly related to body image disturbance and disordered eating. However, internalization accounts for six times the variance as compared to awareness. Therefore, internalization of the media promoted thin ideal has garnered increasing attention as an important dimension and an area of further research.

Internalization of media messages regarding the body is believed to be at least partially responsible for the differential effects that media messages have on various individuals and has been linked to body dissatisfaction and disordered eating in women (Thompson et al., 2004). Even though men and women are equally aware of the emphasis that is placed on thinness and attractiveness in Western society, women internalize these norms to a greater degree than men (Miller & Halberstadt, 2005). While

the influence of sociocultural variables is certainly multidimensional, one of the most prominent and well researched aspects remains the effects of the pressure and skewed information presented by the media. While the sheer pervasiveness of these messages is clearly important, the degree of internalization may be the best explanation for the way the media affects different individuals in different ways (Thompson et al.).

The discovery of the importance of internalization of media messages regarding the body incited further research on the consequences of this phenomenon on body image. Heinberg and Thompson (1995) studied the role of awareness and internalization of sociocultural standards of appearance by looking at the effect of television commercials on women's body image. Participants were either shown appearance related images (e.g., Weight Watchers advertisements, beer commercials prominently featuring thin, attractive women) or non-appearance related commercials (e.g., commercials for pain relievers or insurance companies). Women who watched the appearance related commercials reported lower body satisfaction than women watching non-appearance related commercials. Thus, it was determined that media messages that promote societal standards of thinness and attractiveness can exert a negative effect on women's body image and body satisfaction. Furthermore, women with the highest levels of awareness and internalization (as measured by the SATAQ) experienced the highest level of negative emotional effects following appearance related images. Again, the greatest predictor of body image disturbance was internalization of social norms, even after awareness of media ideals was accounted for, a result that has been replicated by further research (Cusumano & Thompson, 1997).



Through this and other similar studies, strong evidence has been gathered to suggest that internalization is an important determinant of body image disturbance. Because of this, the role of the media has moved from being considered a peripherally contributing factor in body image disturbance, to being conceptualized as an “overarching influence, perhaps playing a formative role in the adoption of idealized standards of appearance by parents, peers, and other influential social agents” (Thompson et al., 2004, p.303). Because evidence has continued to mount demonstrating the magnitude of the media’s effect on body image, Thompson and Stice (2001) have even suggested that the findings are sufficiently conclusive to assert that internalization of media messages and images is a causal factor in the development of issues such as body image disturbance and disordered eating.

### **Athletes and Body Image**

While body image disturbance and body dissatisfaction are prevalent within the general female population, certain groups (i.e., adolescents, models, etc.) have been identified as being at significantly higher risk for developing these problems. Female athletes are one such group that has received increasing attention as an at-risk population for body image disturbance and disordered eating (Davis, 1992). A push has even been made toward the creation of a new diagnostic category known as “anorexia athletica”, where individuals use excessive exercise as a primary method to obtain or maintain the physique that he or she considers to be necessary for athletic success (Smolak et al., 2000).

On a general level, body dissatisfaction has been linked to women’s activity and exercise level. For example, after a single exercise session, women report being less

dissatisfied with their bodies, “feeling” slimmer, and noticing an improvement in mood (Vocks, Hechler, Rohrig, & Legenbauer, 2009). Conversely, when women who exercise regularly are forced to abstain from physical exercise for 72 hours, they experience an increase in body dissatisfaction (Niven, Rendell, & Chisholm, 2008). Because it is unlikely that major changes in physical appearance occurred as a result of either a single exercise session or from abstaining from exercise for three days, it is believed that a change in subjective body size occurs during this time. Therefore, it is the change in subjective, not objective, body size that is likely responsible for the fluctuations in body dissatisfaction in relation to exercise.

In addition to the connection between activity level and body image, female sports participation has been found to be associated with disordered eating (Krane, Stiles-ShIPLEY, Waldron, & Michalenok, 2001). Sundgot-Borgen (2005) found that eating disorders were over twice as prevalent among female athletes (20%) as compared to female non-athlete controls (9%). Female collegiate athletes, in general, report more symptoms of anorexia nervosa and bulimia nervosa than women in the general population (Hausenblas & Carron, 1999). One study found that over 1/3<sup>rd</sup> of Division I (the level of National Collegiate Athletic Association [NCAA] competition reserved for the largest schools, generally believed to be the most competitive) female athletes have attitudes or symptoms that place them at risk for anorexia nervosa (Johnson, Powers, & Dick, 1999). Furthermore, body dissatisfaction within this same population has been found to be strongly, directly, and positively connected to bulimic symptoms, even when other variables such as social desirability and body mass index (BMI) are controlled (Brannan et al., 2009).

One hypothesized explanation for the susceptibility of body image disturbance and disordered eating among female athletes is the prevalence of perfectionism within this population. Perfectionism can serve athletes well, because it allows them to strive for superior skills and performances. As a group, athletes have been found to be higher in perfectionism than the general population (Hausenblas & Carron, 1999). This is significant because perfectionism has also been found to be a central component of disordered eating (Garner, 1986; Schwarz, Gairrett, Aruguete, & Gold, 2005). As levels of perfectionism increase in female athletes, so too does the prevalence of disordered eating behaviors (Hausenblas & Carron). Therefore, the same attribute that allows athletes to be successful in athletics and reach greater levels of competition may also contribute to the development of disordered eating (Case, 2004).

Another hypothesized reason for female athletes' susceptibility toward disordered eating and body image disturbance is that female athletes are encouraged to believe that weight and performance are closely linked (Cumming et al., 2005). The prevailing idea within this school of thought is that thinner athletes will demonstrate superior skill and produce better athletic performances. This performance related drive for thinness leads many female collegiate athletes to believe that decreasing body fat will improve athletic performance (Powers & Johnson, 1996). To examine this hypothesis, studies have been conducted on female athletes to investigate attitudes regarding body image and behaviors such as dieting and weight management strategies. Many of these studies conclude that female athletes have higher levels of negative body image and that they are susceptible to engaging in drastic measures (e.g., excessive exercise, starvation, purging, diet pills) in an attempt to manage or reduce their weight (Rosen & Hough, 1988). Despite the pattern

of results indicating the high prevalence of body image disturbance and disordered eating in female athletes, the majority of these studies have been restricted to the traditionally “feminine” or aesthetic sports, such as gymnastics, dance, figure skating, etc. Therefore, it was assumed that this phenomenon was related to the aesthetic demands of these sports, and the prevailing fear that coaches and judges would look more favorably on thinner athletes (Davis, 1992). Therefore, it was falsely believed that female athletes’ susceptibility to body image disturbance and disordered eating was limited to those sports seen as traditionally feminine, known as the “aesthetic” or “lean” sports.

Slowly, it became clear that research with female athletes was overly focused on a narrow range of sports and athletes (namely, the “feminine” sports), and studies began to include a wider array of sports and female athletes. In research, sports have often been classified as either “aesthetic” versus “non-aesthetic,” or “lean” versus “non-lean.” Sports such as gymnastics, dance, and figure skating are often classified as aesthetic/lean sports (Davis, 1992). These sports tend to require a particular physique, which is often extremely thin and lean (Smolak et al., 2000). Therefore, aesthetic or lean sports tend to be comprised of females who are short in stature and/or low in body mass. Non-aesthetic/non-lean sports are frequently sports such as basketball, soccer, and softball, where stature, strength, and/or power are emphasized. It was believed that women involved in non-aesthetic sports would be permitted to be taller and/or heavier (Cumming et al., 2005; Davis). Research has shown that females participating in judged sports and lean sports have greater levels of body image disturbance and disordered eating as compared to the general population, possibly from both the overt and covert pressures to be thin that these sports create (Hausenblas & Carron, 1999; Smolak et al.; Taube &

Blinde, 1992). Based on the aesthetic versus non-aesthetic distinction, it was proposed that some sports (namely, aesthetic sports emphasizing appearance) may be harmful to certain women, while others (non-aesthetic sports emphasizing strength and stamina) may be beneficial (Smolak et al.). However, because thinness has become associated with enhanced performance in nearly all sports, even the sports once considered non-aesthetic or non-lean are now seen as exerting significant pressure to maintain a thin and lean physique (Smolak et al.). The prevalence of this pressure to be thin throughout sports culture may be breaking down the aesthetic versus non-aesthetic distinction. Therefore, research has begun to investigate whether body image disturbance is present in all female athletes, rather than just aesthetic sport athletes.

Even with the inclusion of non-lean sport athletes, those involved in sports promoting leanness are often found to be at the greatest risk for body image disturbance, body dissatisfaction, and disordered eating. This is particularly alarming given the apparent push in more sports toward a leaner physique (Davis, 1992). Swami, Steadman, and Tovee (2009), compared levels of body dissatisfaction between female track athletes, martial artists, and non-athletes. Track athletes were chosen for their involvement in a sport where leanness is promoted. Conversely, martial arts are believed to promote strength over leanness/thinness, and there is little to no promotion of a narrow, sport-specific body type. It was hypothesized that track athletes would display higher levels of body dissatisfaction than the martial artists and non-athletes, due to their involvement in a lean sport. When asked to select their current body size from a scale presenting female figures ranging from very thin to obese, track athletes, but not martial artists, believed that they had larger bodies than did the non-athletes. However, according to body mass

index calculated from self-reported height and weight, track athletes actually had the lowest BMI of all three groups. Track athletes were found to have the highest level of body dissatisfaction, with no differences between martial artists and non-athletes. This is consistent with findings of other studies, which have found that sports promoting leanness often result in higher levels of body dissatisfaction. Thus, track athletes in this study actually had lower BMI scores than martial artists and non-athletes, but perceived themselves as larger and had greater body dissatisfaction. The potential explanation for this phenomenon is that track athletes are succumbing to pressures for thinness, such as those from coaches and teammates, as well as sport specific demands, by participating in a sport requiring endurance and leanness. Conversely, martial artists were believed to not have elevated body dissatisfaction because their sport emphasizes strength, rather than leanness or thinness. As a result, participants do not feel as much pressure to conform to a narrow, sport specific body size.

Based on results such as those by Swami et al. (2009), all female athletes are now considered an at-risk group for body image disturbance, regardless of the sport in which they participate (Davis, 1992). While aesthetic sport athletes often display the highest levels of body image disturbance and disordered eating, female athletes in general (aesthetic and non-aesthetic) demonstrate greater levels of these features than non-athletes. This trend, though sometimes small or insignificant for younger athletes, becomes significantly larger in college and more elite level samples (Smolak et al., 2000). These results demonstrate that female athletes as a group, regardless of the sport played, are at an increased risk for body image disturbance and disordered eating.

As mentioned previously, the perceived weight/performance connection (namely, that thinner athletes perform better) is not limited to lean sports, as was previously believed. Coaches and athletes across all sports appear to recognize this connection, and often are in agreement with the idea that thinness is associated with greater speed and agility, as well as resistance to fatigue. There is some evidence to suggest that weight above a certain level (which may vary by sport) may hinder performance. However, reducing weight below a healthy minimum can also be detrimental to performance, indicating that thinner athletes will not necessarily produce better results. For example, standards developed by The American College of Sports Medicine recommend a body fat percentage of 22.1% for optimal performance in female athletes, while the National Strength and Conditioning Association promotes a slightly higher 24-25% for females age 18-25 (Baechle & Earle, 2008; Kaminski, 2005). Yet, the still popular belief that thinness provides a competitive advantage, plus additional pressure from the pervasive social and cultural ideal that thinner is better and desirable, contributes to many female athletes developing an intense fear of gaining weight, regardless of whether athletes compete in lean or non-lean sports (Davis, 1992).

Another suggested contributing factor in female athletes' body image problems may be related to coaches' treatment of players of different body sizes or physiques. Because athletics often stress a particular body type as providing a performance advantage, coaches may place a heavy emphasis on physical characteristics (Cumming et al., 2005). The specific physical characteristics involved may vary from sport to sport (e.g., leanness in distance running, height in volleyball and basketball, etc.), but the general consensus often remains the same across sports; namely, that leanness or thinness

is important to optimal performance. Because this attitude is so prevalent throughout sports, it may be reasonable to postulate that coaches may evaluate players differently based on their body size or physique. However, in looking across gymnastics (a sport with a lean body ideal), basketball (a sport where tall stature is ideal), and soccer (a sport with no known body type), Cumming et al. found no correlation between coaches' ratings of athletes' ability and stature, body mass, or BMI. However, taller, heavier, or higher BMI gymnasts were more likely to perceive negative coaching behaviors. They perceived that their coaches provided less frequent instruction, encouragement (both in general and after a mistake), communication, and reinforcement, and perceived coaches as more likely to provide punishment. Therefore, while coaches did not report believing that skill level was directly tied to body type, the athletes perceived differential treatment by coaches based on athlete body type or physique. Therefore, it may be that how athletes subjectively perceive their coaches' judgments regarding their performance may be a more relevant than the coaches' objective ratings.

One of the key features regarding the effect of coaching behaviors on athletes' body image has been the role of critical body comments. The environment of sports exposes athletes to pressure regarding body shape and weight (Kerr, Berman, & DeSouza, 2006). Often, this pressure can take the form of critical comments about athletes' bodies, especially from coaches. Muscat and Long (2008), found that athletes who received critical comments regarding their bodies reported the greatest level of disordered eating. The highest amount of disordered eating was seen in individuals who recalled more severely critical comments. Furthermore, the more an individual was involved in athletics, the more critical comments she was capable of recalling.



Presumably, athletes are exposed to social pressure to be thin, as well as critical comments from coaches, trainers, teammates, spectators, etc. This combination of social pressures and critical comments may lead to negative body image and strict dieting practices, which are the building blocks of body image disturbance and disordered eating.

### **Objectification Theory and Body Image**

The results of Muscat and Long (2008) are often explained by employing the tenets of objectification theory (Fredrickson & Roberts, 1997). Objectification theory, which has also been used to explain the prevalence of eating disorders in women, is based upon the idea that individuals, particularly women, are judged based primarily on their bodies' usefulness to others. It argues that women are frequently "gazed" at and their bodies are inspected by others, which leads women to see themselves as a visual object to be appreciated by others, leading to continuous monitoring of one's outward appearance (Fredrickson & Roberts). This frequent objectification can then translate to mental health risks, such as body image disturbance and disordered eating among girls and women (Fredrickson & Roberts). It follows, according to objectification theory, that the extent to which a given social context makes a woman aware of observers' (actual or potential) gaze or perspective regarding her body will predict, to some degree, the type and amount of negative consequences that are experienced. An example of these negative consequences could be the development of body image disturbance or disordered eating. This may be especially important for athletes, because the context of athletics often makes an athlete keenly aware that her body and its usefulness is being evaluated by coaches, judges, spectators, and others. This theory has proved extremely useful, as it has been used to explain the correlations between concepts such as self-objectification,

body shame, appearance anxiety, and disordered eating (Greenleaf, 2001). Yet, while the effects of objectification have been well researched at the more extreme end of this spectrum, such as in instances of sexual violence, the impact of more routine and subtle objectification, as may be experienced by female athletes, has not been well established (Fredrickson & Roberts).

### **Social Physique Anxiety**

As mentioned previously, body image is understood to be a multi-dimensional construct, encompassing several aspects of how individuals conceptualize and feel toward their bodies. Related to the constructs of body image and body satisfaction/dissatisfaction, is the idea of social physique anxiety (SPA; Hart, Leary, & Rejeski, 1989). SPA has been defined as the level of concern that others are negatively evaluating one's body or physical appearance, or as a "subtype of social anxiety that occurs as a result of the prospect or presence of interpersonal evaluation involving one's physique" (Hart et al., 1989, p.96). Because most individuals want to make a positive first impression and to be considered attractive, the realization that one's physique (i.e., body form and structure, such as body fat, muscle tone, proportions, etc.) or body is being evaluated can provoke anxiety.

Anxiety resulting from evaluation of one's physique may be an especially relevant issue for female athletes, because sports place a heavy emphasis on self-presentation, and athletes often feel as though their physique and skill are perpetually being evaluated by coaches, spectators, teammates, competitors, etc. This can be exacerbated by the fact that in many sports, athletes may believe that physique is equated with skill level, with more toned or lean athletes being considered more athletic or

skillful. Furthermore, many sports appear to exert substantial pressure to conform to a specific body type. Given this environment, it is possible to understand why some athletes may feel anxiety regarding evaluation of their appearance (Krane et al., 2001). Like many aspects of body image, SPA is subject to a substantial amount of individual difference. Individuals with high levels of body satisfaction and who are comfortable with the idea of their physique being evaluated may rarely experience SPA. However, those who have significant body dissatisfaction, or, who are very concerned with their physiques being evaluated, are likely to suffer from chronic SPA. This chronic SPA can even lead to avoidance of situations where judgments are likely to occur (Hart et al.). In the context of sports participation, this may result in females avoiding or discontinuing athletic participation in order to reduce SPA.

Krane et al. (2001) hypothesized that the major determinant of SPA in athletes is not the type of sport, but rather the type of uniform. The rationalization for this hypothesis is that athletes in revealing uniforms are most likely to feel as though their bodies are on display and being evaluated, which would result in higher SPA and lower body satisfaction. To study this, uniforms were classified as “revealing”, “baggy”, or “mixed”. Revealing uniforms were form fitting, and allowed body shape to be easily observed, such as in cross country, track, swimming, gymnastics, and figure skating. Baggy uniforms did not permit easy observation of body shape, and had to have both a baggy top and bottom. Examples of baggy uniforms included basketball, soccer, and softball. Mixed uniforms were composed of baggy tops with more revealing or tighter briefs, shorts, or skirts, such as volleyball, tennis, and lacrosse. Interestingly, current volleyball and tennis uniforms would likely place them into the revealing category, as

most uniforms are now made with spandex/form fitting tops. Participants were taken from four Division I Midwest universities, and were compared to female students who exercised routinely, but were not collegiate athletes. In both groups, body dissatisfaction and drive for thinness were found to be the best predictors of SPA. Surprisingly, among the athletes, the type of uniform worn was not found to influence SPA, body dissatisfaction, drive for thinness, or symptoms of bulimia. According to these results, female athletes' likelihood to experience anxiety due to the potential evaluation of the physique was not dependent upon how much of their bodies is evident from their uniforms. Rather, it appears that SPA was more strongly influenced by how much an individual is dissatisfied with their current body, and how much she strives to become thinner.

### **Athletes and Sociocultural Influences on Body Image**

Female athletes, especially those competing at elite or highly competitive levels of competition spend a significant amount of time immersed in the environment of athletics. As mentioned previously, this environment often supports the notion that thinness is required for optimal athletic performance (Powers & Johnson, 1996). However, these athletes are also subjected to the same sociocultural forces as non-athletes. Therefore, research has attempted to examine whether female athletes respond differently to sociocultural influences regarding body standards, particularly through the effects of media messages.

Athletes are placed in a difficult position regarding which messages regarding the female body are to be internalized. While female athletes are constantly exposed to societal norms emphasizing thinness as paramount within the TDP media, a new form of

media and ideal body has blossomed recently, which focuses on athleticism and sports. Magazines that reportedly promote stronger and athletic bodies, such as *Shape* and *Fitness*, have emerged and gained in popularity. Even mainstream publications such as *Glamour* appear to be giving increasing attention to the athletic ideal. The noted increase in the percentage of magazine articles and advertisements that promote strength, toning, and muscle development has led some researchers to suggest that society is beginning to once again shift its standards of the ideal female body, to a more muscular, toned, and athletic physique (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999).

The creation and popularization of this new form of media emphasizing athletic women has created a debate regarding its role and effect on females. Women in sports media are still almost exclusively personified as extremely lean, leading some researchers to argue that this new form of media should be included into the mainstream TDP media (Harrison & Fredrickson, 2003). For example, in both entertainment and sports media, the thinnest actresses or athletes typically garner the greatest rewards and attention. Swimmer Dara Torres and volleyball player Gabrielle Reese are personified as icons and have achieved substantial crossover into popular media. Both have been featured in publications such as the *Sports Illustrated* Swimsuit Edition, where they are admired for their incredibly toned and thin body physiques (Bissell, 2004). Proponents of the view that sports media is merely another form of TDP media state that viewers are encouraged to look at the athletes' bodies, objectify them, and appreciate them for their thinness or leanness (Harrison & Fredrickson). On the other side of this debate, however, is the belief that the popularization of media images of athletes from sports where athletes'

bodies are less on display, such as basketball or softball, demonstrates that this emerging form of media is separate and distinct from the traditional thin ideal media.

In an effort to clarify the relationship between entertainment media, sports media, and female athletes, Bissell (2004) asked non-lean sport athletes to report the time they spent watching thin ideal television programming and reading thin ideal magazines, as well as time watching televised sports programming and reading sports magazines. Athletes with more exposure to the thin ideal media were found to be higher on body image disturbance, as compared to those with more exposure to sports media. This implies that sports media exposure may provide some benefit or protection (or at least be less harmful than the TDP media), and may result in more positive attitudes about the body. However, athletes in general still displayed relatively high levels of body dissatisfaction and drive for thinness, and reported alarmingly high levels of behaviors associated with bulimia and anorexia. Based on these results, Bissell concluded while exposure to sports media may be more beneficial/less harmful than exposure to entertainment media, neither being involved in competitive athletics, nor being a consumer of sports media was sufficient to protect female athletes from the harmful messages being internalized from thin ideal media exposure.

While studies have demonstrated that increased attention is being paid to the athletic ideal throughout various forms of media, it remained unclear how much women were active consumers of this new sports media. Samples of female college students have demonstrated that these women generally ignore sports media (e.g., sports magazines, televised sporting events, etc.), especially female sports media. However, it may be reasonable to suggest that female athletes may pay more attention to this new

media form and blossoming athletic ideal than their non-athlete counterparts (Bissell & Zhou, 2004). This assumption has received some empirical support, as female athletes do appear to be more likely than non-athletes to subscribe to magazines promoting strength and athleticism. They are also more likely to watch female athletic competitions, which often feature elite level, highly toned female athletes (Bissell, 2004).

Based on growing empirical literature, it appears that sports media has been rising in popularity and infiltrating mainstream media, and that female athletes are more likely consumers of this form of media. This is important information, because women who read sports magazines or watch televised sports have been found to have higher levels of body satisfaction as compared to individuals who generally ignore sports magazines and television (Harrison & Fredrickson, 2003; Tiggemann & Pickerins, 1996). Based on these results, it has been suggested that exposure to sports media has a positive effect on females' body image and body satisfaction. However, contradictory research has also emerged, showing that females reading sports media and watching lean sports have lowered body satisfaction and increased self-objectification (Harrison, 2000; Harrison & Fredrickson, 2003). Like many areas of body image research, the results have been shown to be open to interpretation and in need of further validation.

To help explain this contradictory research, it was once again proposed that the relevant dimension is the type of sports involved. Exposure to certain sports media (namely, aesthetic/lean sports) may be detrimental, while exposure to other sports media (namely, non-aesthetic/non-lean sports) may be beneficial. Women viewing sports such as basketball, soccer, or golf may focus on female athletes' abilities and athleticism, rather than their thinness or leanness. This may result in a sense of pride at seeing a

female athlete succeed, which does not create negative feelings regarding one's own body. However, while viewing lean sports, negative reactions and comparisons may occur due to the focus on athlete's body shape or physique (Bissell, 2004). This theory has been supported by Bissell & Zhou (2004), who found that viewing lean sports results in negative consequences such as increased drive for thinness and disordered eating, but watching non-lean sports produces more positive consequences. Based on these results, it is clear that a relationship exists between the media and attitudes toward body image, but the underlying nature of this relationship remains less definitive (Bissell).

Female athletes are being presented with mixed messages regarding what is considered the ideal body, and to what they should aspire. From the TDP media, the message is that thinness is ideal. This idea may be advanced in sports culture by the perceived association between thinness and athleticism. However, sports media may present an alternative viewpoint that promotes strength and toning, which may be endorsed by some coaches, strength trainers, etc. Because female athletes can often be caught in the crossfire of these competing viewpoints, research has begun to examine what messages these athletes internalize regarding ideal female body.

Swami et al.'s (2009) previously discussed study involving martial artists, track athletes, and non-athletes also investigated what each group internalized regarding ideal female body. It was hypothesized that track athletes' involvement in a lean sport would result in these athletes internalizing a thinner figure as ideal. However, there was no difference between any of the groups on what was considered to be the ideal female figure, defined as the figure they would most like to possess. All three groups selected a figure that was significantly underweight. Therefore, it appears that the strongest



predictor of ideal female body may not be type of sport participation, but may instead be a more overarching factor affecting all women, such as internalization of media ideals.

Swami and Tovee (2009) studied street dancers and non-dancers to ascertain the degree to which individuals internalized and accepted the newly popular athletic and toned body ideal presented by the media, and its potential consequences. Street dancers were chosen because they are active individuals, participating in an activity believed to be tolerant of a wider range of body sizes. Internalization of the athletic ideal presented in the media was found to be predictive of the discrepancy between individuals' reported actual and ideal weight among the dancers. This supports the notion that media depictions of the athletic ideal can help to predict body dissatisfaction in female athletes. However, the predictive ability does not appear to be present among non-athletes. Therefore, the extent to which the athletic ideal is internalized is a key dimension, because it may help to predict how much body dissatisfaction an athlete experiences.

### **Positive Effects of Sports Participation**

Amidst the staggering amount of literature demonstrating the detrimental effects of sports participation on girls' and women's body image, it should not be forgotten that the popular belief exists that sports are beneficial for young girls self-esteem, self-efficacy, etc. Nike once ran an advertisement promoting the idea that girls who participate in athletics will be more likely to succeed in school, have higher self-esteem, have more successful careers, and avoid problems such as drugs, alcohol, and teen pregnancy (Bissell, 2004). And while many studies have determined that athletes are at higher risk than the general female population to develop body image disturbance (Swami et al., 2009), this finding has not been universal (Anderson, Zager, Hetzler,

Nahikian-Nelms, & Syler, 1996; Fulkerson, Keel, Leon, & Dorr, 1997; Hausenblas & Mack, 1999). For instance, females participating in non-aesthetic sports at non-elite levels have sometimes been found to have higher body satisfaction than similarly aged females within the general population (Smolak et al., 2000). There has also been some evidence to suggest that sport participants have lower levels of SPA (Diehl & Petrie, 1995; Wilkins, 1991). Among boys and men, athletic participation increases self-esteem (Smolak, et al.). The research involving girls and college women, however, is much more mixed and inconclusive (Butcher, 1989; Cate & Sugawara, 1986). It was previously believed that women involved in athletics would have less body image disturbance and disordered eating, because sports were believed to increase self-esteem, which is often correlated with lower levels of psychopathology. Furthermore, it was believed that athletics would allow young girls to take pride in an aspect of themselves that was completely separate from their appearance. This, in turn, would allow young women to see their bodies for what it could do and how it functions, rather than for how it appears to and is judged by others (Smolak et al.). However, given the prevalence of the current belief that leanness is integral to athletic success, this line of logic may no longer be applicable, as sports may not be able to be separated from appearance. Thus, it appears that female athletes may be receiving an incredible amount of conflicting information. According to Nike and popular wisdom, sports will make them successful, strong, confident, and more satisfied with themselves and their bodies, regardless of how thin they are (Bissell, 2004). Yet, most cultural messages they receive still promote the notion that people who are successful and desirable are those that are thin and attractive, an idea that may be reinforced within sports culture.

### **The Effect of Level of Competition on Body Image**

One proposed explanation for the discrepant findings regarding female athletics and whether participation is beneficial or detrimental regarding body image is that most studies finding positive effects of sports participation on female athletes' body image and eating concerns fail to take into account the important variable of level of competition (Brownell & Rodin, 1992).

If the theory is correct that sports foster an environment in which thinner is equated with greater success or better performance, it is reasonable to assume that higher levels of athletic competition, where pressure is intensified and athletes are willing to sacrifice more to obtain a competitive advantage, will produce athletes with more body dissatisfaction and disordered eating. However, even as the research regarding body image has expanded to encompass more sports, significantly less attention has been paid to competition level, and its potential role in issues of body image.

Davis (1992) explored the role of competition level, in a study that looked at body image concerns, and weight preoccupation among high performance athletes. All of the athletes involved were competing at either the national or international level within their chosen sport. No distinction was made between lean and non-lean sports, and athletes were taken from a variety of sports; namely, basketball, diving, gymnastics, sprinting, field hockey, figure skating, downhill skiing, synchronized swimming, and volleyball. Results showed a much higher level of unhealthy dieting behavior, weight concerns, and body image disturbance within the elite level athletes. In fact, even those elite athletes who were objectively underweight still reported being dissatisfied with their bodies and were frequently dieting. Interestingly, objective body weight (as measured by BMI), was

not related to body image, weight, and dieting concerns. However, subjective body size, or how the women perceived their body size, was independently and strongly related to these concerns. In this sample of elite level athletes, 29% of the variance in body image concerns was accounted for by subjective body size. This is significantly higher than the 11% of variance accounted for by subjective body size in an earlier study of exercising women (Davis, 1990). Therefore, it was postulated that competitive sports encourage athletes to be pre-occupied with their bodies, and actually encourage them to be self-critical of their bodies, as well. Furthermore, the body image of female athletes appears to be tied more closely to subjective ideas of current and ideal body size, rather than an individual's objective body size. This provides significant evidence to the claim that female athletes are under strong pressure to minimize body fat to unhealthy levels, and that many athletes are willing to engage in extreme behaviors to achieve this goal, for the sake of athletic performance. It appears that even athletes at elite levels, who some may argue should be most attuned to the importance of a strong and healthy body, often succumb to the pressure to be thin at all costs and to evaluate one's body negatively (Davis, 1992).

In an attempt to clarify the contradictory research regarding female athletic participation and issues of body image and disordered eating, Smolak et al. (2000) conducted a meta-analysis on the existing research on athletes and body image. One of the factors that this study explored was the effect of competition level on each study's findings. Elite athletes (those competing at the national or international level) were consistently found to be at the highest level of risk for body image disturbance and disordered eating. However, non-elite athletes competing in non-aesthetic sports were

sometimes found to be lower in disordered eating than non-athletes. From these results, Smolak et al. suggested that perhaps athletes competing for fun, fitness, or for social interaction may see benefits from athletic participation, while those engaged in more competitive contexts may be at risk for body image disturbance. However, the researchers noted that the literature needs to expand beyond studying gymnasts and dancers, where much of previous research has been focused.

### **Positive Body Image**

An examination of the literature on body image reveals that the vast majority of research has focused on body image pathology. Most research has been devoted to examining negative body image and how it relates to issues such as body dissatisfaction and disordered eating. Because of this skew toward investigating the pathological elements of body image, much less is known about positive body image and its associated features (Avalos et al., 2005). Even with the increase in popularity of the positive psychology model, by researchers such as Seligman and Csikszentmihalyi, very little attention has been paid to elements of positive body image, and how it is developed and maintained. One notable exception is a study conducted by Williams, Cash, and Santos (2004), which found that women with positive body images have greater appearance satisfaction, less body image distress, and a greater likelihood to feel that their body image has favorably influenced their life and functioning. In terms of personality characteristics, these women possess greater levels of optimism, self-esteem, and adaptive coping, while simultaneously having lower levels of perfectionism. While this research helps to identify co-occurring characteristics of women with positive body

image, it does little to identify factors that helped to develop this positive body image, or how it is maintained in the face of substantial social pressures to be thin.

In an effort to help address the paucity of literature regarding positive body image, Avalos et al., (2005), developed the Body Appreciation Scale (BAS). The development of the BAS is significant because it allows for research into factors that may be related to positive body image, rather than just pathology. For example, scores on the BAS have been found to be related to a greater tendency to favorably evaluate one's own appearance, as well as lower levels of body preoccupation, body dissatisfaction, and eating disorder symptomatology. However, the developers of the BAS admit that more research is necessary to examine how various groups, including female athletes, perform on the BAS. Furthermore, there has not been research examining whether scores on the BAS correlate with an individual's objective body size.

### **Athletes and Body Appreciation**

As stated previously, increasing numbers of studies are attempting to discover whether sports are protective or harmful, with regard to female body image problems and disordered eating. With the development of the BAS, body appreciation is gaining popularity as a method for measuring positive or protective body image factors. Swami and Tovee's (2009) previously discussed study involving street dancers and non-dancers also compared body appreciation between the two groups. The hypothesis was that street dancing would provide these women with the opportunity to see their bodies as strong and functional, which would lead to greater body appreciation. Even though both groups had the same amount of discrepancy between their actual and ideal body sizes, the street dancers demonstrated significantly higher body appreciation than non-dancers. It was

believed that while street dancers may still have a preoccupation with their weight, as many active women do, they were more respectful of their bodies because dancing provided them with many opportunities to view their bodies as functional. This suggests that if female athletics can provide women with the opportunity to see their bodies as strong and functional, rather than merely in terms of thinness or attractiveness, then athletics could potentially help women to have a greater appreciation for their bodies, rather than promoting body image disturbance.

### **Assessing Body Image**

Because body image is a multidimensional construct, assessing several different facets (e.g., body dissatisfaction, body appreciation, etc.) allows for a more thorough grasp of the concept of body image to be obtained. Various strategies have been developed to aid in studying and understanding of these domains.

### **Current and Ideal Body**

Current body size can either be assessed through objective measurement or through self-report and subjective measures. Objective measurement of current body size involves procedures such as weighing participants, taking measurements, or performing body fat analyses. While objective measurement may provide more precise data, it is also more time and labor intensive, and may cause anxiety or distress for participants. When employing self-report methods, participants are often asked to provide their height and weight, which is converted into BMI. This is considered an acceptable approach because research has demonstrated that self-reports of height and weight are valid and reliable, provided participants' anonymity is assured (Davis, 1990). Finally, figure rating scales are sometimes employed as a subjective measure of current body size. Figure

rating scales are usually comprised of frontal-view figures, outlines, or silhouettes of bodies of various sizes. These scales often range from extremely thin to extremely overweight. Using this scale, individuals are usually asked to select the figure that most closely resembles their current body size.

Ideal body is most often measured using figure rating scales, as individuals are commonly asked to select the figure that most closely represent what they believe to be ideal, or the figure they would most like to possess. One of the original figure rating scales was developed by Stunkard, Sorenson, and Schulsinger (1983). The Stunkard Figure Rating Scale is composed of nine hand drawn female figures, from underweight to overweight. The advantage to this scale is that it offers easy administration, and places low demand upon participants. However, Stunkard's Figure Rating Scale is often criticized because the change between figures on the scale is not uniform (Lenart Goldberg, Bailey, Dallal, & Koff, 1995). Furthermore, while it is easy to discriminate the amount of fatness the figures display, there is no observable difference in muscularity. In fact, this is a common problem with most figure rating scales, as most show figures with very little muscularity (Lenart et al.).

Since the introduction of the Stunkard Figure Rating Scale, various other scales have been developed to accommodate different populations and to correct some of the limitations of the original scale. For instance, Thompson and Gray (1995) developed the Contour Drawing Scale, which uses more consistent gradations between figures on the scale. Other scales have included front and side-view silhouettes using actual photographs to provide more realistic options than drawn outlines (Salusso-Deonier, Markee, & Pedersen, 1993). To make scales more inclusive of a more diverse



population, some scales, such as Klawitter's Figure Rating Scale, have included figures of different races (Klawitter-Schippers, 2009). The Visual Image Rating Scale adds physique contouring, shading, and three dimensionality to the standard type of silhouette commonly used in figure rating scales (VIRS; Goldberg, Bailey, Koff, & Lenart, 1996). However, even with the development of various figure rating scales, the vast majority failed to account for differences in muscularity, despite the fact that women have been showing increased interest in more athletic physiques (Lenart et al., 1995).

Because of the failure to account for muscularity within figure rating scales, Lenart et al. (1995) developed the Athletic Image Scale (AIS). The AIS altered a single figure to create 30 different figures with varying degrees and locations of muscularity. The creation of the AIS was a significant development, because it allowed for the evaluation of physique, rather than just body size. Furthermore, because the AIS also contains standard figures (i.e., figures without overt muscularity), it allows for the assessment of drive for muscularity, in addition to desire for thinness. This makes it a valuable instrument to evaluate ideal body preferences in female athletes, who may desire a more muscular physique. Therefore, because the current study investigates body image in female athletes, the AIS was selected to measure subjective and ideal body size. However, even with its potential advantages, the AIS has not become a widely used instrument, perhaps because it does not have a simple system of thinnest to heaviest figures, which would allow for easier comparisons between current and ideal figure choices.

## **Body Dissatisfaction**

Body dissatisfaction has become an important avenue of research within the field of body image. As such, many measures have been developed to assess feelings of satisfaction or dissatisfaction with one's body. The Body Cathexis Scale was one of the first scales designed to measure how one feels about his or her body (Jourard & Secord, 1954). It contains 40 aspects about the body, such as hips, thighs, ankles, feet, and nose length, and individuals are asked to rate how they feel about these various body parts. This scale was important because it inspired the development of many more scales designed to measure various facets of body image. However, the Body Cathexis Scale is not as commonly used in current scientific research, due to the development of other similar scales. Furthermore, as the list of body aspects on the Body Cathexis Scale contains elements that are appearance, but not physique, related (e.g., nose length, feet, etc.), there are often better scales to use when the research question involves body image as it relates to physique or body size.

Another technique that is sometimes used to measure body dissatisfaction is to simply ask participants to report their current weight, and the weight that they would ideally like to be. The difference between these two numbers is then calculated and used as an indicator of body dissatisfaction, with a larger discrepancy indicating greater body dissatisfaction (Schwarz et al., 2005). While this approach has the benefit of being simple to conduct and not requiring lengthy questionnaires, it is probably not the most sensitive or accurate measure of body dissatisfaction. Body dissatisfaction can arise from many factors besides weight, such as body measurements and composition. Therefore, merely asking for current and ideal weight fails to account for factors such as these.

A commonly used method of evaluating body dissatisfaction is through the use of the Body Esteem Scale (BES; Franzoi & Shields, 1984). The BES measures how satisfied an individual is with various aspects of her body, and contains subscales for sexual attractiveness, weight concern, and physical condition. This measure has also been adapted for use with ages 12-25, which is known as the Body Esteem Scale for Adolescents and Adults (BESAA; Mendelson, Mendelson, & White, 2001). The BESAA is a self-report measure that assesses attitudes and feelings about the body and appearance. It contains an Appearance (e.g., “I am pretty happy about the way I look”), Weight (e.g., “I really like what I weigh”), and Attributions (e.g., “Other people make fun of the way I look”) subscale. While this is a popularly used measure, it was not selected as the body dissatisfaction measure for the current study because of its inclusion of items that are not necessarily physique or weight related (e.g. “I like what I look like in pictures”).

While many measures of body dissatisfaction have been developed, such as the Body Shape Questionnaire and the Body Parts Satisfaction Scale, one of the most commonly used methods of assessing body dissatisfaction remains the Eating Disorders Inventory – Body Dissatisfaction Subscale (EDI-BDS; Garner, Olmstead, & Polivy, 1983). The BDS measures dissatisfaction with specific body parts related to concerns women often have regarding their weight and physique (e.g., hips, thighs). Unlike other measures of body dissatisfaction, the BDS focuses on shape and physique, rather than overall appearance (e.g., nose, lips, etc.). The EDI-BDS has repeatedly demonstrated good psychometric properties and has been shown to be one of the only subscales on the EDI that is predictive of the development of disordered eating (Garner, Garfinkel,

Rockert, & Olmsted, 1987; Thompson & van den Berg, 2002; Tylka & Subich, 2004; Wear & Pratz, 1987). Therefore, the EDI-BDS has become a very popular method of assessment for body dissatisfaction, and is a commonly used instrument in research, including the present study.

### **Social Physique Anxiety**

Very few measures exist that are designed to measure the anxiety that individuals experience as a result of evaluation of the body by others. The Objectified Body Consciousness Scale (OBCS) attempts to assess a similar phenomenon, as it measures the extent to which women engage in surveillance of their own bodies, as well as the degree to which they experience body shame (McKinley & Hyde, 1996). While this is a similar issue, it is somewhat different than true social physique anxiety, in that it neglects the important piece of evaluation of the body by others.

Recognizing the paucity of measures designed to measure social physique anxiety, Hart et al. (1989) developed the Social Physique Anxiety Scale (SPAS). The SPAS is a self-report measure designed to assess the anxiety that an individual experiences as a result of the evaluation (or perceived evaluation) of their physique by others. Given the lack of other assessment instruments in this area, the SPAS has become a commonly used instrument for the measurement of SPA, and will be used in the current study (Hart et al., 1989; Krane et al., 2001).

### **Body Appreciation**

As mentioned previously, much of body image research has focused on negative body image and pathology. Therefore, very few measures exist that are designed to measure elements of positive body image. For this reason, Avalos et al. (2005)

developed the Body Appreciation Scale (BAS). The BAS measures four key facets of positive body image and body appreciation. First, it measures favorable opinions of one's body, regardless of actual physical appearance. Second, it examines levels of body acceptance, in spite of issues such as weight, body shape, and imperfections. Third, an individual's respect for the body, by showing attentiveness to its needs and engaging in healthy behaviors, is assessed. Fourth, the BAS examines the degree to which an individual provides protections for the body by rejecting narrow, restrictive, or unrealistic body images as promoted by the media. Because of the scarcity of instruments designed to measure positive body image, the BAS has become a commonly used measure for research interested in this area. The current study will utilize the BAS as a measure of positive body image (Avalos et al.; Swami & Tovee, 2009).

### **Sociocultural Factors and Internalization**

Even though internalization of messages regarding the thin ideal has been shown to be influential in the development of body image disturbance and disordered eating, only two widely used measures have been developed to evaluate internalization. While the exact reasons for this are not known, it is possible that the scarcity of measures of internalization is due to the fact that the influence of sociocultural factors is multidimensional and complex, and that societal ideals regarding appearance are fluid and shifting, which would necessitate frequent updating of scales. Therefore, only two measures are commonly employed to measure sociocultural factors influencing body image and the degree to which messages from these sources are internalized.

The first instrument designed to assess sociocultural factors and internalization is known as the Ideal Body Internalization Scale - Revised (IBIS-R; Stice, 2001; Stice &

Agras, 1998; Stice & Bearman, 2001). The IBIS-R was widely used as a measure of thin-ideal internalization, and contains ten statements regarding what is considered attractive, such as “Thin women are more attractive,” and “Women with toned bodies are more attractive.”

The second instrument for assessing sociocultural influences and internalization is the Sociocultural Attitudes Toward Appearance Questionnaire-3 (SATAQ-3; Thompson et al., 2004). The SATAQ-3 measures the extent to which individuals have internalized Western standards of beauty, and contains four subscales. The Information subscale measures the degree to which different media sources are considered key sources of information regarding attractiveness. The Pressures subscale examines how much individuals feel pressured by the media to pursue beauty ideals. The degree of endorsement and acceptance of media messages promoting narrow beauty ideals and willingness to work toward these ideals is measured by the Internalization – General subscale. Finally, because of the emergence of the new athletic ideal in the media, the SATAQ-3 (as opposed to earlier versions of the measure) includes an Internalization – Athlete subscale. The Internalization – Athlete subscale measures the level of endorsement and acceptance of the new athletic and toned body ideal presented in the media.

While both the IBIS-R and SATAQ-3 are used in research, the SATAQ-3 has become the more widely used measure. One reason for this preference is that the SATAQ-3 has undergone several revisions and has incorporated new sociocultural influences when necessary, such as through the addition of the Internalization – Athlete subscale. But perhaps the more relevant reason stems from the fact that the IBIS-R has

been shown to reflect awareness of appearance norms, but fails to account for how one personally feels regarding these norms. For example, the IBIS-R contains statements such as “Thin women are more attractive.” Endorsing this item may mean that an individual is aware of the cultural emphasis on thinness. However, this does not necessarily mean that the individual is in agreement with this particular appearance norm. Therefore, the IBIS-R is now seen as a measure of awareness, rather than internalization, of appearance standards (Thompson et al., 2004). Because internalization has been shown to be more influential in the development of body image disturbance and disordered eating, the SATAQ-3, which measures internalization, has become the more widely used instrument. Therefore, it will be used as a measure of internalization of sociocultural influences in the current study.

### **Current Study and Hypotheses**

The present study seeks to examine various aspects of body image among female collegiate volleyball players as compared to non-athletes. It attempts to expand the current literature on body image beyond the sports typically studied, such as gymnastics and dance. Volleyball, therefore, presents an interesting avenue of exploration, because it is a sport where height and strength are often advantageous, but where there is also significant emphasis on athletes being lean and agile in order to improve performance.

The current study investigates how volleyball players and non-athletes perceive their bodies (e.g., degree of muscularity, thinness, etc.), as well as what type of female body they consider to be ideal. Because athletes and non-athletes may be impacted by different factors regarding body standards, the degree of internalization of various sociocultural influences will be examined. This will help to ascertain which messages are

being internalized regarding the body, such as the promotion of an overly thin versus an athletic ideal. The present study also seeks to investigate the level of body dissatisfaction experienced by volleyball players as compared to non-athletes. Because there is evidence to suggest that level of competition is related to body dissatisfaction in athletes, competition level will be examined to ascertain if a relationship exists between Division level and body dissatisfaction among collegiate volleyball players. Furthermore, because volleyball players have the potential to be subjected to significant evaluation of their bodies by others, the level of social physique anxiety experienced by athletes and non-athletes will be explored. Volleyball athletes may serve as a particularly interesting population, as the standard volleyball uniform has changed substantially in recent years toward a much more form-fitting standard where physique may be more easily discerned. Finally, to address potential positive effects of sports participation, the current study will seek to investigate the level of body appreciation in both volleyball players as well as non-athletes. It is hoped that through inclusion of these various factors (e.g., ideal body, internalization, body dissatisfaction, social physique anxiety, body appreciation), the present study can help to illuminate some of the many dimensions included in the multifaceted construct of body image, particularly as it relates to female collegiate athletes.

This study is unique from the previous literature on female athletes' body image in various ways. First, as mentioned previously, it examines a sport that is not often the primary focus of body image research and one which appears to bridge the gap between the traditional lean and non-lean sports. Second, it examines current and ideal body in terms of muscularity and athleticism, not just thinness as is commonly the case within the literature. It is believed that including muscularity is important when investigating



athletes who may place an added emphasis on athleticism. Yet despite this, very few studies use scales such as the AIS that incorporate athleticism and muscularity, even when athletes are the population under investigation. A third unique dimension of this study is the inclusion of both positive and negative effects of athletic participation on body image. The literature on positive body image components, such as body appreciation, is startlingly sparse. There is even less research on positive facets in female athletes, particularly those competing in non-lean sports. Therefore, this study seeks to add much needed research to the question of whether athletic participation might encourage more appreciation for one's body and its strengths and abilities. Finally, the current study includes the often neglected variable of level of competition into the analyses of body image. Level of competition has recently gained attention as a notable potential moderating variable in terms of how athletic participation impacts body image. However, few studies include this factor in analyses, and those that do often use very discrepant levels of competition, such as comparing National/Olympic level athletes to high school athletes (Davis, 1992; Smolak et al., 2000; Torstveit et al., 2008). In the current study, the level of competition examined is relatively narrow (i.e., differences in NCAA Division level). Therefore, it is hoped that this analysis will help to illuminate any differences that exist in this rarely explored level of competition. The inclusion of these unique facets illustrates the importance of the current study in expanding the literature on the effects of athletic participation on body image.

Based on the current literature, certain hypotheses can be made regarding the current study on female athletes and body image. First, it is hypothesized that female collegiate athletes will view their current body as more muscular than non-athletes.

While the literature suggests that both athletes and non-athletes will find an underweight figure as ideal, few studies have used scales that take muscularity into account. One study suggests that both athletes and non-athletes will select a similarly muscular figure as ideal, possibly due to the popularization of the athletic ideal among the general population (Lenart et al., 1995). Therefore, the second hypothesis is that athletes and non-athletes will choose similarly muscular figures as representative of the ideal female body, though this figure is likely to still be underweight. Third, volleyball players are expected to demonstrate a greater degree of internalization of the athletic ideal as promoted by the media. Fourth, it is hypothesized that volleyball players will report greater body dissatisfaction as compared to non-athletes, and that higher levels of athletic competition (e.g., Division I vs. Division III) will be associated with more body dissatisfaction. Fifth, individuals who score high on internalization are expected to experience greater body dissatisfaction than those with lower internalization, regardless of athletic participation status. Because the research is limited and somewhat mixed, it is difficult to predict how athletes and non-athletes will score in regard to SPA. However, according to the available research, it is hypothesized that volleyball players will actually report lower levels of SPA as compared to non-athletes. Seventh, volleyball players are expected to experience greater body appreciation than non-athletes, due to athletes' opportunities to view their bodies as strong and functional through the context of athletic participation.

## CHAPTER III

### METHOD

#### **Participants**

Participants were classified according to their status as either collegiate volleyball players or non-athletes.

#### **Volleyball Players**

The online survey was completed by 229 volleyball players. Two participants' response were removed from the file because they identified themselves as males (it is hypothesized that these were coaches who chose to complete the survey). An additional fourteen participants' responses were eliminated because they were multi-sport athletes (volleyball and another intercollegiate sport). Finally, four athletes' data were removed because they self-reported having been diagnosed with an eating disorder. This resulted in 209 female collegiate volleyball players in the final analysis (age  $M = 19.76$ ,  $SD = 1.083$ ). These athletes represented all levels of NCAA competition, with 33 competing at a Division I institution, 83 from Division II, 92 from Division III, and 1 participant who failed to report her school or competition level. A range of years of intercollegiate competition was represented within the sample ( $M = 2.05$  years,  $SD = 1.00$ ). Among the group of collegiate volleyball players, 91 athletes (43.5%) reported currently receiving athletic scholarships, while 118 players (56.5%) were not receiving an athletic scholarship. The large number of athletes not receiving athletic scholarships is mostly due to the high number of Division III athletes who responded (92 athletes), as Division III institutions are prohibited from offering athletic scholarships. Based on the volleyball players' self-report, their average height and weight was 69.10 inches ( $SD = 2.997$ ) and

154.90 pounds ( $SD = 1.491$ ). The self-reported height and weight was used to calculate the BMI of each participant ( $M = 22.77$ ,  $SD = 2.54$ ). This BMI is in the average range. In terms of ethnicity, 90.4% reported as White/Caucasian, 3.3% as bi-racial/multi-racial, 2.4% as Asian/Asian American, 1.4% as Black/African American, 1.4% as Hispanic/Latina, .5% as Native Hawai'ian/Pacific Islander, and .5% as American Indian or Alaskan Native. None of the athletes reported any significant involvement with non-intercollegiate athletics (club sports or intramurals).

### **Non-athletes**

The online survey was completed by 130 individuals who did not participate in intercollegiate volleyball. Ten participants' responses were removed because they reported participating in intercollegiate athletics for a different sport. Another two participants' responses were eliminated because they fell far outside of the expected age range. Finally, one individual's responses were removed because she reported being diagnosed with an eating disorder. Therefore, the final group of non-athletes included in the study consisted of 117 female college students (age  $M = 19.44$ ,  $SD = 1.163$ ). The majority of these individuals, 100 participants, attended institutions that participate at the Division II level of competition (85.5%), while 11 (9.4%) were at Division I institutions and 5 (4.3%) were at Division III institutions. One individual did not provide enough information to classify her academic institution's competition level. While 80.3% of the sample denied any involvement with non-intercollegiate athletics, 7.7% participated in club sports, 8.5% were involved with intramural sports, and 3.4% participated in both club and intramural athletics. The average height and weight of the non-athletes was 64.93 inches ( $SD = 2.921$ ) and 148.62 pounds ( $SD = 32.334$ ), respectively, with an

average BMI was 24.78 (SD = 5.015). This is at the top of the normal range (>24.9 is classified as overweight). In terms of ethnicity, 82.1% identified as White/Caucasian, 13.7% as Black/African American, 2.6% as bi-racial/multi-racial, and 1.7% as American Indian or Alaskan Native.

### **Demographic Information**

Means and standard deviations for the age, height, weight, and BMI of the volleyball players (as a group and broken down by level of competition) and the non-athletes are provided in Table 1, and information regarding the ethnic composition of these groups is provided in Table 2.

### **Measures**

#### **Ideal Body**

As mentioned previously, there are many different figure rating scales that have been developed to evaluate current and ideal body, but few that provide images with varying degrees of muscular definition (Fallon & Rozin, 1985; Lenart et al., 1995; Stunkard et al., 1983). Female athletes are a unique population whose views regarding their current and ideal physique may differ from the general population. Furthermore, the given trend toward an emphasis on more toned and athletic bodies may require a measure that incorporates different levels of muscularity. For this reason, the Athletic Image Scale (AIS; Lenart et al., 1995) was used to evaluate participants' perceived current and ideal body physique.

The AIS uses 30 photographs of a single female that have been systematically altered to create different regions and degrees of muscularity. Photographs were altered to create three series of physiques. One series portrays various amounts of increased muscularity

of the upper body, with less muscular lower bodies. This is the type of athletic physique that may be advantageous for a sport such as swimming. The second series contains enhanced lower body muscularity, with less upper body development. This pattern of muscularity represents the body physique emphasized in sports such as cycling, track, distance running, and soccer. The third series displays female physiques with more even muscularity, or a balance between upper and lower body muscularity. Sports emphasizing this physique, such as lacrosse, field hockey, and volleyball, would likely require both upper and lower body strength. As a result, the AIS contains 30 photographs ranging from slim without observable musculature to very androgenous and muscular.

Using the AIS, participants were asked to select the figure that they believed to be most representative of their current body physique. Furthermore, participants used the AIS to select the photograph that most closely resembled the physique they would most like to possess, believed to represent participants' ideal body physique. The raw difference between participants' perceived actual and ideal figures was calculated as an additional measure of body satisfaction or dissatisfaction (with a larger discrepancy representing more body dissatisfaction). Furthermore, the photographs on the AIS have been ranked from most to least athletic and separated into quintiles, based on evaluation by both athletes and non-athletes. This ranking system made it possible to ascertain whether the two groups idealize equally athletic figures. In other words, the quintile that a figure belongs to represents how athletic the figure is perceived to be, with lower quintiles representing less perceived athleticism. It also allowed a difference in actual and ideal body quintiles to be calculated and used as a measure of satisfaction or dissatisfaction with the level of their bodies' athletic appearance. In other words, the

difference between the quintiles of the perceived actual and ideal bodies on the AIS illustrates whether participants desire a more, less, or similarly athletic body as the body they believe themselves to currently possess.

Because the AIS is not a widely used measure, psychometric properties were unable to be ascertained.

### **Body Dissatisfaction**

The Body Dissatisfaction Scale (BDS) from the Eating Disorder Inventory (EDI-BDS; Garner et al., 1983) was used to measure body image dissatisfaction. The BDS measures dissatisfaction with specific body parts related to concerns women often have regarding their weight and physique (e.g., hips, thighs). The BDS is a nine item self-report measure composed of items that are rated according to a 6-point Likert scale ranging from “always” to “never,” based on how often the statement applies to an individual. An example of an item on the BDS is the statement “I think that my stomach is too big.” The most extreme answer in the pathological direction (“always” or “never” depending on the keyed direction) is scored as 3. The next two closest adjacent responses are scored as 2 and 1, respectively. All other responses are scored as 0. The EDI has been established as an appropriate and well developed measure, with good test-retest reliability and construct validity (Thompson & van den Berg, 2002; Tylka & Subich, 2004; Wear & Pratz, 1987). Krane et al. (2001) demonstrated that the EDI-BDS has high internal reliability for female athletes as well as for controls ( $\alpha = .89$  for athletes;  $\alpha = .89$  for the general female population).

Table 1

*Means for Participants' Demographic Information, by Athlete Status and Competition Level*

Athlete Status	Age, in years (SD)	Height, in inches (SD)	Weight, in pounds (SD)	BMI <sup>b</sup> , in kg/m <sup>2</sup> (SD)
Volleyball Players (n = 209) <sup>a</sup>	19.76 (1.08)	69.10 (3.00)	154.90 (21.55)	22.77 (2.54)
Division I (n = 33)	20.06 (1.20)	70.39 (2.55)	157.97 (19.68)	22.31 (2.31)
Division II (n = 83)	19.82 (1.08)	69.17 (3.07)	157.58 (20.23)	23.17 (2.41)
Division III (n = 92)	19.58 (1.02)	68.63 (2.93)	152.12 (22.72)	22.65 (2.69)
Non-Athletes (n = 117)	19.44 (1.16)	64.93 (2.92)	148.62 (32.33)	24.78 (5.02)
Total (N = 326)	19.65 (1.12)	67.60 (3.58)	152.65 (26.07)	23.49 (3.75)

<sup>a</sup> One participant failed to report her school or Division level and could not be classified in the analyses of competition level.

<sup>b</sup> BMI = Body Mass Index

Table 2

*Reported Ethnicity of Athletes, by Competition Level, and Non-athletes*

Group	American Indian or Alaskan Native	Asian/Asian American	Black/African American	Native Hawai'ian/ Pacific Islander	White/ Caucasian	Hispanic/ Latina	Bi-racial/ Multi-racial
Athletes - All	1	5	3	1	189	3	7
Division I	1	0	2	0	29	1	1
Division II	0	1	1	0	77	1	3
Division III	1	4	0	1	82	1	3
Non-Athletes	2	0	16	0	96	0	3
Total	3	5	19	1	285	3	10



### **Social Physique Anxiety**

The Social Physique Anxiety Scale (SPAS; Hart et al., 1989) was used to measure the concern or anxiety that occurs as a result of others' evaluation (or perceived evaluation) of one's body or physical appearance. The SPAS is a nine item self-report measure, with statements such as "It would make me uncomfortable to know others were evaluating my physique/figure." Participants were asked to rate each statement regarding how characteristic the statement is of themselves, from "not at all characteristic" to "extremely characteristic," using a 5-point Likert scale. The SPAS has demonstrated good construct validity, in that it is moderately correlated with measures tapping general concerns over others' evaluation, public self-consciousness, body cathexis, body esteem, and physical attractiveness. However, it is not so highly correlated as to suggest that SPA and related experiences (such as social anxiety) are identical phenomena (Hart et al., 1989). The SPAS has also been shown to be internally reliable, with  $\alpha = .911$  for the general population, and  $\alpha = .913$  for female athletes (Krane et al., 2001).

### **Body Appreciation**

To identify potential positive effects of athletic participation on feelings toward one's body, the Body Appreciation Scale (BAS) was administered (Avalos et al., 2005). The BAS measures four key facets of positive body image and body appreciation; favorable opinions of one's body (regardless of actual physical appearance), levels of body acceptance (in spite of issues such as weight, body shape, and imperfections), respect for one's body, (through attentiveness to the body's needs and engaging in healthy behaviors), and the degree to which an individual provides protections for the body by rejecting narrow, restrictive, or unrealistic body images as promoted by the

media. The BAS is a 13 item self-report measure comprised of positive statements about one's body, such as "Despite its flaws, I accept my body for what it is," and "I feel good about my body." Participants were asked to rate each statement on how true the statement is for them, from "never" to "always." Avalos et al. demonstrated that the BAS is uni-dimensional and has good construct validity. It is related to measures of body esteem, body surveillance, body shame, psychological well-being, appearance evaluation, body preoccupation, body dissatisfaction, and eating disorder symptomatology. However, it also predicts unique variance in psychological adjustment that is not accounted for by other existing measures of body image. The BAS has also shown adequate test-retest reliability over a three week period ( $r = .90$ ,  $p < .001$ ), and good internal consistency ( $\alpha = .94$ ).

### **Internalization**

The Sociocultural Attitudes Toward Appearance Questionnaire-3 (SATAQ-3; Thompson et al., 2004) was administered to examine potential sociocultural influences on body image. The SATAQ-3 is a 30-item self report measure with four subscales. The Information subscale measures the degree to which different media sources are considered key sources of information on attractiveness. For example, one item on the Information subscale states that "TV programs are an important source of information about fashion and 'being attractive.'"

The Pressures subscale examines how much individuals feel pressured by the media to pursue beauty ideals, with statements such as "I've felt pressure from TV and magazines to be thin." The degree of endorsement and acceptance of media messages promoting narrow beauty ideals and willingness to work toward these ideals is measured by the Internalization – General subscale. An example of

a statement on the Internalization – General subscale is “I compare my body to the bodies of people who are on TV.” Finally, because of the emergence of the new athletic ideal in the media, the SATAQ-3 (as opposed to earlier versions of the measure) added Internalization – Athlete subscale. The Internalization – Athlete subscale measures the level of endorsement and acceptance of the new athletic and toned body ideal presented in the media, through statements such as “I try to look like sports athletes.” Participants were asked to use a 5-point Likert scale to report their level of agreement with each of the statements, from “definitely disagree” to “definitely agree.”

Thompson et al. (2004) demonstrated that the subscales of the SATAQ-3 have good convergent validity with existing measures of body image and eating disorder symptomatology. Furthermore, the SATAQ-3, as well as each individual subscale, has been shown to have high internal reliability (total  $\alpha = .96$ ; Information subscale  $\alpha = .96$ ; Pressures subscale  $\alpha = .92$ ; Internalization – Athlete subscale  $\alpha = .95$ ; Internalization subscale  $\alpha = .96$ ).

### **Demographic Information**

Participants were asked to provide their age, gender, and whether or not they participate in inter-collegiate athletics. Individuals from the comparison group that were currently participating in other collegiate sports were excluded from the sample. To establish level of competition, participants were asked about the NCAA Division level as well as the name of the academic institution they attend. Athletes provided information on whether they were receiving an athletic scholarship, and how many years they had competed at the collegiate level. Ethnicity data were also obtained, but given the ethnic composition of volleyball at the collegiate level it was expected that the sample of

athletes would be largely Caucasian. This hypothesis was confirmed as both the athlete and non-athlete group were comprised primarily of individuals who identified as White/Caucasian. Finally, participants were asked to self-report their height and weight, so that their BMI could be calculated.

### **Procedure**

To recruit the group of collegiate volleyball players, an email was sent to conference representatives from each of the NCAA athletic conferences that include volleyball (30 Division I, 22 Division II, and 43 Division III conferences). This email explained the study and requested contact information for the volleyball coaches within their conference. This technique allowed the survey to be administered to athletes nationwide, rather than being limited to a particular geographic region. Responses and coaches' contact information was obtained for 9 Division I, 11 Division II, and 13 Division III conferences. Using this contact information, an email was sent to these coaches explaining the study and asking whether they would be willing to invite their athletes to participate. Coaches were also provided with a copy of all questions that would be asked of the athletes. Seventy nine coaches agreed to allow their athletes to participate. Coaches who agreed were sent an email with a description of the study and the link to the online survey, which they forwarded to the athletes on their volleyball team.

For athletes who chose to complete the online survey, there was a voluntary question that asked them to provide an email address for up to three female students at their academic institution that did not participate in intercollegiate athletics. Emails were then sent to the contact information obtained through this manner, stating how their

information was obtained, explaining the study, and inviting the individual to participate through the included link. This method of recruitment was used in an attempt to gather a matching group of non-athletes from the same institutions that composed the group of volleyball players. However, the majority of athletes completing the survey declined to provide contact information for non-athletes. Therefore, recruitment of the non-athlete group was supplemented by using a pool of female students currently enrolled in an introductory psychology course at a public university in western Pennsylvania, who were offered course credit for their participation.

Individuals from the athlete and non-athlete groups who chose to participate were provided with a link to the survey, which was administered using Qualtrics, an online survey system. When visiting the Qualtrics survey site, participants were directed to a webpage that explained the survey (e.g., purpose, risks, benefits, etc.) and explained that their decision to participate, as well as their answers to questions, would be kept confidential and would not impact their athletic or academic status. It was also explained that participants could choose to discontinue the survey at any time without negative repercussions. To begin the study, participants were asked to report their height and weight, so that their BMI could be calculated. Subsequently, the AIS was presented, and participants were instructed to select the figure that best resembles their current body, as well as the figure they would most like to possess. The remaining measures (SPAS, BAS, EDI-BDS, and SATAQ-3) were administered by Qualtrics in random order, in an attempt to reduce potential order effects. Following completion of these measures, participants were asked to provide answers to the previously described demographic information questions.

## CHAPTER IV

### RESULTS

#### **Demographic Information**

To examine potential demographic differences between the volleyball players and non-athletes, independent  $t$ -tests were conducted. The results revealed significant between groups differences in terms of participants' age,  $t(324) = 2.463, p = .014, d = .062$ , with the athletes being slightly older than non-athletes. While this was a significant difference, the effect size of this difference appeared very small. As expected, the volleyball players were also significantly taller than the non-athletes,  $t(324) = 12.144, p = .001, d = .165$ . However, the effect size was again found to be small. Based on the results of Levene's Test for Equality of Error Variances, possible between group differences in weight and BMI were examined without assuming equal variances between groups. These analyses revealed significant differences between volleyball players and non-athletes in terms of BMI,  $t(150.007) = -4.798, p = .001, d = .201$ . As a group, the volleyball players had lower BMIs than non-athletes. No significant differences were found between athletes and non-athletes on reported weight,  $t(174.831) = 1.880, p = .062, d = .284$ . A chi squared test was performed to examine potential between group differences in terms of ethnicity. Though demographic information was collected using 7 possible demographic categories, the low frequencies of many of these categories required many to be collapsed in order to avoid violating the assumptions of the chi squared test. Therefore, the categories of "White/Caucasian" and "Non-white" were used for the chi squared analysis of ethnicity, which was found to be significant,  $\chi^2(1, N = 325) = 4.068, p = .044$ . Although both groups were comprised primarily of individuals who

identified as "White/Caucasian," this percentage was higher among volleyball players (90.4%) than the non-athletes (82.1%).

Next, between-subjects one-way ANOVAs with four levels (Division I, Division II, Division III, non-athletes) were conducted to examine whether group differences on demographic information existed between levels of competition. Main effects were again found for age,  $F(3,321) = 3.563, p = .015$  height,  $F(3,321) = 53.341, p < .001$  and BMI,  $F(3,321) = 7.561, p < .001$ . No main effect was found for weight,  $F(3,321) = 2.525, p = .058$ . Another chi squared test was performed to examine the ethnic composition between the levels of composition, again with categories collapsed to "White/Caucasian" and "Non-white." Significant differences were not found between levels of competition in terms of ethnicity,  $\chi^2(3, N = 325) = 5.034, p = .169$ .

Tukey's HSD post-hoc testing was employed to investigate which levels of competition were producing the differences in age, height, and BMI. In terms of age, the only significant difference found to exist was between the Division I volleyball players and the non-athletes,  $p = .027$ , with Division I athletes being slightly older than non-athletes. As expected the non-athletes were significantly shorter than the volleyball players at all levels of competition ( $p < .001$  for all levels). Within the athletes, the Division I athletes were also found to be significantly taller than the Division III athletes,  $p < .001$ . The non-athletes had significantly heavier BMIs than athletes as a group, as well as at each individual level (Division I,  $p = .005$ , Division II,  $p = .016$ , and Division III,  $p < .001$ ). No differences were found between volleyball players of various Division levels in terms of BMI.

### **Descriptive Information**

The means and standard deviations of the 13 body image variables used in all subsequent analyses are displayed in Table 3. These statistics are broken down according to both athlete status and level of competition. Notable results and trends will be discussed throughout subsequent sections.



Table 3

*Body Image Variables' Means and Standard Deviations, by Athlete Status and Competition Level*

Scale	All Volleyball Players (SD)	Division I (SD)	Division II (SD)	Division III (SD)	Non-Athletes (SD)	Total (SD)
Body Dissatisfaction Scale	10.00 (2.25)	10.43 (2.89)	9.97 (2.02)	9.96 (2.13)	9.14 (2.32)	9.69 (2.31)
Social Physique Anxiety Scale	24.44 (5.05)	24.91 (5.46)	24.28 (4.90)	24.32 (5.05)	25.70 (5.22)	24.89 (5.14)
Body Appreciation Scale	49.57 (8.22)	47.47 (9.21)	49.37 (8.56)	50.69 (7.47)	47.54 (8.30)	48.84 (8.27)
SATAQ-3 <sup>1</sup>						
Internalization	27.62 (3.94)	29.33 (3.91)	27.27 (3.79)	27.32 (3.93)	27.52 (4.36)	27.59 (4.09)
Internalization of Athlete	17.67 (2.47)	17.73 (2.34)	17.50 (2.62)	17.88 (2.34)	15.56 (2.99)	16.91 (2.85)
Pressure	21.11 (5.40)	22.63 (5.62)	20.43 (5.23)	21.14 (5.48)	22.28 (5.08)	21.53 (5.31)
Information	26.69 (3.98)	27.77 (3.25)	26.32 (3.96)	26.56 (4.13)	26.08 (4.37)	26.47 (4.13)
Athletic Image Scale						
Actual Body	11.55 (7.01)	13.76 (7.70)	11.36 (6.57)	10.99 (7.08)	12.10 (8.16)	11.75 (7.44)
Actual Body Quintile	3.03 (1.18)	3.42 (1.25)	2.84 (1.15)	3.02 (1.13)	2.52 (1.17)	2.83 (1.20)
Ideal Body	9.10 (6.71)	9.67 (6.78)	9.28 (6.78)	8.70 (6.68)	7.21 (6.05)	2.93 (1.16)
Ideal Body Quintile	3.09 (1.19)	3.18 (1.24)	3.11 (1.19)	3.04 (1.16)	2.62 (1.07)	3.32 (6.71)
Actual/Ideal Body Discrepancy	2.45 (6.46)	4.15 (7.22)	2.18 (6.87)	2.18 (5.70)	4.89 (6.91)	3.32 (6.71)
Actual/Ideal Body Athleticism Discrepancy	-.06 (1.42)	-.15 (1.35)	-.16 (1.33)	-.06 (1.45)	-.10 (1.63)	-.10 (1.45)

<sup>1</sup> SATAQ-3 = Sociocultural Attitudes Toward Appearance Questionnaire

### **Partial Correlations**

In order to better illustrate the relationships between the 13 body image variables, partial correlations between all dependent measures were calculated, controlling for the effect of BMI. Controlling for BMI was considered important due to its appreciable impact on various aspects of body image, and because it will be considered as a covariate in later analyses. These correlations are reported in Table 4, which displays the correlations and indications of significance for athletes, non-athletes, and the total sample. As this table shows, many correlations were found to be significant. This result is expected, giving the relatively large sample size and the fact that variables are all in some way related to the construct of body image. As Table 3 illustrates, measures of body appreciation and social physique anxiety demonstrated a moderately high negative correlation. This result implies that individuals with more appreciation for their bodies likely experience less anxiety about their physiques being evaluated by others. Internalization of body image messages (SATAQ-3 Internalization subscale) and the pressure that individuals feel to achieve an ideal body (SATAQ-3 Pressure subscale) are moderately strongly (and positively) correlated. Another notable finding was the strong positive correlations between both volleyball players' and non-athletes' perceived muscularity/athleticism (Actual Quintile) and the discrepancy between their current and ideal levels of muscularity/athleticism (Actual/Ideal Quintile Discrepancy). This implies that the more muscular an individual perceived their current physique to be, the more discrepancy they felt between their current and ideal levels of muscularity. The opposite result was found for the connection between the muscularity/athleticism of athletes' and non-athletes' ideal figures (Ideal Quintile) and the discrepancy between the level of

muscularity/athleticism of their current and ideal figures (Actual/Ideal Athleticism Discrepancy). Therefore, individuals who idealized a more muscular figure displayed less discrepancy between their current and ideal levels of muscularity.

Table 4

*Partial Correlations (controlling for BMI) between Body Image Measures and Subscales, by Athlete Status*

Measure	BD <sup>a</sup>	SPA <sup>b</sup>	BA <sup>c</sup>	Internalization	Intern Ath <sup>d</sup>	Pressure
<b>BD<sup>a</sup></b>						
Volleyball	1	-.168*	.289**	-.051	.003	-.036
Non-Athlete	1	-.067	.349**	.032	.030	-.063
Total	1	-.146**	.326**	-.026	.063	-.073
<b>SPA<sup>b</sup></b>						
Volleyball		1	-.605**	.392**	.237**	.445**
Non-Athlete		1	-.549**	.396**	.416**	.508**
Total		1	-.594**	.399**	.281**	.483**
<b>BA<sup>c</sup></b>						
Volleyball			1	-.308**	.193**	-.414**
Non-Athlete			1	-.434**	-.344**	-.419**
Total			1	-.364**	-.227**	-.437**
<b>Internalization</b>						
Volleyball				1	.259**	.566**
Non-Athlete				1	.389**	.629**
Total				1	.298**	.590**
<b>Intern Ath<sup>d</sup></b>						
Volleyball					1	.302**
Non-Athlete					1	.320**
Total					1	.277**
<b>Pressure</b>						
Volleyball						1
Non-Athlete						1
Total						1

<sup>a</sup> BD = Body Dissatisfaction

<sup>c</sup> BA = Body Appreciation

\*  $p < .05$ .

<sup>b</sup> SPA = Social Physique Anxiety

<sup>d</sup> Intern Ath = Internalization of Athlete Ideal

\*\*  $p < .01$ .

Table 4

*Partial Correlations (controlling for BMI) between Body Image Measures and Subscales, by Athlete Status (continued)*

Measure	Information	Actual Body	Actual Quin <sup>e</sup>	Ideal Body	Ideal Quin <sup>f</sup>	A/I Disc <sup>g</sup>	A/I Quin Disc <sup>h</sup>
BD <sup>a</sup>							
Volleyball	.049	-.002	.101	-.022	-.013	.021	.096
Non-Athlete	.079	-.094	-.036	-.021	.066	-.080	-.074
Total	.077	-.027	.063	.014	.070	-.046	-.086
SPA <sup>b</sup>							
Volleyball	.200**	.108	-.083	-.040	-.095	.147*	.009
Non-Athlete	.015	.174	.008	-.053	-.091	.223*	.069
Total	.113*	.140*	-.057	-.049	-.068	.178**	.071
BA <sup>c</sup>							
Volleyball	-.124	-.133	.020	.048	.103	-.179**	-.068
Non-Athlete	-.084	-.098	-.011	.165	.083	-.239**	-.066
Total	-.091	-.127*	.010	.090	.088	-.213**	.024
Internalization							
Volleyball	.468**	.024	.010	-.116	-.122	.143*	.110
Non-Athlete	.293**	-.052	.029	-.179	-.127	.096	.110
Total	.389**	.002	.000	-.130*	-.124*	.131*	-.080
Intern Ath							
Volleyball	.148*	.047	.071	.003	-.022	.043	.078
Non-Athlete	.185*	.214*	.236*	-.102	-.037	.305**	.207*
Total	.170**	.162**	.192**	.051	.094	.104	.010
Pressure							
Volleyball	.384**	.117	-.041	-.060	-.127	.176*	.071
Non-Athlete	.203*	.026	.028	-.058	-.019	.075	.035
Total	.290**	.095	-.004	-.062	-.069	.111*	-.093

<sup>a</sup> BD = Body Dissatisfaction

<sup>b</sup> SPA = Social Physique Anxiety

<sup>c</sup> BA = Body Appreciation

<sup>d</sup> Intern Ath = Internalization of Athlete Ideal

<sup>e</sup> Actual Quin = Athleticism of Actual Body

<sup>f</sup> Ideal Quin = Athleticism of Ideal Body

<sup>g</sup> A/I Disc = Actual/Ideal Body Discrepancy

<sup>h</sup> A/I Quin Disc = Actual/Ideal Athleticism Discrepancy

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

Table 4

*Partial Correlations (controlling for BMI) between Body Image Measures and Subscales, by Athlete Status (continued)*

Measure	Information	Actual Body	Actual Quin <sup>e</sup>	Ideal Body	Ideal Quin <sup>f</sup>	A/I Disc <sup>g</sup>	A/I Quin Disc <sup>h</sup>
Information							
Volleyball	1	.007	.003	-.073	-.134	.082	.113
Non-Athlete	1	.112	.032	-.092	-.070	.192*	.073
Total	1	.050	-.004	-.064	-.089	.111*	-.093
Actual Body							
Volleyball		1	.392**	.507**	.402**	.450**	-.003
Non-Athlete		1	.345**	.441**	.237*	.661**	.101
Total		1	.468**	.493**	.420**	.492**	-.029
Actual Quin <sup>e</sup>							
Volleyball			1	.251**	.275**	.122	.610**
Non-Athlete			1	-.024	.067	.375**	.722**
Total			1	.261**	.290**	.224**	.038
Ideal Body							
Volleyball				1	.774**	-.541**	-.428**
Non-Athlete				1	.679**	-.383**	-.489**
Total				1	.824**	-.491**	-.041
Ideal Quin <sup>f</sup>							
Volleyball					1	-.410**	-.594**
Non-Athlete					1	-.324**	-.641**
Total					1	-.395**	-.048
A/I Disc <sup>g</sup>							
Volleyball						1	.440**
Non-Athlete						1	.513**
Total						1	.026
A/I Quin Disc <sup>h</sup>							
Volleyball							1
Non-Athlete							1
Total							1

<sup>e</sup> Actual Quin = Athleticism of Actual Body

<sup>g</sup> A/I Disc = Actual/Ideal Body Discrepancy

\*  $p < .05$ .

<sup>f</sup> Ideal Quin = Athleticism of Ideal Body

<sup>h</sup> A/I Quin Disc = Actual/Ideal Athleticism Discrepancy

\*\*  $p < .01$ .

### Initial Analyses

One of the initial hypotheses posited that individuals with greater levels of internalization would exhibit more body dissatisfaction than those with lower internalization, regardless of athlete status. A bivariate regression was conducted with internalization as the predictor variable and body dissatisfaction as the dependent variable. Using the enter method, a non-significant regression model emerged,  $F(1,324) = .193, p = .661$ . In fact, degree of internalization explained only .2% of the total variance in body dissatisfaction. The same analysis was run for the volleyball players and non-athletes as separate groups, and again no significant effect was noted ( $F(1,207) = .766, p = .383$ ;  $F(1,115) = .077, p = .781$ , respectively).

An initial multivariate analysis of variance (MANOVA) was conducted to determine if differences existed between volleyball players and non-athletes in terms of the various body image facets that were explored. Because the groups differed in terms of BMI, which is known to have an effect on many aspects of body image, BMI was included in the MANOVA as a covariate. Thirteen dependent variables were used: body dissatisfaction (BDS), social physique anxiety (SPAS), body appreciation (BAS), internalization of sociocultural influences (SATAQ-3 Internalization), internalization of the athlete ideal (SATAQ-3 Athlete), perceived sociocultural pressure (SATAQ-3 Pressure), knowledge of sociocultural messages regarding body image (SATAQ-3 Information), perceived actual body (AIS-Actual Body), athleticism of perceived actual body (AIS- Actual Quintile), ideal body (AIS-Ideal), athleticism of ideal body (AIS-Ideal Quintile), discrepancy between perceived actual and ideal body (AIS-Raw Difference), and discrepancy between athleticism of perceived actual and ideal body (AIS-Quintile

Difference). Athlete status was found to have a significant effect on the combined dependent variable of body image,  $F(13,310) = 6.86, p < .001$ ; Wilks' Lambda = .78; partial  $\eta^2 = .223$ . According to this analysis, 22.3% of the variance in the construct of body image is accounted for by athlete status, after controlling for the effect of BMI.

Analysis of each individual dependent variable showed that the two groups differed in terms of body dissatisfaction,  $F(1,322) = 10.09, p = .002$ , partial  $\eta^2 = .030$  internalization of the athlete ideal,  $F(1,322) = 42.45, p < .001$ , partial  $\eta^2 = .116$  perceived actual body,  $F(1,322) = 4.10, p = .044$ , partial  $\eta^2 = .013$  athleticism of perceived actual body,  $F(1,322) = 7.52, p = .006$ , partial  $\eta^2 = .023$  ideal body,  $F(1,322) = 16.68, p < .001$ , partial  $\eta^2 = .049$  and athleticism of ideal body,  $F(1,322) = 24.64, p < .001$ , partial  $\eta^2 = .071$ . According to these results (and as illustrated in Table 4), volleyball players as a group displayed significantly more body dissatisfaction and internalization of the athlete ideal. They perceived their current bodies as slimmer and more athletic than non-athletes, and idealized a larger and more athletic body. Based on the partial eta squared statistics, the most notable effect of athlete status was found for internalization of the athlete ideal, in which 11.6% of the variance is accounted for by group membership. No significant contribution was found for social physique anxiety,  $F(1,322) = 1.30, p = .225$ , partial  $\eta^2 = .004$  body appreciation,  $F(1,322) = 1.81, p = .179$ , partial  $\eta^2 = .006$  internalization of sociocultural influences,  $F(1,322) = .026, p = .873$ , partial  $\eta^2 < .001$  perceived sociocultural pressure,  $F(1,322) = 2.00, p = .158$ , partial  $\eta^2 = .006$  knowledge of sociocultural messages regarding body image,  $F(1,322) = 1.79, p = .182$ , partial  $\eta^2 = .006$  discrepancy between perceived actual and ideal body,  $F(1,322) = 3.62, p = .058$ , partial

$\eta^2 = .011$  or discrepancy between athleticism of perceived actual and ideal body,  $F(1,322) = .086, p = .769$ , partial  $\eta^2 < .001$ .

Another MANOVA was conducted to examine whether differences were present between levels of competition. Four levels of competition were included (Division I, Division II, Division III, and non-athletes, from most to least competitive), and BMI was again included as a covariate. The same 13 dependent measures of body image were used. According to this MANOVA, there was a significant effect of competition level on the combined construct of body image,  $F(39,909.84) = 2.81, p < .001$ ; Wilks' Lambda = .714; partial  $\eta^2 = .106$ . Therefore, when groups are divided in this manner, 10.6% of the total variance in body image (as defined by these 13 factors) can be accounted for by level of competition. Analysis of each individual dependent variable discovered the competition level groups differed in terms of body dissatisfaction,  $F(3,319) = 3.82, p = .010$ , partial  $\eta^2 = .035$  internalization of the athlete ideal,  $F(3,319) = 14.19, p < .001$ , partial  $\eta^2 = .118$  perceived actual body,  $F(3,319) = 3.84, p = .010$ , partial  $\eta^2 = .035$  athleticism of perceived actual body,  $F(3,319) = 4.58, p = .004$ , partial  $\eta^2 = .041$  ideal body,  $F(3,319) = 5.52, p = .001$ , partial  $\eta^2 = .049$  and athleticism of ideal body,  $F(3,319) = 7.68, p < .001$ , partial  $\eta^2 = .067$ . According to Table 3, body dissatisfaction and level of athleticism of ideal body increased as level of competition increased (e.g., Division I athletes were highest on body dissatisfaction and idealized the most athletic bodies, followed by Division II, Division III, and lastly non-athletes). Relationships were not linear for the other contributing variables, but can be examined through Table 3 as well as post-hoc testing.



Tukey's HSD was conducted to determine which groups were producing significant differences in these variables. Division I volleyball players and non-athletes were the only groups found to be different in terms of body dissatisfaction, with the athletes at the highest level of competition displaying greater amounts of body dissatisfaction,  $p = .041$ . Concerning internalization of the athlete ideal, non-athletes differed from athletes at each level of competition,  $p < .02$  for all groups. However, no differences were found between volleyball players at various levels of competition. It is also worth noting that membership in a particular level of competition accounted for 11.8% of the variance between groups' internalization of the athlete ideal. This represents the largest effect of competition level among the variables included in this study. Division I volleyball players selected significantly heavier perceived actual bodies than non-athletes,  $p = .006$ , with no other groups displaying differences. These two groups were also the only ones to select significantly different bodies to represent the athleticism of their actual figure,  $p = .020$ . Therefore, Division I athletes chose more athletic body types to represent their current physiques, as compared to the physiques selected by non-athletes. In terms of ideal body, non-athletes were found to select significantly thinner ideal bodies than athletes at each level of competition,  $p < .028$  for all levels. Finally, non-athletes' ideal bodies were also significantly less athletic than volleyball players at all levels of competition,  $p = .007$  for all levels.

No main effects were found between levels of competition for social physique anxiety,  $F(3,319) = .69$ ,  $p = .561$ , partial  $\eta^2 = .006$  body appreciation,  $F(3,319) = 2.04$ ,  $p = .109$ , partial  $\eta^2 = .019$  internalization of sociocultural influences,  $F(3,319) = 2.20$ ,  $p = .088$ , partial  $\eta^2 = .020$  perceived sociocultural pressure,  $F(3,319) = 2.19$ ,  $p = .089$ , partial

$\eta^2 = .020$  knowledge of sociocultural messages regarding body image,  $F(3,319) = 1.75$ ,  $p = .157$ , partial  $\eta^2 = .016$  discrepancy between perceived actual and ideal body,  $F(1,322) = 2.20$ ,  $p = .088$ , partial  $\eta^2 = .020$  and discrepancy between athleticism of perceived actual and ideal body,  $F(1,322) = .110$ ,  $p = .954$ , partial  $\eta^2 = .001$ .

### **Discriminant Analysis**

After the MANOVAs determined that differences existed between the groups in terms of body image, a discriminant analysis was conducted to examine which variables were most important in discriminating between members of various levels of competition. Discriminant analysis is a statistical procedure that can be used to predict category membership based on a number of predictor variables, much like logistic regression. Discriminant analysis is often used when the outcome/dependent variable has more than two categories, provided the predictor/independent variables are normally distributed and equality of variance exists between the groups. These criteria were all fulfilled given the current research design and resulting data, therefore discriminant analysis was determined to be an appropriate statistical technique.

Because all of the current study's previous analyses have factored out the effect of BMI on measures of body image, this effect needed to be accounted for within the discriminant analysis as well. Therefore, a series of linear regressions were conducted using BMI as the independent variable and each of the 13 measures of body image in turn as the dependent variable. Following each linear regression, the standardized residual of each dependent measure was saved as a new variable that factored out the contribution of BMI. These new variables were then used as input variables in the subsequent

discriminant analysis. This procedure allowed a discriminant analysis to be conducted that controlled for the effect of BMI on body image.

The discriminant analysis was then performed with competition level as the grouping variable with 4 levels (Division I, Division II, Division III, and non-athletes) and the standardized residuals of the 13 measures of body image obtained during the linear regression as the predictor variables. A total of 326 cases were analyzed. Univariate ANOVAs calculated during the course of the discriminant analysis revealed that level of competition had a significant effect on body dissatisfaction,  $F(3,320) = 3.62$ ,  $p = .013$  internalization of the athlete ideal,  $F(3,320) = 13.34$   $p < .001$  perceived actual body,  $F(3,320) = 3.68$   $p = .012$  athleticism of perceived actual body,  $F(3,320) = 4.39$   $p = .005$  ideal body,  $F(3,320) = 5.165$   $p = .002$  and athleticism of ideal body,  $F(3,320) = 7.14$   $p < .001$ . This information confirmed the results obtained during the MANOVA conducted previously.

Discriminant analysis calculates a certain number of discriminant functions, either one less than the number of groups or the number of predictor variables, whichever is smaller. Because there were 4 levels of competition and 13 predictor variables, 3 discriminant functions were calculated. Discriminant functions are linear combinations of the predictor variables that maximally contribute to group separation. The first discriminant function is formulated to maximally distinguish between the groups. The second and third are orthogonal to the first and attempt to maximally explain group separation based on the remaining variance not explained by previous discriminant functions. The combined value of discriminant functions 1 through 3 was significant for

the four competition groups,  $\chi^2(39, N = 326) = 100.95, p < .001$ . Functions 2 through 3, as well as function 3 alone failed to reach significance.

Each discriminant function's eigenvalue was examined to determine how well each function discriminated between the levels of competition. Function 1 (eigenvalue = .262) accounted for 74.1% of the variance between groups, with Functions 2 (eigenvalue = .070) and 3 (eigenvalue = .021) accounting for the remaining 19.9% and 5.9% of the variance, respectively.

The structure matrix coefficients of the discriminant analysis provide the correlations between the predictor variables and the calculated discriminant functions. These structure matrix coefficients were then be used to assign meaningful labels to the discriminant functions, which is a process similar to interpreting factors in factor analysis. Therefore, using the structure matrix coefficients, the contributions that each variable made to the discriminant functions were explored. In accordance with generally accepted practice for analyzing discriminant functions, only those factors with loadings above .30 were deemed to be meaningful enough to interpret. In order of relative size, Function 1 was most influenced by internalization of the athlete ideal (.688), athleticism of perceived actual body (.500), ideal body size (.419), and body dissatisfaction (.344). Thus, it appears that Function 1 calculates the importance an individual places on an athletic physique as well as her level of body dissatisfaction. Because Functions 2 and 3 were not found to be significant, their factors were not interpreted.

Another important calculation involved in discriminant analysis involves exploration of the group centroids, which are the mean values of the discriminant functions for each of the groups. Group centroids for each discriminant function were

examined in an attempt to ascertain which groups were being identified by each function. Values for these centroids are displayed in Table 5. Function 1 (importance of athletic physique and body dissatisfaction) appears to discriminate between non-athletes and athletes. Though not significant, Function 2 appears to attempt to separate athletes at the highest level of competition (Division I) from all other athletes, while Function 3 attempts (though not very successfully) to distinguish between Division II and Division III athletes.

Table 5

*Group Centroids, by Competition Level*

Competition Level	Function 1	Function 2	Function 3
Division I	.412	.746	.057
Division II	.357	-.090	-.218
Division III	.400	-.197	.171
Non-Athletes	-.671	.005	.006

Finally, the classification table resulting from these discriminant functions can be seen in Table 6. If the cases were to be classified by chance alone, it was predicted that 25% would be classified correctly. However, using the discriminant function model, this percentage of correctly classified cases improves to 46.0%. This number may be slightly misleading however, as the model appears to identify Division I volleyball players (60.6%) and non-athletes (60.2%) rather well. Division II athletes, however, were classified at levels barely exceeding chance (26.5%), the possible reasons for which will be discussed later. Overall, it appears that the discriminant functions were moderately successful in using aspects of body image to classify athletes and non-athletes according to level of competition.

Table 6

*Competition Level Classification Table, by Count (and Percentage)*

Actual Group Membership	Predicted Group Membership			
	Division I	Division II	Division III	Non-Athletes
Division I	20 (60.6%)†	3 (9.1%)	5 (15.2%)	5 (15.2%)
Division II	16 (19.3%)	22 (26.5%)†	27 (32.5%)	18 (21.7%)
Division III	20 (22.2%)	19 (21.1%)	36 (40.0%)†	15 (16.7%)
Non-Athletes	16 (13.6%)	14 (11.9%)	17 (14.4%)	71 (60.2%)†

† Correctly classified cases

## CHAPTER V

### DISCUSSION

As the results indicate, participation in intercollegiate athletics (volleyball, specifically) has a significant impact on one's body image. In fact, nearly a quarter of all the variance in the facets of body image examined was attributable to athletic participation. This supports the notion that further understanding the impact of athletics on women's body image is an important and necessary endeavor.

The current study's first hypothesis predicted that collegiate volleyball players would perceive their bodies as more muscular than non-athletes. This hypothesis was supported, as volleyball players consistently chose significantly more muscular and athletic figures to represent their actual bodies, even after controlling for the effect of BMI. When investigated more closely, this effect is largely due to the fact that volleyball players at the highest level of competition (Division I) rated their bodies as more muscular and athletic than non-athletes.

There are several potential explanations for this finding. No objective anthropometric measures of participants' bodies (e.g., chest/waist/hip measurements, body fat/composition, etc.) were taken during this study. Therefore, it is possible that Division I volleyball players only perceived their bodies to be more muscular and athletic than non-athletes. However, Lenart et al. (1995) found that women were generally accurate in self-reporting their body sizes and physiques, provided they were assured their responses were confidential. Therefore, it is unlikely that this is the explanation for this finding. Instead, it appears that Division I athletes have actually developed more muscular bodies than non-athletes. This appears to be a more likely assumption,

especially considering the rigorous strength and conditioning schedules associated with this high level of competition.

Notably, there was no difference between athletes at lower competition levels and non-athletes regarding perceived muscularity and athleticism. Interestingly, athletes at these levels often participate in strength and conditioning regimes, along with the regular physical activity involved with athletic practice. This would likely result in a more muscular and athletic body than non-athletes; however, this was either not the case, or the athletes at the Division II and Division III levels did not perceive themselves this way. This is particularly surprising for the Division II volleyball players, who are permitted by the NCAA to engage in nearly the same amount of official off-season (winter and spring) conditioning and training as Division I athletes. Therefore, one might expect the Division II athletes to perceive their bodies as similar to those at the Division I level and more muscular and athletic than non-athletes. However, the results of this study do not support that conclusion, as there was no difference between the Division II volleyball players and the non-athletes in terms of their bodies' perceived athleticism. Division III athletes are much more limited in the amount of hours they are permitted to spend in official off-season training, which may explain their lack of difference from non-athletes on this body dimension.

Based on the literature reviewed, the second hypothesis proposed that volleyball players and non-athletes would choose similarly slim but muscular figures as indicative of their ideal female body. However, the results of this study illustrated that volleyball players and non-athletes did not select equivalently muscular and athletic figures as representative of ideal. The non-athletes chose "physiques of average size without



defined muscularity” (Lenart et al., 1995, p. 839). The volleyball players, however, selected ideal figures that would likely require regular exercise and upper-body weight lifting, and that “showed more defined physiques” (Lenart, p. 839). Therefore, the athletes chose an ideal female body that was more muscular and athletic than the body selected by non-athletes. This result remained consistent across all levels of competition, implying that volleyball players at each competition level idealized a more muscular and athletic female body than the non-athletes.

As mentioned previously, this result is not consistent with the findings of Lenart et al. (1995), who discovered that athletes and non-athletes selected similarly athletic figures as ideal. In that study, this equivalence was attributed to the popularization of athletic body types within the media and society as ideal and desirable. However, the current study illustrates that women participating in intercollegiate volleyball are more accepting of the notion of muscular and athletic female body types as ideal. It is important to note that the athletes used in Lenart et al.’s (1995) study were all Division III athletes. The Division III athletes in the current study idealized more athletic bodies than non-athletes, though this body was slightly less athletic than Division I and II athletes (but not to a significant level). In fact, athletes as a group as well as at each level of competition idealize bodies that are more muscular and well defined than the ideal bodies of non-athletes. While not reaching the level of statistical significance, there was a linear trend between the competition levels in terms of athleticism of ideal bodies. The most muscular and athletic ideal body was selected by the Division I athletes, followed by Division II, Division III, then non-athletes. Therefore, it is possible that as women become involved with more competitive levels of athletic participation, they grow to

idealize a more athletic body, perhaps because the women they encounter most often possess more athletic bodies as well. Further research exploring this question would be necessary, however, before such a conclusion could be verified.

The related third hypothesis predicted that volleyball players would display a greater degree of internalization of the athlete ideal. This hypothesis was supported, as volleyball players as a group as well as at each individual level of competition were found to display greater internalization of the athlete ideal than the non-athletes. In fact, this was found to be the most significant difference between the athletes and non-athletes, with 11.6% of the variance in internalization of the athletic ideal being attributed to whether or not an individual participated in intercollegiate volleyball. Furthermore, this factor remains important in distinguishing between levels of competition, as which level of competition an individual competes at is responsible for 11.8% of the variance in internalization of the athletic ideal. This result has an intuitive component to it, as women participating in high levels of athletics are likely very attuned to sociocultural messages promoting athleticism. However, it is somewhat surprising to see that women in the general population are less interested in the athletic standard of beauty, given the previous finding that suggests that this ideal is becoming the sociocultural norm (Thompson et al., 2004). An equal amount of internalization of the athlete ideal was found among volleyball players at all levels of competition. Therefore, it appears that the athletic ideal is equally important to collegiate volleyball players and is not dependent upon the level of competition one is able to attain. This may be due to the fact that athletes are exposed to many of the same sociocultural messages from coaches, teammates, trainers, media, etc., all of which can promote an athletic ideal. The

competitive level of an athlete does not appear to influence how much that message is valued and internalized.

Based on the literature, it was hypothesized that volleyball players would exhibit greater levels of body dissatisfaction than non-athletes, and that this effect would increase in accordance with the level of competition. The results of this study are relatively consistent with this hypothesis. Volleyball players as a whole displayed greater levels of body dissatisfaction than non-athletes, even after controlling for the effect of BMI (though athletes reported lower BMIs, which has historically been linked to less body dissatisfaction). There is also evidence to suggest a positive relationship between levels of competition and body dissatisfaction. Division I athletes experienced significantly more body dissatisfaction than non-athletes, which reinforces the notion that body dissatisfaction becomes especially concerning among elite performers. This trend was not seen among lower levels of competition (Divisions II and III), as these individuals were not found to have greater body dissatisfaction than non-athletes. This provides important confirmation of the hypothesis that even athletes in non-lean sports experience elevated levels of body dissatisfaction, particularly at highly competitive levels.

One possible explanation for this finding is that volleyball players, particularly those at elite levels, may be required to spend more time focusing on their bodies and attempting to alter or “perfect” them. Collegiate athletes spend significant amounts of time and energy practicing, weight training, and conditioning. Some teams require frequent weight checks and there are sometimes consequences (e.g., extra conditioning sessions, reduced playing time) for falling outside of a desired weight range. There is also the added pressure to keep one’s body in peak performance shape in order to avoid

the loss of scholarship money or playing time. This could potentially lead athletes to become more aware and hypercritical of perceived physical flaws. Furthermore, as Hausenblas and Carron (1999) noted, athletes performing at elite collegiate levels may also have personality characteristics such as perfectionism and attention to detail that may lead minor physical concerns to be viewed as major problems. Additional research is required, however, in order to investigate the potential underlying reasons for the elevation in body dissatisfaction among athletes, particularly more elite athletes.

The fifth hypothesis predicted that individuals with high levels of internalization would have greater body dissatisfaction than those with less internalization, regardless of athlete status. However, the results of the current study showed virtually no relationship between internalization and body dissatisfaction. One contributing factor could be the fact that all groups responded relatively similarly in terms of amount of internalization of sociocultural messages. In other words, volleyball players and non-athletes are exposed to many of the same messages about the body, and seem to internalize these to the same extent as non-athletes (although athletes do internalize more of the athletic ideal). Other reasons for this lack of relationship remain unclear and would likely benefit from further study.

The sixth hypothesis suggested that volleyball players would report lower levels of social physique anxiety as compared to non-athletes. However, this was not supported by the current study, as athletes (combined as well as at each individual level of competition) reported nearly identical levels of social physique anxiety as non-athletes. Volleyball players are frequently required to display their bodies in uniforms that are form-fitting and revealing of body shape. Yet, this does not appear to make them feel

any more anxious or nervous than a typical female college student about others viewing and evaluating their bodies. Nor does the frequency with which their bodies are on display appear to desensitize them to this experience. Rather, athletic status seems to have little to no effect on this aspect of body image.

The final hypothesis predicted that athletes would experience greater body appreciation, due to the numerous opportunities athletics affords to experience one's body as strong, healthy, and capable. However, the current study did not uphold that hypothesis, as no differences were found between athletes (as a group or when broken down by competition level) and non-athletes. This result contradicts some of the popular media campaigns (e.g., Nike) mentioned earlier, which propose that involving girls and women in athletics will encourage a more positive body image. While it is not possible from this study to say whether body appreciation improves in younger female athletes, it does not appear that this is true among collegiate volleyball players. Furthermore, a non-significant trend occurred in which body appreciation declined as the level of competition increased. Perhaps athletes at these elite levels place more demands and expectations on their bodies, which lead to very narrow and often unattainable standards. Combining this result with the fact that volleyball players experienced significantly more body dissatisfaction may suggest that collegiate athletes are more likely to attend to the perceived shortcomings of their bodies, while discounting their relative strengths and abilities.

The current study also contains some interesting findings that were not part of the proposed hypotheses, often due to a lack of substantive research on which to base hypotheses. As discussed earlier, volleyball players described their current and ideal

bodies as more muscular and athletic than non-athletes. This is an interesting result because few studies have incorporated muscularity and athleticism into their analyses. However, differences also emerged between the groups' current and ideal body sizes (rather than current and ideal body muscularity), which is the more frequently explored dimension. The volleyball players as a group perceived their bodies as slimmer than non-athletes. Based on the descriptive information reported, the athletes were taller than the non-athletes and had lower BMIs. Furthermore, the body composition of these groups likely differs as well. The athletes reported themselves as more muscular than the non-athletes, which is unsurprising given the rigorous training schedules often involved with intercollegiate athletics. Combining this information, a picture emerges in which the volleyball players view their bodies as slimmer and more muscular and athletic than non-athletes. This makes the athletes' higher prevalence of body dissatisfaction even more surprising, given the fact that being slender, muscular, and athletic are generally considered socioculturally desirable (especially among athletes). It also suggests that the experience of participating in intercollegiate athletics alters one's body image in a way that is not simply congruent with body modification alone, as athletics often lowers body fat and enhances muscularity, which are effects that usually make women in the general population feel more satisfied with their bodies.

Further exploring this result, it is interesting to note that this relationship is not as simple as it initially appears. While athletes as a group reported slimmer current bodies than non-athletes, this does not take into account the effect of competition level. Division I athletes actually report their current bodies as significantly larger than the non-athletes, and these groups are the only two whose differences on perceived body size can be

considered significant. Again, it remains unclear whether individuals participating at the highest level of competition actually possess larger body shapes, or whether they merely perceive their bodies as larger. However, given the accuracy of anonymous self-report, it is more likely that Division I volleyball players have larger figures. Interestingly, these groups (Division I athletes vs. non-athletes) were also the only two to display body dissatisfaction differences. Namely, Division I athletes are more dissatisfied with their bodies, which they perceive as larger than non-athletes. This result is more congruent with sociocultural standards, in which individuals who perceive their bodies as aligning with socially desirable physical traits (i.e., thinness) experience less body dissatisfaction.

In terms of ideal body, athletes at each level of competition idealized a larger body shape than non-athletes, regardless of its muscularity. Perhaps athletes' frequent exposure to messages promoting strength and physical competence helps to augment the sociocultural messages promoting thinness as the penultimate physical goal. Interestingly (though not statistically significant), the bodies selected as ideal by the groups became progressively thinner as the level of competition declined. In other words, Division I athletes idealized the heaviest body, followed by Division II, Division III, then non-athletes. Therefore, it is possible that those who are able to compete at higher levels of competition are better able to appreciate the strength (and subsequent larger body size) that may be necessary to be a highly competitive athlete, and to recognize that a larger frame is often necessary to achieve this level of strength.

It is also important to note areas in which the groups did not differ, as was the case for most of the factors investigating the sociocultural influences that influence body image (i.e., the SATAQ-3 subscales). Apart from the level of internalization of the

athlete ideal, there were no differences found between the groups on any other sociocultural influences, including internalization of sociocultural influences, perceived sociocultural pressure, and knowledge and awareness of sociocultural messages. It appears that these factors are products of pervasive sociocultural factors, such as the media, that equally affect women regardless of athlete status. Athletes and non-athletes are exposed to many of the same body image messages through the media and other cultural influences on a daily basis. Therefore, it is understandable that the groups would be similarly impacted by these factors.

Two final ways in which the volleyball players and non-athletes failed to differ was in their discrepancies between their perceived actual and ideal body sizes and level of muscularity. This discrepancy was calculated in order to investigate whether this method could be incorporated as another potential indicator of body dissatisfaction, as suggested by the AIS creators (Lenart et al., 1995). However, unlike the more empirically validated measure of body dissatisfaction (EDI-BD subscale), the groups were not found to differ when using this potential indicator of body dissatisfaction. Discrepancy scores generally make assumptions regarding equal intervals between units, which may partial account for the lack of difference between groups on representations of actual and ideal body, while differences exist on more validated measures of body dissatisfaction. Therefore, the research does not support the use of the discrepancy between selected actual and ideal figures on the AIS as a valid indicator of body dissatisfaction.

As mentioned previously, aspects of body image can be used to discriminate reasonably well between volleyball players at various levels of competition and non-



athletes. Volleyball players can be most accurately identified by the high importance they place on athletic physiques as well their greater body dissatisfaction. Furthermore, Division I athletes can be differentiated from the rest of the athletes and non-athletes based upon their perception of their bodies as larger and more athletic, combined with their low body appreciation and their reported impact of sociocultural factors. These results further support the claim that the level of competition a volleyball player competes at has a significant influence on her resulting body image.

Interestingly, it appears to be difficult to identify Division II volleyball players amidst players at various other levels of competition and non-athletes. In looking at Table 4, it can be noted that body image does not often follow linear patterns between Divisions I, II, III, and non-athletes. It appears possible that each of the NCAA Divisions represents distinct groups with their own body image features. For example, Division II athletes exhibit less knowledge of sociocultural messages regarding the body and see their actual bodies as less athletic than their Divisions I and III counterparts (both of which are traits of non-athletes). The idea that Division II athletes are qualitatively different in terms of body image is further supported by the classification table (Table 6), which shows it is difficult to correctly classify Division II athletes.

Although it is not possible to deduce the exact underlying reason(s) for this trend, there are several possibilities. One option is that Division I athletes have a strong athlete identity based on their participation in the highest available level of competition. Additionally, Division III volleyball players are the only group not permitted to receive athletic scholarships. Therefore, individuals participating at the Division III level may identify so strongly as athletes that they are willing to sacrifice significant time and

energy during their college years in order to be able to participate in athletics, in spite of the lack of financial motivation. By comparison, Division II athletes are able to receive athletic scholarships, yet are either unable or choose not to compete at the Division I level. This may cause them to undervalue their athletic participation, to attribute their involvement to the monetary compensation, or be an indicator of a less strongly held athlete identification.

Another potential explanation for these discrepancies among Division II athletes may stem from the NCAA's efforts to cultivate an atmosphere in Division II that is distinct from Division I. In 2005 (and revised in 2010), the NCAA developed a program called "Life in the Balance," which describes six attributes (learning, service, passion, resourcefulness, balance, and sportsmanship) that are promoted within the Division II experience ("Life in the Balance," 2011). Concrete strategies such as shortening the Division II volleyball season and limiting practice sessions allow Division II athletes to more evenly balance athletic participation with other academic and personal priorities. This is often a stark contrast to the atmosphere among Division I programs, in which a higher emphasis may be placed on the athletic dimension of the student-athletes' lives. As a result, it is possible that the Division II volleyball players' are less consumed by their roles as athletes and that their body images are less impacted by their athletic participation.

When taken as a whole, these findings present an image of collegiate volleyball players as women who perceive their bodies as slimmer but more athletic than non-athletes, with the exception of the most elite level athletes, who see their bodies as significantly larger. Despite the fact that they place a high emphasis on athleticism and

idealize larger and more athletic bodies, athletes still experience more body dissatisfaction than women not involved in intercollegiate volleyball. These effects appear to be heightened as the level of competition increases, especially in terms of body dissatisfaction. Thus, it appears that these volleyball players may be placed in an almost unwinnable scenario. They idealize and strive toward a muscular and athletic body, yet they are more dissatisfied with the bodies they see in the mirror, despite the fact that they are muscular and athletic! In fact those who saw themselves as the most athletic and who idealized the most athletic bodies (Division I volleyball players), actually experienced the greatest body dissatisfaction. Furthermore, all of the time spent in working toward this ideal (practicing, weight lifting, conditioning, etc.) apparently fails to foster any greater sense of appreciation for their bodies' abilities.

### **Implications for Female Athletes**

The results of this study have various implications for how body image in collegiate athletics is viewed and approached. First, this study supports the idea that body image concerns in athletics are not limited to the typical "thin" sports. Volleyball has traditionally been a sport that values strength as well as leanness. Both of these factors are represented in the body image of collegiate volleyball players, who strive toward a muscular yet thin body type. However, there is also an alarming trend toward body dissatisfaction, especially within the most elite level of competition. Therefore, while it appears that messages promoting the health and athletic benefits of a strong and muscular physique are taking hold, the drive toward thinness and the resulting dissatisfaction remain prevalent. This body dissatisfaction is an important consideration, as it is an identified indicator of disordered eating and other unhealthy body attitudes.

Coaches, trainers, and others involved with intercollegiate athletics would benefit from awareness of these concerns. Furthermore, it may be beneficial for coaches and institutions (NCAA, universities, etc.) to institute policies to promote healthy body image among female athletes. For example, coaches could eliminate invasive weighing and measuring policies that may encourage excessive body monitoring and dissatisfaction among athletes. NCAA athletes are also required to attend various seminars on issues of concerns (e.g., drugs/alcohol, sports betting, hazing, etc.). Coaches, administrators, and institutions may want to consider developing and implementing programs designed to foster positive body image and healthy nutritional strategies, particularly among its female athletes.

### **Strengths of the Study**

The present study has several notable strengths that are important to consider. First, the study investigated a population that is commonly overlooked within body image research. Collegiate volleyball players do not participate in one of the sports most commonly explored when investigating body image. Therefore, the results help to illustrate that body image concerns extend far beyond traditional lean sports, such as gymnastics, ballet, etc. While this study looked only at volleyball players, these results may generalize to other sports with similar body ideals, such as tennis, soccer, or basketball. Future research into the similarities and differences between the body image of individuals participating in these sports would likely be beneficial. Second, the volleyball players were taken from a nationwide sample. This provided a sample less likely to be impacted by more regional confounds such as potential geographic body image norms. Third, the current study includes the level of competition as a factor in the

analyses, and showed that differences do occur between the NCAA Division levels. Exploring level of competition is often neglected in similar body image research. When it is included, it often involves very disparate levels of competition (e.g., national level athletes vs. high school athletes) in order to highlight the effect of level of competition. The present study examined level of competition within a relatively small range, and illustrated that key differences exist even within this narrow range. Finally, the current study included positive aspects of body image into the analyses, which is frequently ignored in body image research. In doing so, the present study was able to search for both detrimental and beneficial effects of athletic participation.

### **Limitations and Future Research**

There are also several limitations that are important to note and potentially address in future research. First, BMI is not necessarily the most complete measure of body size. BMI is a very useful form of measurement and provides an idea of an individual's body size, yet provides no information on body composition. This can become problematic when investigating a group suspected of having unique body compositions, such as athletes who are likely to have more muscle (meaning BMI overestimates the amount of fat in athletes). In other words, an athlete and a non-athlete can have the same BMI, yet their bodies can look very different. The more muscular body will appear leaner and often have smaller anthropometric measurements. Given the fact that the current study used a nationwide survey, BMI was deemed to be the most accurate measure of body size that was feasible to calculate. However, future research may benefit from additional body size considerations, such as anthropometric body measurements (chest, waist, hip, etc.) or body fat analysis.

One of the benefits of the current study was its inclusion of level of competition, which was measured using NCAA Division levels. However, this is not the only potential indicator of level of competition. Future studies may benefit from including other possible measures of competitiveness. For example, the NCAA ranks all of its 327 Division I volleyball teams, creating a potential numerical ranking of competitiveness. It is important to note that this list is based on votes from coaches and other knowledgeable parties, thus making it a somewhat subjective list of competition level. The ranked list was not used in the present study for several reasons. The primary reason was that only Division I schools are fully ranked. Division II and Division III generally only rank the top ten and eight schools, respectively, in each region. Because this study included schools in all three Divisions, this approach was not deemed appropriate. Furthermore, the list frequently changes throughout the volleyball season (August through December or January), meaning one list would have to be chosen as the “official” list that would be used to rank competitiveness, such as the end of season rankings. While these setbacks made this approach unfeasible for the present study, future research (especially those examining Division I or only the top tier Divisions II and III institutions) may consider this as an alternative measure of competition level.

Another possible limitation of the current study was the difficulty in recruiting participation from “top tier” Division I volleyball players. For unspecified reasons (e.g., lack of interest, too many time demands, etc.), the volleyball coaches at programs considered to be the most competitive or elite chose not to allow their athletes to participate in the study. Based on the Division I rankings from November 14, 2011, the most highly ranked participating programs were Creighton University, ranked 58<sup>th</sup>, and

Eastern Michigan, ranked 67<sup>th</sup> (“Women’s Volleyball Rankings”, 2011). Therefore, it would be beneficial if future research could include more participants from highly ranked programs, to explore whether this may heighten the effect that competition level has on body image.

Another potential limitation was the difficulty in obtaining a comparison group of non-athletes from the various academic institutions from which the athletes were drawn. However, as athletes were reluctant to provide information for non-athletes, this goal could not be realized. While it is not expected that having a sample primarily composed of individuals from one institution significantly impacted the responses of the comparison group, it may be beneficial to retry a matched comparison group, perhaps using a different and more effective sampling technique.

This study found clear differences between athletes at various levels of competition, and hypothesized reasons for these effects. However, it would be beneficial for future research to explore which differing factors (e.g., difference in practice/training time, exposure to more athletic body types, increased pressure from coaches, etc.) actually contribute to these differences.

As mentioned previously, the current study suggests that future intervention strategies such as programs to promote body appreciation or prevent disordered eating may be beneficial for athletes, particularly those at high levels of competition. Therefore, one final and necessary avenue of future research is to investigate the effects of various interventions for athletes of various sports, not just the sports typically thought of as thin sports.

This study supports the idea that female athletes participating in a sport not traditionally thought of as thin or lean have very different beliefs and attitudes toward their bodies as compared to women in the general population. Athletes are more likely to emphasize and internalize a strong and athletic ideal, rather than fixating on popular media messages that perpetuate the idea of thinness as women's primary physical goal. However, involvement with intercollegiate athletics, particularly at highly competitive levels, may place athletes at risk for body image concerns such as elevated body dissatisfaction. Raising awareness (e.g., through further research, program development, etc.) of these trends is likely the next step in counteracting the risks and maximizing the potential benefits inherent within collegiate athletic participation.



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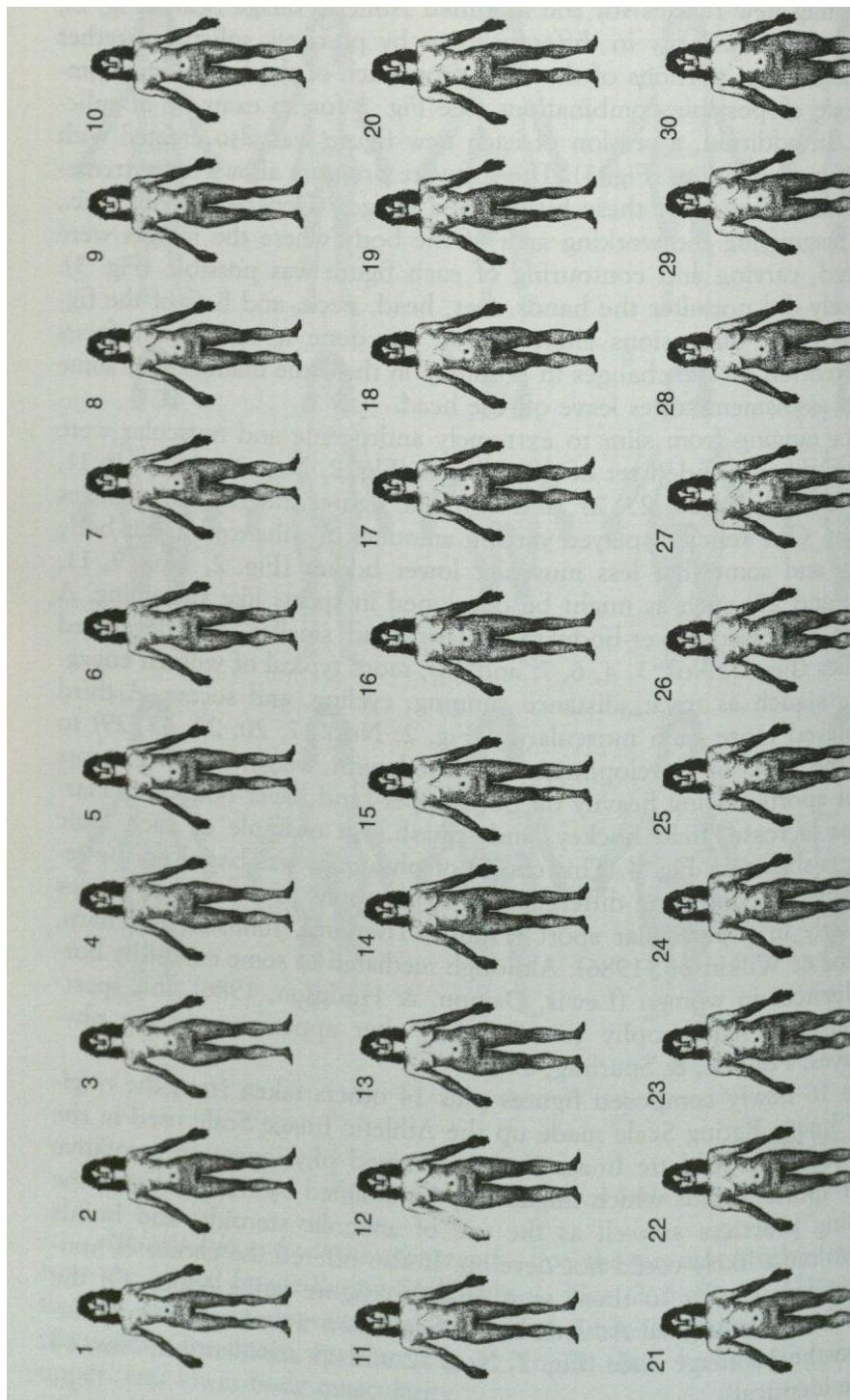
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# APPENDIX A

## ATHLETIC IMAGE SCALE



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 Lenart, E.B., Goldberg, J.P., Bailey, S.M., Dallal, G.E., & Koff, E. Current and ideal physique choices in  
 exercising and nonexercising college women from a pilot Athletic Image Scale. *Perceptual and Motor  
 Skills*, 1995, 81, 831-848. © Perceptual and Motor Skills 1995.

## APPENDIX B

## EATING DISORDERS INVENTORY - BODY DISSATISFACTION SUBSCALE

This is a scale which measures a variety of attitudes and feelings about yourself and your body. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. RESULTS ARE COMPLETELY CONFIDENTIAL. Read each question and select the answer which applies best for you. Please read each question *very* carefully. Thank you.

1. I think that my stomach is too big.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

2. I think that my thighs are too large.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

3. I think that my stomach is just the right size.\*

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

4. I feel satisfied with the shape of my body.\*

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

5. I like the shape of my buttocks.\*

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

6. I think my hips are too big.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always



7. I think that my thighs are just the right size.\*

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

8. I think my buttocks are too large.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

9. I think that my hips are just the right size.\*

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

\* indicates negatively keyed item.

## APPENDIX C

## SOCIAL PHYSIQUE ANXIETY SCALE

**Read each of the following statements carefully and indicate the degree to which the statement is characteristic or true of you, according to the following scale:**

- 1 = Not at all characteristic of me**
- 2 = Slightly characteristic of me**
- 3 = Moderately characteristic of me**
- 4 = Very characteristic of me**
- 5 = Extremely characteristic of me**

1. I wish I wasn't so uptight about my physique/figure. \_\_\_\_\_
2. There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively. \_\_\_\_\_
3. Unattractive features of my physique/figure make me nervous in certain social settings. \_\_\_\_\_
4. In the presence of others, I feel apprehensive about my physique/figure. \_\_\_\_\_
5. \*I am comfortable with how fit my body appears to others. \_\_\_\_\_
6. It would make me uncomfortable to know others were evaluating my physique/figure. \_\_\_\_\_
7. When it comes to displaying my physique/figure to others, I am a shy person. \_\_\_\_\_
8. \*I usually feel relaxed when it is obvious that others are looking at my physique/figure. \_\_\_\_\_
9. When in a bathing suit, I often feel nervous about the shape of my body. \_\_\_\_\_

***Reverse score #'s 5 & 8 and sum the 9-items for a total score.***

## APPENDIX D

## BODY APPRECIATION SCALE

Please indicate whether the question is true about you never, seldom, sometimes, often, or always.

**1. I respect my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**2. I feel good about my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**3. On the whole, I am satisfied with my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**4. Despite its flaws, I accept my body for what it is.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**5. I feel that my body has at least some good qualities.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**6. I take a positive attitude towards my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**7. I am attentive to my body's needs.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**8. My self worth is independent of my body shape or weight.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**9. I do not focus a lot of energy being concerned with my body shape or weight.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**10. My feelings toward my body are positive, for the most part.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**11. I engage in healthy behaviors to take care of my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**12. I do not allow unrealistically thin images of women presented in the media to affect my attitudes toward my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

**13. Despite its imperfections, I still like my body.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always

## APPENDIX E

## SOCIOCULTURAL ATTITUDES TOWARD APPEARANCE QUESTIONNAIRE - 3

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

**Definitely Disagree = 1**  
**Mostly Disagree = 2**  
**Neither Agree Nor Disagree = 3**  
**Mostly Agree = 4**  
**Definitely Agree = 5**

1. TV programs are an important source of information about fashion and "being attractive." \_\_\_\_\_
2. I've felt pressure from TV or magazines to lose weight. \_\_\_\_\_
3. I do not care if my body looks like the body of people who are on TV. \_\_\_\_\_
4. I compare my body to the bodies of people who are on TV. \_\_\_\_\_
5. TV commercials are an important source of information about fashion and "being attractive." \_\_\_\_\_
6. I do not feel pressure from TV or magazines to look pretty. \_\_\_\_\_
7. I would like my body to look like the models who appear in magazines. \_\_\_\_\_
8. I compare my appearance to the appearance of TV and movie stars. \_\_\_\_\_
9. Music videos on TV are not an important source of information about fashion and "being attractive." \_\_\_\_\_
10. I've felt pressure from TV and magazines to be thin. \_\_\_\_\_
11. I would like my body to look like the people who are in movies. \_\_\_\_\_
12. I do not compare my body to the bodies of people who appear in magazines.  
 \_\_\_\_\_

13. Magazine articles are not an important source of information about fashion and "being attractive." \_\_\_\_\_
14. I've felt pressure from TV or magazines to have a perfect body. \_\_\_\_\_
15. I wish I looked like the models in music videos. \_\_\_\_\_
16. I compare my appearance to the appearance of people in magazines. \_\_\_\_\_
17. Magazine advertisements are an important source of information about fashion and "being attractive." \_\_\_\_\_
18. I've felt pressure from TV or magazines to diet. \_\_\_\_\_
19. I do not wish to look as athletic as the people in magazines. \_\_\_\_\_
20. I compare my body to that of people in "good shape." \_\_\_\_\_
21. Pictures in magazines are an important source of information about fashion and "being attractive." \_\_\_\_\_
22. I've felt pressure from TV or magazines to exercise. \_\_\_\_\_
23. I wish I looked as athletic as sports stars. \_\_\_\_\_
24. I compare my body to that of people who are athletic. \_\_\_\_\_
25. Movies are an important source of information about fashion and "being attractive." \_\_\_\_\_
26. I've felt pressure from TV or magazines to change my appearance. \_\_\_\_\_
27. I do not try to look like the people on TV. \_\_\_\_\_
28. Movie stars are not an important source of information about fashion and "being attractive." \_\_\_\_\_
29. Famous people are an important source of information about fashion and "being attractive." \_\_\_\_\_

30. I try to look like sports athletes. \_\_\_\_\_

#### Subscale Items

Internalization-General: Items: 3, 4, 7, 8, 11, 12, 15, 16, 27

Internalization-Athlete: Items: 19, 20, 23, 24, 30

Pressures: Items: 2, 6, 10, 14, 18, 22, 26

Information: Items: 1, 5, 9, 13, 17, 21, 25, 28, 29

Reverse-keyed items: 3, 6, 9, 12, 13, 19, 27, 28