

An Investigation of Body Image Among NCAA Female Athletes

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### **Abstract**

Over the last several decades, body image perceptions of collegiate female athletes have been investigated in the realms of both physical and mental health. The issue has been evaluated from various standpoints including sport type and competition level; however, body image is highly individualized among young women and thus remains an unpredictable challenge with unanswered questions. This comprehensive study includes an extensive literature review of research involving collegiate female athletes and factors that contribute to their body image; additionally, a newly developed survey for female athletes at the NCAA Division I level was administered, and more than 150 responses were analyzed. Four research objectives served as the foundation of this research, targeting the ultimate goal to form conclusions about how body image perceptions function in the lives of collegiate female athletes within the NCAA. The objectives were: first, to define body image as applicable to collegiate female athletes; second, to establish pressures that influence body image; third, to determine how the pressures of collegiate sport differ from the pressures on student non-athletes; and fourth, to assess the relationship between nutritional habits and body image among collegiate female athletes. Upon analysis of literature and the new survey, it was concluded that body image is dependent on many factors such as sport type, division level, and media objectification, but more importantly, the ways that individuals internalize such stimuli. Ultimately, the athletic world contributes to body image concerns and creates a unique pressure that cannot be experienced by non-athletes.

## Introduction

### Background

Young adult females of the twenty-first century, perhaps more than any other generation, often find themselves struggling to find their place in society, overcome stereotypes and double standards, and feel comfortable in their own skin. Numerous studies in the last two decades, such as *Exploring Body Dissatisfaction in Collegiate Athletes* (Perelman, 2017), have analyzed female collegiate athletes in regards to body image, self-esteem, and perceptions of gender and athletic stereotypes that may contribute to the prevalence of body image disorders among young women. Nearly 50 years after the implementation of Title IX, female athletes still report feeling inferior and undervalued compared to their male counterparts (Rayburn, Chen, & Phillips, 2015). However, reducing gender inequities would likely not eliminate nor even substantially reduce such concerns in female athletes. Countless factors such as personality, self-esteem, and sport type interact to influence body image and eating patterns (Kato, Jevan, & Culpepper, 2011).

According to Kato, Jevan, and Culpepper (2011), body image is “the self-perception and attitudes an individual holds with respect to his or her body and physical appearance.” With poor body image typically comes low self-esteem, weight obsession, disordered eating habits and eating disorders, and consequent health issues that may be life-long and life threatening (Wells, Chin, Tacke, & Bunn, 2015). As body image is a complex and generally misunderstood concept that is unique to each individual, research and interest in the issue spans across disciplines. Body image is by definition a derivative of mental health, and thus rooted in the field of psychology. Due to its influence on physical health, via patients’ diet patterns, weight management, and related complications, the medical field also deals closely with body image. Lastly, as athletes

appear to be frequent victims of body image disorders, athletic trainers and coaches must be familiar with the issue, especially among women.

Every female is unique, and pinpointing specific causes and preventions for body image concerns has proved to be nearly impossible. Research has indicated recurring factors and correlations, though. Simply being a member of the female population puts an individual at risk for developing an eating disorder. Being a competitive athlete and of collegiate age also point toward increased risk (McLester, Hardin, & Hoppe, 2014). One tenth of collegiate women develop eating disorders, and up to 62% of female collegiate athletes have disordered eating patterns (Kato et al.; Steinfeldt, Zakrajsek, Carter, & Steinfeldt, 2011). Therefore, women in the National Collegiate Athletic Association are presumably highly susceptible to developing a body image disorder, and they are often the center of body image conversation.

Many studies of female athletes reported that these women typically have high levels of self-esteem, likely due to their physical abilities and success (Varnes et al., 2013). The question, then, is why coaches, trainers, and athletes themselves observe such a concerning prevalence of poor body image in female collegiate athletics. Sport type, media pressure, and competition level have been identified as variables that potentially influence body image. For example, athletes in “lean sports,” or sports that emphasize a slim physique (i.e. gymnastics, distance running, and swimming/diving) are more likely to develop body image issues than athletes in “non-lean” sports, or sports that are not associated with a thin body (i.e. softball, basketball, , and golf) (Wells et al., 2015). Female athletes as a population, though, are portrayed in the media as models with unrealistic body types and unattainable beauty. Thus, female athletes feel pressure to be physically fit and tough in their sport while also maintaining a thin, feminine physique that may not be healthy for their body or necessary for their sport (Varnes et al., 2015; Steinfeldt et

al., 2011). Messages in the media conflict with what female athletes know to be true and healthy, but young women are nonetheless objectified and held to unreachable standards.

As mentioned, level of competition in female collegiate athletics influences athletes' body image. To distinguish between size and competition level, the National Collegiate Athletic Association (NCAA) is divided into Divisions I, II, and III. Division I is the most competitive and offers the most athletic scholarships, while Division II offers fewer scholarships and has typically smaller athletic programs. Division III offers no scholarships related to athletics (Varnes et al., 2013). Division I athletes, then, arguably have the highest amount of athletic pressure – the expectations are higher and the competition stage is larger and more advanced. This is not to say that lower division athletes do not experience athletic pressure and related body image concerns; several studies have compared eating disorders, body image, and other mental health issues across NCAA divisions, and while the findings are diverse, athletes at all levels experience pressure, eating disorders, and other body image issues (Varnes et al., 2013).

While being an athlete appears to increase the risk of poor body image, some research yields contradictory findings, likely due to female athletes' tendency to have elevated self-esteem (Varnes et al., 2013). Since collegiate female athletes are generally high caliber athletes with prided physical functionality, they are perhaps less likely to have body insecurities. However, results vary among NCAA divisions and sports (Kato et al., 2011). Some studies suggested that athletes under more pressure, or part of a more competitive division, have an increased likelihood to experience negative body image, while other studies suggested that athletes in less competitive divisions are more at risk. Specific body image issues appears to differ by division; for example, some athletes are preoccupied with weight, while others are more

concerned with their appearance (Varnes et al., 2013). Still, other data conveyed that regardless of being an athlete, sexualization of females is a common factor (Varnes et al., 2015).

### **Unknown Interactions Among Body Image Influences**

While researchers understand the increased likelihood of body image concerns among individuals who are female, of collegiate age, and involved in competitive athletics, and furthermore the pressures associated with sport type, media, and level of competition, findings about the direct influence of athletics on body image and nutritional patterns of athletes have been somewhat inconsistent. Upon investigating body image, scientists must decide which athletes to study and what type of research methods will yield the most accurate, unbiased results. As body image can be a very personal issue, especially for those struggling, not all young women are open and honest about their body image or factors that influence their self-esteem. Studies often struggle to encapsulate the right balance of sample size, geographic region, athlete personality, sport type, and cultural norms (McLester et al., 2014). A study of athletes at one university may cover a variety of sports, but can only analyze one geographic region and will likely have a small sample size. Likewise, a survey of Division II schools may better capture a variety of athlete personalities but cannot accurately compare to other NCAA divisions.

As discussed, several factors influence body image, such as personality, family background, and geographic location; the interaction among factors creates and skews self-perceptions. This presents a challenge to identify risks of body image disorders among collegiate female athletes. Additionally, different survey tools such as The Conformity Factor Analysis of the Conformity to Feminine Norms Inventory and the Eating Disorder Inventory present different types of questions and evaluation of female athlete body image. For example, the former is a self-reported tool that analyzes women's conformity to female-emphasized norms in

the United States, such as Thinness, Domesticity, Modesty, and Appearance, while the latter assesses personality traits that are commonly associated with eating disorders (Steinfeldt et al., 2011; McLester et al., 2014). Interestingly, the studies reviewed used numerous different tools and asked different questions all to assess the same body image issues. Thus, the best way to solve unknowns surrounding female athlete body image has not been established. There also seems to be limited data on the relationship between body image and nutritional habits.

### **Research Objectives**

While considering the athletic and social pressures already known to influence body image, I conducted an extensive literature review of current, diverse studies examining body image of collegiate female athletes within the NCAA, with the goal of better characterizing the trends of collegiate female athlete body image. In conducting this review, I analyzed NCAA female athletes' individual body images, and furthermore investigated how internal and external pressures and personal nutrition habits interact to create or skew these women's perceptions of their own bodies. To guide this analysis, I wrote four research objectives. The first defines "body image" and related terminology by accepted scientific and social definitions, and identifies how these concepts may apply to female collegiate athletes. This objective explores how the scientific, health, and general public communities perceive the concept of body image. It defines related terminology as well, in an effort to examine what body image means to collegiate female student athletes, and how they find themselves to be affected by their own self-perceptions.

The next objective establishes the various pressures of collegiate sport that influence female athletes' body image. While existing studies report contradicting data on the influence of collegiate athletics on body image, I have attempted to come to a clearer conclusion of the relationship between athletics and athletes' self-esteem. Female athletes indicate specific

pressures and influences that dictate body image, and this objective identifies them. Pressures are internal, such as self-inflicted pressure related to academics, athletics, and social life; pressures are also external, such as coaches, teammates, and media. Each sport has different expectations with which it is associated. I hypothesized that individual athletes have different reactions to each type of pressure, some positive and some negative; this hypothesis was proven true. Furthermore, not all athletes were susceptible to the same levels of stress.

The third objective determines how the previously established pressures of collegiate sport affect female athletes' body image in comparison to female college students who are not athletes. Additionally, it considers whether female athletes recognize, connect, or blame their sports' impact on body image concerns. Studies have explored how female athletes compare themselves to their non-athlete peers, and this objective expands upon that idea. Although the lifestyle and experiences of athletes and non-athletes can be quite different, they experience similar levels of body image concern due to feminine stereotypes and media.

The fourth and final research objective assesses the nutritional habits of NCAA female athletes in relation to their body image. This objective determines whether female collegiate athletes have generally wholesome diets, and if their nutritional habits affect their body image. Good nutrition and self-care are associated with improved athletic performance, but if athletes have negative body image based on weight or physical appearance, there may be increased likelihood that they practice poor or irregular eating patterns. Moreover, eating well – or poorly – potentially parallels how young women view themselves.

## **Methods**

The four research objectives outlined above were initially explored through an extensive literature review of preexisting studies; after consideration and analysis of existing research, I

conducted a study of my own, with the guidance of Indiana State faculty advisors and approval from the Institutional Review Board. The new study, consisting of twelve multiple-choice survey questions, was distributed to 100 NCAA Division I universities' athletic departments across the United States, separated into the following geographic regions: West, Mountain, Midwest, South Central, South, Southeast, Northeast, Great Lakes, and Mid-Atlantic. These are the geographic regions established by the NCAA for the Division I cross country championships. Between seven and 13 schools from each region were randomly selected to be contacted; some regions are larger than others are, so more schools were selected from larger regions.

Athletic departments were contacted by email and received access to the survey through a URL. They were prompted to share the survey link with the female athletes at their institution through a mass email using specified language, in effort to reduce bias. Female collegiate athletes who received the URL from their athletic department could then take the survey anonymously, after first giving their consent by reading the Informed Consent protocol and clicking "I consent, begin the study"; the consent protocol was the first question displayed.

The survey asked questions regarding body image, internal and external pressures (athletic or otherwise), and nutritional habits that may influence collegiate female athletes' self-perceptions. Following the standard of studies previously reviewed, I collected athletes' sport, year in college, and perceived self-esteem level. When asking what factors influence body image, choices included "the media," "athletics," "academics," and "myself," among others, and respondents could also add their own response. Other questions asked the athletes to report the prevalence of body image concerns and eating disorders in their sport. I also addressed issues that were not clearly as discussed in reviewed literature, including athletes' eating habits and the relationship between food intake and body image. As a collegiate female student athlete myself, I

felt I could construct questions that were relatable to athletes and furthermore targeted potential body image concerns that were possibly overlooked or misrepresented by other scientists.

### **Summary of Thesis**

Body image, particularly as it pertains to young women, is a growing concern in the psychological, medical, and athletic communities. Despite dozens of studies in the last two decades, the issue remains somewhat misunderstood. While many risks and factors associated with poor body image among collegiate female athletes have been identified, the significance of these factors and how they interact is complicated and individualized. What research repeatedly proves is that poor body image poses significant mental and physical health concerns for young women that extend beyond their athletic aspirations. This report has aimed to discover how medical professionals and collegiate female athletes define body image, determine the pressures of competitive athletics, explore how these pressures influence female athlete body image, and assess the nutritional habits of collegiate female athletes. The ultimate goal has been to conclude why, despite athletes' elevated self-esteem and increased equality in sport, the prevalence of body image concerns among female athletes continues to persist.

## **Discussion and Analysis of Literature Review**

### **Introduction**

Female athlete body image concerns have been widely recognized across disciplines, and researchers continue to investigate the issue today. Countless studies have explored various sports, athletic divisions, and factors that contribute to body image in the lives of collegiate athletes. The ways in which these variables interact to create and skew female collegiate athletes' body image, whether positive or negative, is a complexity that interests scientists, doctors, coaches, and athletes themselves. Although the scientific community clearly defines *body image*,

the many correlates associated with body image, such as body dissatisfaction, the thin ideal, and eating disorders, make the idea of *body image* more abstract. Additionally, athletes may develop their own conceptions of body image, depending on its role in their sport and life.

Studies have identified factors that influence body image; more importantly, these studies repeatedly concluded that no two individuals experienced the exact same pressure or body image perception, even when individuals were on the same team. Pressures were both internal and external, and may have been unique to sport and competition level, though findings were diverse (Wells et al., 2015; Rayburn et al., 2015). Additionally, traits like competitiveness and sport confidence were factors unique to individuals that reflected body image and self-esteem (Perelman, 2017). Whether or not a woman is part of an athletic team may increase her body image concern, as athletes were generally more aware of their body and physical capabilities than were non-athletes. Furthermore, athletes were reported to compare themselves to non-athletes and struggle with the idea of being thin, as idealized by western media, versus being physically fit or muscular, as is necessary for collegiate athletics (Steinfeldt, Zakrajsek, Bodery, Middendorf, & Martin, 2012; McColl, 2015). Nutritional knowledge may also influence body image. Athletes' eating patterns are likely different from non-athletes', yet athletes are not necessarily healthier. Studies explored the prevalence of eating disorders and disordered eating among athletes and non-athletes. Like other variables, findings were diverse across studies and appeared prominently on an individualized basis. Understanding disordered eating, eating disorders, and the body's needs during intense training and competition periods could potentially reduce the prevalence of disordered eating and eating disorders among female collegiate athletes.

In subsequent sections, four research objectives will explore collegiate female athlete body image. All studies reviewed were conducted on NCAA athletes. The first objective will

define body image and related terminology and identify how these concepts are applicable to female collegiate athletes. The second and third objectives will explore the pressures that influence body image and how collegiate athletes may differ from non-athletes. Lastly, the fourth objective will assess the nutritional habits of collegiate female athletes and make connections to body image concerns. The goal of this discussion is to draw conclusions about how exactly body image functions in the lives of female athletes within the NCAA.

**Objective One: To define *body image* and related terminology by accepted scientific and social definitions, and identify how these concepts apply to female collegiate athletes**

While nearly every study reviewed described *body image* slightly differently, the term was simply defined as the way an individual feels about himself or herself based on his or her physical characteristics (Kato et al., 2011). Body image applies to men and women, athletes and non-athletes, every race, culture, geographic region, and economic background; the issue does not discriminate. However, collegiate female athletes are the subjects in question, and they meet criteria for having an increased likelihood of negative body image –being female, athletes, and of collegiate age (McLester et al., 2014). If a woman feels satisfied, confident, or pleased with her body, she has a positive body image; likewise, if a woman is dissatisfied or ashamed about her body, she has a negative body image. An array of other terms and concepts relate to body image; these include body image disturbance and body dissatisfaction, thin idealization, and disordered eating. Thus, while body image by definition is simple, related ideas affect all female athletes differently and make the issue more complex.

Varnes and colleagues (2013) defined *body image* as an “umbrella term encompassing many constructs” (p. 422). These constructs were rooted mentally, perceptually, and emotionally in young women, and included body satisfaction and dissatisfaction, self-esteem, weight preoccupation, and body appreciation, among other concerns (Kato et al., 2011; Varnes et al.,

2013). Body image was not always negative; in fact, female athletes often reported positive body image and self-esteem (Varnes et al., 2013). High self-esteem, self-acceptance, positive outlook, and healthful behaviors characterized positive body image. The way a woman thought, felt, and acted regarding her physical appearance indicated positive or negative body image (“What is body image,” 2017). Female athletes with positive body image were overall more likely to be confident on and off the court; likewise, negative body image reduced confidence and mentality.

Body dissatisfaction related closely to negative body image. Perelman (2017) stated that “body dissatisfaction is a distinctive experience arising when there is inconsistency between an individual’s body image and the body type perceived as ideal” (p. 44). For athletes, body dissatisfaction may have stemmed from the conflict between society’s expectations of female physique and the athletic world’s expectations of body size. This discrepancy, then, had potential to cause body image disturbance for female athletes by creating a disparity between their actual body size and the perceived ideal size; such disturbance was linked to an increase in eating disorders (Steinfeldt et al, 2011; Torres-McGehee, Monsma, Gay, Minton, & Mady-Foster, 2011; McColl, 2015). Research associated body dissatisfaction specifically with athletes and indicated that the issue is on the rise (McLester et al., 2014; Kato et al., 2011). While body dissatisfaction, like body image internalization, was highly dependent on individuality, young women had tendencies to focus on certain body parts commonly exploited in the media. For example, collegiate female athletes may be more concerned with their thighs or hips than their upper body (Anderson, Petrie, & Neumann, 2012). However, such concerns could also be dependent on sport. Regardless of sport, though, young women who considered themselves overweight were more likely to have poor self-esteem. This also created the sensation of body

shame, or guilt related to body image, that may ultimately cause health problems such as abnormal eating patterns and depression (Steinfeldt et al., 2011; Varnes et al., 2013).

Collegiate female athletes may have high body image investment, meaning they spend a significant amount of time preoccupied by their physical characteristics (McColl, 2015). This obsessing over one's body correlated with poor self-acceptance, and thus often created a negative body image. In extreme cases, body dysmorphic disorder developed. Body dysmorphic disorder is a clinical condition in which individuals perceive their body features to be overly flawed, ultimately causing abnormal behaviors or paranoia regarding imagined physical imperfections (McColl, 2015). As understanding athletes is critical in correcting their body image concerns, some research explored body image investment and other elements of body image through athletes' communication about their self-perceptions. Personal communication was how the athlete viewed herself and how much time she spent obsessing over body image. Enacted communication was the lifestyle an athlete lived based on her body image; this included eating habits and exercise patterns outside of sport. Relational and communal identity described how coaches and teammates influence athletes' body image and how coaches and athletes discussed these issues (Beckner & Record, 2016). Collegiate female athletes had their own ways of expressing and coping with body image concerns, and they spent varying amounts of time invested in the issues. Studying body image investment and the way collegiate female athletes communicate provided a clearer lens to understanding how body image influenced these athletes.

The thin ideal was another major influence of body image. Globalized media continues to glorify, exploit, and sexually objectify the thin female body type, although this standard remains unrealistic and unattainable for most young women. For collegiate female athletes, thin

idealization was often harmful. The “athlete ideal” was slightly different from the “thin feminine ideal,” but collegiate female athletes found themselves in the middle of the two standards. The athletic ideal emphasized a more muscular, toned body, while the thin ideal emphasized stereotypical model body types (Varnes et al., 2013). The conflict for athletes was in attempting to conform to both ideals; society told them to be “Fit but Thin, Strong but Lean” (R. Zakrajsek, personal communication, March 6, 2018). Thus, athletes felt their muscular shape had to be attractive yet physically effective for athletic competition. Studies suggested that female athletes’ conformity and internalization of the thin ideal had potential to cause significant, diagnosable health conditions (Perelman, 2017). Contrasting the thin ideal, the athlete-specific healthy ideal embodied a physically and mentally healthy athlete. This ideal emphasized well-rounded health, including physicality, mentality, athletic ability, and overall quality of life (Becker, McDaniel, Bull, Powell, & McIntyre, 2012). Unfortunately, these positive emphases were not always the most prominent principles to which collegiate female athletes were exposed.

Disordered eating and eating disorders were rooted in body image concerns. Although collegiate athletes have higher caloric demands than do most typical college students, body dissatisfaction among athletes highly correlated with disordered eating and eating disorders (Wells et al., 2015). Disordered eating and eating disorders are not to be confused; though closely related, the two conditions are quite different. The two major eating disorders discussed were anorexia nervosa and bulimia nervosa. Symptoms of anorexia nervosa were caloric restriction and dangerously low body weight; bulimia nervosa symptoms included bingeing and purging (Quatromoni, 2008). While eating disorders themselves created extreme physical concerns such as low body weight and inadequate nutrient consumption, and were furthermore listed among the top causes of fatal disease, they also caused mental health concerns such as

anxiety and depression (Kato et al., 2011; McLester et al., 2014). Eating disorders were clinical or subclinical. Athletes with clinical eating disorders were diagnosed by health professionals and likely held out from sport competition. Subclinical cases, however, were not professionally diagnosed and were often overlooked, even when an athlete demonstrated disordered tendencies (Greenleaf, Petrie, Carter, & Reel, 2007). The American Psychiatric Association outlined specific criteria for clinical diagnosis of eating disorders; body image disturbance was among this criteria, further linking body image and eating disorders (McColl, 2015). Contrastingly, disordered eating was not as clearly defined and varied in severity. Most simply, disordered eating involved abnormal, restricted eating to achieve desired body weight or appearance (Wells et al., 2015). Athletes did not realize they engaged in disordered eating, and others around them did not always notice either; eating habits were easily mistaken for discipline or routine. While some athletes alter their weight with positive, healthy outcomes, abnormal eating is not the best way to achieve a desired weight, and even when weight loss is healthy, it should be carefully monitored at the collegiate level to ensure the health of athletes.

Lastly, the category of sport was critical to consider when studying body image concerns of collegiate athletes. Numerous studies suggested that the type of sport a woman is part of might have influenced her body perceptions. Scientists had varying methods of classifying sports, and where each sport fits was up to the discretion of investigators. Greenleaf and associates (2007) used five groupings: endurance, aesthetic, power sports, ball game, and technical. For example, endurance sports included swimming and running, aesthetic included diving and gymnastics, power sports included rowing and downhill skiing, ball game included soccer and basketball, and technical include golf and tennis. A more simple and common distinction between sport types was lean and non-lean. Lean sports were more often positively correlated with disordered eating

and included distance running, cheerleading, and volleyball. Non-lean sports included basketball, softball, and soccer (Wells et al., 2015). However, many sports arguably fit into either category, so each individual study must define its distinction among sport types.

Understanding the term *body image* and other terminology related to body image concerns of collegiate female athletes was the first step in investigation of the issue. *Collegiate female athlete body image* was collaboratively defined as the way a competitive female athlete at the NCAA level views herself in regards to her physical appearance. Terminology such as body dissatisfaction, body shame, body image investment, levels of communication, the thin ideal, disordered eating and eating disorders, and sport type classifications have helped scientists and medical professionals get to the root of body image concerns and attempt to prevent dangerous habits in response to negative body image.

**Objective Two: To establish the various pressures that interact with body image and influence female collegiate athletes' self-perceptions**

While the first research objective discussed specific body image terminology and its application to collegiate female athletes, this second objective aims to establish influences and pressures that affect body image. As previously mentioned, individuals experience different stresses and have different coping mechanisms; yet, for athletes, certain internal and external pressures were more prominent than in the lives of non-athletes. Furthermore, everyone experiences media, personal conflict, and other factors that interact to create body image.

Studies classified pressure as internal or external. Internal pressure stemmed from and existed within the athlete's mind, and included stress, depression, and self-esteem (Wells et al., 2015). Body dissatisfaction, sport confidence, perfectionism, mindfulness, and competitiveness were individualized variables that correlated with one another and were also considered internal pressure. In her 2017 study, Perelman found that when body dissatisfaction decreased (i.e. body

satisfaction increased), sport confidence, self-esteem, and mindfulness increased. Likewise, individuals who were perfectionists were more likely to have higher body dissatisfaction, reduced self-esteem, and low sport confidence. External pressures, contrastingly, were those perceived from media, peers, and the environment. Athletes' friends, family, teammates, and coaches – and their comments – created external pressure (Wells et al., 2015; McColl, 2015). Internal and external pressure were closely interwoven; factors experienced externally created internal ideas, and internal perceptions determined how external pressures were managed and understood. Weight concerns, arguably both internal and external, and body image, an internal conception, were found to dictate confidence on and off the athletic field and sometimes correlated with athletic success (Beckner & Record, 2016). All pressure, both internal and external, had potential to build in athletes' lives and create body image perceptions and concerns.

Studies linked environment to body image concerns. As the ideal physique for a woman in an athletic environment may oppose that of the ideal female body in a social environment, the ways female athletes felt about their bodies in and out of the athletic arena differed. For example, some athletes felt confident within their sport but self-conscious in social situations, creating a contradictory body perception (McColl, 2015; R. Zakrajsek, personal communication, March 6, 2018). “Body image among female student athletes is a multidimensional construct”....“These women reported feeling pride and confidence in their athletic bodies within the athletic environment, yet they also reported feeling conflicted about their bodies within social contexts” (Steinfeldt et al., 2012, p. 793; p. 811). The difference between body image in and out of athletics created somewhat of a paradox for female athletes, and further contributed to the complexity and individuality of body image concerns among young women. Furthermore, the sport itself - due to expectations, uniforms, and competition level - also created pressure for

athletes. Volleyball, a sport commonly associated with tight uniforms and other stereotypes, “may represent a sexually objectifying environment” (Steinfeldt et al., 2012, p. 812). The athletic facility, spectators, uniforms, and unwritten expectations of athletes in competition created sport environment that is repeatedly connected to body image.

Sexual objectification was a major external influence on collegiate female athletes. According to ESPN’s “Body Image Confidential” (2017), 68% of collegiate female athletes felt pressure to be pretty. The media held athletes to a “glorified, unreachable” beauty standard that reinforced the thin ideal (Varnes et al., 2013, p. 424). The media portrays physical ideals that are unrealistic for a majority of women, but especially for athletes who must maintain muscular, agile, and healthy bodies in order to perform. The objectification of female athletes, particularly by patriarchal institutions in the media, reportedly reduced respect and appreciation for female competition and perpetuated male dominance in the athletic world. As female athletics have become more popular in the past two decades, the objectification of female competitors has increased as well (Varnes et al., 2015). Another pressure related to objectification was sport uniforms. Certain sports, such as volleyball, gymnastics, and skating, require uniforms that were considered revealing. In a study of collegiate volleyball players, researchers found that athletes were very aware of their uniforms, and this led them to feeling both confident and self-conscious; athletes even anticipated sexual comments from male onlookers because of their appearance in uniform (Steinfeldt et al., 2012). However, many athletes claimed that their uniforms were designed specifically for functionality in sport and thus they did not frequently question related sexual objectification (R. Zakrajsek, personal communication, March 6, 2018).

Along with objectification comes pressure to be thin; the thin, feminine ideal that exists in western society continues to pressure female athletes. Some athletes felt they could not be

muscular and athletic while also being skinny and pretty. For example, swimmers typically had muscular arms and shoulders. Since these characteristics did not align with the thin ideal, some female swimmers reported feeling more masculine and less attractive than their non-athlete peers (Beckner & Record, 2016). Conforming to the thin ideal often resulted in body dissatisfaction and a desire for weight loss. Kato and colleagues (2011) found that 24% of Division I and 30% of Division III female athletes were mostly dissatisfied or very dissatisfied with their physical appearance. Similarly, Greenleaf and colleagues (2007) reported that half of the subjects in their study were dissatisfied with their current weight, and those who reported feeling overweight wanted to lose an average of 13.5 pounds. Oftentimes, the desire to be thin stemmed from performance goals. In sports such as gymnastics, distance running, and equestrian that put emphasis on body type, the desire to be thin was high and athletes often believed that achieving a certain body type would improve their athletic performance (Kato et al., 2011; Wells et al., 2015). Unfortunately, even when athletes believed they would improve their performance by losing weight, being thinner, or changing their body shape, this behavior normally reflected low self-esteem. Furthermore, athletes who experienced more pressure from media, sexual objectification, or other external factors had increased tendencies to engage in weight management behaviors that were potentially harmful (Steinfeldt et al., 2011; Anderson et al., 2012). Not all athletes were negatively influenced by the thin ideal; many understood the criticality of muscle, nutrition, and proper weight, and even considered their musculature advantageous for athletics (McColl, 2015).

Sport type was significant when considering the pressure on collegiate female athletes. Lean sports and non-lean sports created different environments and influences for competitors. There appeared to be increased sexual objectification of lean-sport athletes, as these women were

perhaps considered more feminine, attractive, or thin. This could also be why individual sport athletes (which are most often lean sport athletes), such as gymnasts and tennis players, felt less stereotyped as masculine than team-sport athletes, such as basketball and soccer players, who tended to have more pronounced muscle (Rayburn et al., 2015; Varnes et al., 2013). Lean sports placed a greater emphasis on the shape of the athlete's body. Studies indicated that this emphasis increased pressure regarding body weight and thinness and also increased body dissatisfaction and reduced self-esteem (Anderson et al., 2012; Perelman, 2017). Equestrian was unique as it had different distinctions within itself: Western and English. Judges scored Western equestrian based more on the rider, while English equestrian was judged with more emphasis on the horse. Therefore, Western equestrian resembled lean sports while English equestrian more closely resembled non-lean sports; the difference in these distinctions was correlated with a higher prevalence of disordered eating among Western riders (Torres-McGehee et al., 2011). The discussion of lean and non-lean sports continues to pose questions about what can be done to reduce objectification and stereotype among collegiate athletes.

When comparing the difference of body image between upper level (i.e. Division I) and lower level (i.e. Division III) athletes, findings were diverse. A common assumption was that at the highest level of competition, since the stakes were higher, sport pressure would be more prevalent. NCAA Division I sport teams typically had more resources than smaller programs, such as coaching staff, athletic trainers, and practice and competition facilities. They also were on a larger, more publicized stage. Thus, the expectations and competition level of Division I athletics was greater than that of Division II, Division III, and non-NCAA programs (McLester et al., 2014). However, multiple studies suggested that pressure is just as significant at the lower level, though athletes at different levels demonstrated concerns in varying areas of body image.

Perelman (2017) found Division I athletes were significantly more competitive and had higher self-esteem levels than Division III athletes. This study also indicated that upper divisions “serv[e] as a protector factor against certain psychological vulnerabilities” (p. 55) like self-esteem and mindfulness; Division I athletes reported fewer body image concerns than Division III athletes did. Lastly, specific concerns of upper and lower level athletes seemed to differ. Division III athletes had more weight preoccupation than Division I athletes, but Division I athletes had more body dissatisfaction of body areas and general appearance (Kato et al., 2011).

Pressures surrounding young women, particularly female athletes at the collegiate level, interacted to create and skew body image. Studies largely grouped pressure into two categories, internal and external. Internal pressures included stress management, body dissatisfaction, and self-esteem, and external pressures included environment, peers, and sexual objectification, among many others. Factors such as internalization and conformity to the thin ideal, sport type, and division level were also established as determinants of body image for many athletes. Each competitor undoubtedly experienced different forms of pressure and coped in her own way. Pressure was not always negative and did not always create negative body image; however, the countless forms of pressure were highly correlated with body image.

**Objective Three: To determine how the pressures of collegiate sport affect female athletes’ body image in comparison to female college students who are not athletes**

As the previous section discussed, numerous factors influence body image among young women, particularly collegiate athletes. This third objective focuses on the difference between collegiate female athlete body image and female non-athlete body image. Although both athlete and non-athlete females were five times more likely to have poor body image than their male counterparts, certain factors existed only in the sports world, which created discrepancy in the way athletes and non-athletes form conceptions of their bodies. Factors unique to sport included

athletic uniforms, coaches, and physical, social, and psychological domains (Blair et al., 2017; McColl, 2015). Because of these pressures, athletes coped with body image concern, the media, and other factors differently than did non-athletes. Athletes and non-athletes had different expectations and stereotypes in society and thus received differing messages about body image.

Collegiate female athletes had tendencies to compare themselves to other athletes and non-athletes. Upon interviewing several female Division I athletes, Beckner and Record (2016) deduced that “female athletes viewed themselves as muscular, identified themselves as different than others, and placed a personal emphasis on weight” (p. 367). Within the social domain, athletes compared their bodies to other athletes’ bodies and made assumptions about other athletes based on physical characteristics (Steinfeldt et al., 2012). By repeatedly analyzing other athletes’ bodies and comparing to their own bodies, collegiate female athletes lowered their own body image and self-esteem (McColl, 2015). Aside from the athletic arena, athletes judged their bodies against non-athletes’ bodies. Volleyball players reported feeling bigger and more masculine than non-athletes due to muscle mass and stature; however, typically these athletes appreciated height and strength as these qualities improved athleticism (Steinfeldt et al., 2012).

Comparison often led to conformity to societal values. While non-athletes were not necessarily expected to look toned, fit, or muscular while being petite, athletes felt pressured to be both athletic and slim. Female collegiate athletes strived to maintain muscle and athleticism, seemingly masculine standards, while also attempting to meet society’s feminine expectation; unfortunately for female athletes, the two stereotypes were not easily combined (Steinfeldt et al., 2011). Because of the contrast between the athletic and the feminine ideals, female athletes felt separated from their non-athlete peers. Many female athletes reported wearing bows, makeup, or accessories while competing, perhaps in attempt to close the athlete – non-athlete gap; research

also suggested sport confidence increased when athletes felt attractive while competing (McColl, 2015; Steinfeldt et al., 2012). The final piece of female athlete conformation was the timing of athletic growth. The shift from high school to collegiate athletics was often an intimidating change for female athletes. Studies suggested that young collegiate competitors may be more susceptible to disordered eating habits or eating disorders as they attempted to adhere to athletic expectations and societal norms (Greenleaf et al., 2007). Additionally, as athletes got older in sport (i.e. middle school to high school to college), uniforms typically became more revealing, increasing girls' body awareness and self-consciousness as they went through puberty and body development (R. Zakrajsek, personal communication, March 6, 2018). Both athletes and non-athletes were subject to societal pressures, but athletes were more likely exposed to conflicting messages regarding body expectations, which often resulted in negative body image.

Athletes and non-athletes coped with body image concerns differently, and even individual athletes had personalized management methods for body perceptions. In one study, 49% of athletes demonstrated excessive body image concerns; this number is similar to the estimated percentage of non-athletes with body image concerns, though numbers for each group varied (Kato et al., 2011). According to an athlete in Beckner and Record's 2016 study, it was "nearly impossible to not have that struggle with body image...I think that the biggest thing we have to think about is performing" (p. 368). When athletes put their body image concerns aside and focused on competing, they were more likely confident and successful in competition. Many collegiate female athletes understood that the ideal body portrayed in media is unattainable, and athletes often expressed confidence in regards to their athletic bodies. Others, however, felt self-conscious and overly aware of their physical flaws (Steinfeldt et al., 2012; Becker et al., 2012).

Perfectionism is a common trait of athletes that reinforces ideas about body imperfection. Researchers studied differences between athletes and non-athletes and determined that a major difference was perfectionism. This trait increases body image concerns and disordered eating tendencies (Kato et al., 2011). Among athletes, despite sex, sport type, or division level, Perelman (2017) found no significant difference in perfectionism. Perfectionism and discipline were two prominent characteristics of many collegiate athletes, and while these qualities often led to excellence, they sometimes correlated with body image concerns. Self-harming behaviors like caloric restriction and excessive exercise were often confused with commitment to sport (Thompson, n. d.). While coaches may be proud of their athletes for extreme dedication, related habits should be carefully monitored and assessed so as not to create body image disturbance.

As previously discussed, influence of media and stereotype on athletes was different from that on non-athletes. The sport stereotype was more likely to idealize small breasts, muscle tone, and strength, while expectations on non-athlete women were larger breasts and a curvy yet skinny shape (Becker et al., 2012). In the last two decades, media increasingly objectified female athletes, although these pressures perhaps also applied to non-athletes. The feminine ideal in modern society emphasized athleticism and fitness, even when these characteristics were incompatible with preexisting stereotypes of women. Sexualization occurred against all females, and gender objectification could be more of a concern for both athletes and non-athletes than athletic-related objectification against women in sports (Varnes et al., 2013; Varnes et al., 2015). Ultimately, globalized media sent mixed messages about female body type, which was harmful for the body image and self-esteem of athlete and non-athlete females.

Whether or not collegiate female athletes are more likely to develop eating disorders than non-athletes was a frequently asked question. While the pressures associated with collegiate

athletics perhaps seemed to increase the change of body image concerns, other research suggested that female athletes' elevated self-esteem gave them a lesser chance of developing eating disorders and disordered eating patterns. In a 2011 study (Kato et al., 2011), between 40 and 50% of female athletes were classified as having a subclinical eating disorder; this number was significantly higher than the estimated number of non-athletes with eating disorder tendencies. However, this was only one study with a relatively small sample size. In a different study, non-athletes were more susceptible to developing eating disorders (Blair et al., 2017). Regardless of the comparison between athletes and non-athletes, female collegiate athletes certainly experienced eating disorders and disordered eating. In many instances, symptoms were subclinical and thus went unrecognized by coaches, peers, and athletes themselves (Greenleaf et al., 2007). Simply being part of the athletic environment contributed to eating disordered tendencies. Body image concerns, unhealthy dieting, and stress were passed around in sport, creating somewhat of a toxic setting for athletes (Quatromoni, 2008). Another idea considered was intervention. Athletes did not respond to correctional methods the same way non-athletes responded; Becker and colleagues (2012) indicated that the athletic culture caused athletes to respond to and internalize intervention differently than non-athletes. Additionally, athletes valued nutrition intervention over body image intervention. This indicated that female collegiate athletes were potentially more likely to correct their body image concerns from a physical health and nutrition standpoint than from a mental health standpoint.

Coaches' influence on body image is a factor that only existed in the athletic arena. While collegiate female non-athletes likely had mentors and peers who influenced their body image perceptions, the combination of pressure and environment from athletic coaches only existed for athletes. Collegiate female athletes often had close relationships with their coaches, which is

arguably critical for maximized performance and enjoyment in sport. These relationships were problematic, however, when coaches placed too much emphasis on body weight, physical appearance, diet, or athletic ability and performance. In a study of collegiate coaches' communication and its influence on female athletes, researchers determined that coaches had an obvious influence on athletes' body image. Athletes reported that coaches were generally not helpful and even unsupportive in facing body image concerns and unhealthy eating patterns. Even so, coaches' comments regarding thinness, nutrition, and related issues influenced athletes' stress levels, health choices, and impression of their own athletic abilities. Athletes felt they were placed on the team based on body shape (Beckner & Record, 2016). Other studies indicated that messages from coaches create collegiate female athletes' body image by forming ideas of physical appearance and athletic performance, and as many as one third of athletes were told to change their weight for competition (Steinfeldt et al., 2012; Wells et al., 2015). Coaches could be positive role models and motivators in the lives of collegiate athletes, but they also have potential to be negative influences when too much pressure is placed on athletes as individuals.

Many studies suggested that student athletes had higher self-esteem than did non-athletes, but whether or not this contributes to body image differences was contested. High-competition events created pressure for collegiate female athletes, but these young women likely gained confidence from such events (Wells et al., 2015). One side of the argument, then, is that non-athletes were more likely to have body image concerns. Blair and colleagues (2017) indicated that non-athlete female students were at higher risk for eating disorders and had significantly more body dissatisfaction. Freshmen were especially susceptible to disordered eating and eating disorders, and this reflects Greenleaf and colleagues' (2007) findings that transitioning from high school to college – athlete or not – added significant stress to the lives of young women. It

seemed that for every study that found female athletes to have more body image concerns than non-athletes, another study existed with the opposite conclusion. Factors such as comparison, conformity, coping methods, athlete traits, objectification, eating disorder tendencies, and coach influence contributed to body image differences between athletes and non-athletes. However, the claim that one group suffers significantly more than the other was not supported by existing data.

**Objective Four: To assess the nutritional habits of collegiate female athletes in relation to their body image**

Nutrition, though frequently overlooked and underestimated, is a critical component of collegiate athletics. In order to feel well, perform well, and lead healthy lives, female collegiate athletes must provide their bodies with proper fuel and enough calories to sustain their overly active lifestyles. Sadly, for young women who become preoccupied with body image concerns, sound eating may become obsolete. Rather than adhering to hydration and electrolyte needs, energy, and more long-lasting health complications like irregular heart rate and blood pressure, some athletes sacrifice nutrition to achieve a certain weight or physique, often resulting in the infamous female athlete triad (Wells et al., 2015). Restricted eating and weight control are dangerous habits, particularly for athletes. Various intervention practices have potential to educate collegiate female athletes and correct unhealthy tendencies. Many athletes likely do not understand their bodies' needs (R. Zakrajsek, personal communication, March 6, 2018). Not all nutrition research on collegiate female athletes is so bleak; many studies have found that athletes take care of themselves and value food and nutrition. In order to keep collegiate female athletes healthy and competitive, the athletic community must emphasize the importance of nutrition.

The female athlete triad seemed to be prevalent and widely discussed in women's collegiate athletics. Classified as a disorder which includes low bone density and osteoporosis, abnormal menstrual function, and disordered eating, the female athlete triad was a derivative of

body image concerns and poor nutrition patterns (Zawila, Steib, & Hoogenboom, 2003; Thompson, n. d.). When female athletes did not consume enough calories, or enough of the right kind of calories, their bodies were not able to handle high intensity training and competition. Low body fat percentage created menstrual dysfunction, and an absence of periods combined with a lack of nutrients caused low bone density, often leading to stress fractures upon repetitive impact. Nutrition was determined one of the best prevention and recovery methods for the female athlete triad, though some female athletes engaged in unhealthy routines (Zawila et al., 2003). Athletes had different methods to control weight and shape; several of these methods were surprising and dangerous. Binge eating and vomiting, closely associated with eating disorders, were common weight control methods. Additionally, athletes admitted to taking diuretics, diet pills, and laxatives to expedite weight loss (Torres-McGehee et al., 2011).

Restricted eating, also called dietary restraint and disordered eating, did not necessarily indicate an eating disorder but was nonetheless a sign of severe body image concerns and a precursor for more severe health problems. Studies suggested that when female collegiate athletes chose foods to eat, selections were based more heavily on body image perceptions than on the caloric content or nutritional value of the food (Zawila et al., 2003). According to Anderson and colleagues (2012), dietary restraint for female collegiate athletes was the “intention to engage in dieting or restricting their food intake” (p. 24) which was often in effort to lose weight; the competitive training environment that exists in collegiate athletics may have reinforced the issue. Strict dieting that supplemented training also subjected collegiate female athletes to inadequate nutrition and injury, and thus the female athlete triad (Quatromoni, 2008). Investigators reported varying percentages of athletes who engaged in restricted eating. In one study, 13% of athletes reported skipping meals and nearly 17% admitted to avoiding certain

foods, although skipping foods could have been due to allergen concerns (Wells et al., 2015). In another study, more than half of subjects were found to have disordered eating patterns; many of these young women also failed to recognize the potential dangers in their eating habits (Quatromoni, 2008). Sport-related pressure did not seem to increase the occurrence of restricted eating when comparing the competitive season to the off-season, but evidence suggested that such habits may span across seasons (Anderson et al., 2012). Restricted eating was a serious concern, especially when athletes did not understand the body's nutrition needs.

Weight control was closely related to restricted eating; weight concerns were often targeted with dieting and other weight-loss methods. Zawila and colleagues (2003) reported that body image concerns – specifically weight and appearance – were more important to athletes than performance; this could have been due to athletes basing their athletic abilities on physical characteristics. As many as 78% of collegiate female athletes engaged in weight control methods, and 26% of athletes reported trying to lose weight (Wells et al., 2015). As previously discussed, athletes received countless messages from peers, media, and coaches about body size. This was likely to create body weight concerns and convince female athletes they needed to lose weight; thus, they engaged in food restriction and excessive exercise. Collegiate training is undoubtedly enough to keep young women physically fit and active, but female athletes admitted to exercising on their own in order to maintain or achieve a thin shape or lose weight (Beckner & Record, 2016). More than half of athletes in a study devoted at least 15 hours each week to physical conditioning; this does not include time competing. In the same study, nearly 70% of subjects were concerned about the life-long consequences of intensive collegiate training and competition (“Body Image Confidential”, 2017). Wells and colleagues (2015) found 62% of athletes to exercise in addition to their normally scheduled practice time, suggesting these

athletes were working out for reasons beyond athletics. However, weight control methods in collegiate female athletes were often excused or covered up. For example, athletes claimed to have schedules too busy to eat full meals. Others only ate certain foods due to superstition or routine (Wells et al., 2015). As body image concerns persist among collegiate athletes, so will weight control methods which are potentially dangerous; this is a devastating correlation, as the high percentage of athletes using weight control methods was relatively consistent across studies.

Providing resources to collegiate female athletes could reduce the prevalence of body image concerns and unhealthy eating. Competitive athletes often had a sound understanding of nutrition compared to non-athletes, but body image concerns sometimes caused athletes to ignore their knowledge or consider themselves exceptions (Blair et al., 2017). Quatromoni (2008) stated, “Descriptive data collected during routine clinical assessment in the first 2 years of the sports nutrition service clearly demonstrate the need for nutrition services in college athletics” (p. 690). Approximately 68% of NCAA female athletes reported having a treatment resource through their university’s athletic department, and 25% had specific classes for eating disorder prevention (McLester et al., 2014). When considering nutritional education resources for athletes, studies suggested that quality trumped quantity; for example, athletes had access to numerous articles, blogs, and peer and coach knowledge, but learning from nutritional professionals or athletic trainers was likely more effective (Zawila et al., 2003).

In a study on nutrition intervention in collegiate female athletes, more than 70% of consultations were about disordered eating. These athletes reported challenges such as “chronic dieting, dissatisfaction with body weight...weight gain during the off season...pressures of the sports environment...” (Quatromoni, 2008, p. 689). While these counseling consultations proved beneficial and corrective, the biggest obstacle was perhaps convincing athletes to get help. Some

athletes were anxious about speaking with a nutrition professional or keeping track of their food intake, and there seemed to be a stigma surrounding treatment (Beckner & Record, 2016; Thompson, n. d.). In order for intervention to be effective, counselors must be knowledgeable about sport nutrition. Furthermore, athletes should be assured that their athletic ability, potential, and worth are not contingent on body weight or physical appearance (Thompson, n. d.). Collegiate female athletes were more likely to take advantage of intervention when resources were readily available, approachable, and supportive of athletes' true needs and lifestyle.

Ample research found positive findings regarding collegiate female athletes, nutrition, and body image. McLester (2015) indicated that less than seven percent of athletes were susceptible to anorexia, less than two percent were susceptible to bulimia, and less than 10% had low levels of self-esteem. Additionally, nearly 90% of athletes in the study reported high body satisfaction. Similarly, athletes seemed to engage less in body surveillance, or body preoccupation, than non-athletes did, and many ignored athletic and feminine stereotypes in order to focus on their own needs (Varnes et al., 2015). Finally, collegiate female athletes themselves reported positive effects of nutrition intervention. Approximately 80% of athletes said what they know about nutrition influenced their food choices, suggesting that more knowledge among the athlete population could reduce the prevalence of eating disorders and disordered eating. Similarly, more than 90% of collegiate female athletes believed that nutrition education was the most conducive way to improve eating habits (Zawila et al., 2003).

Healthy eating can make or break a student athlete's career, but more importantly, it can make or break her lifelong wellbeing. The female athlete triad, restricted eating, and weight control are serious concerns in the athletic world, and athletes and their support staffs should be aware of the health consequences that can result if these issues are not addressed immediately

upon development. Research indicated that intervention and education were highly beneficial for athletes, but these resources must cater specifically to athletes and should contain quality, usable information. Poor body image can have negative effects on athletes' health, specifically through inadequate nutrition and eating habits. Therefore, nutrition should not be pushed aside, but should instead be at the forefront of collegiate athletes' training and sport education.

### **Outcomes of Independent Study**

#### **Analytical Procedure**

Approximately two weeks after the distribution of the new survey, recorded data was analyzed. Of the 162-recorded responses, 156 responses were useable for analysis and comparison. The six discarded surveys either contained technological errors or lacked data; in a few instances, it appeared that athletes had submitted surveys without responding to any questions. Despite discarding six responses, the new survey had one of the largest sample sizes of any literature and research included in this report. Athletes from 12 different NCAA Division I sports submitted useable responses to the survey. These sports were divided into "lean" and "non-lean," following the definitions discussed by Wells and colleagues (2015). Thus, lean sports included track and cross country, swimming and diving, dance, volleyball, and tennis, while non-lean sports included golf, soccer, basketball, softball, water polo, lacrosse, and field hockey. Data was analyzed by comparing several variables. Sport and sport type were compared against significance of body image concern, sources of pressure and body image formulation, weight control, self-esteem, and prevalence of eating disorders. Self-esteem was compared with meal patterns and nutritional habits. Analysis indicated that many, but not all, responses reflected that of the reviewed literature, further reinforcing the idea that body image is highly individualized, and athletes' responses vary within and across studies.

## Results and Discussion

One of the most significant findings of the new survey was that collegiate female athletes did not report high self-esteem levels. Preexisting literature reported that female athletes have elevated self-esteem due to confidence in sport, but in the survey, the opposite was true. Of 156 respondents, only 18 reported high self-esteem, while 36 reported low self-esteem and 102 reported normal self-esteem. More than half of athletes that reported low self-esteem were on lean sport teams. Similarly, lean sports had an increased prevalence of eating disorders; swimming, tennis, and volleyball players reported the highest prevalence of eating disorders on their teams, with 50%, while basketball and golf had the lowest prevalence of eating disorders with 0%. Despite the presence of eating disorders among athletes, a vast majority of respondents reported adequate or healthful eating habits, and only six athletes reported eating less than three times per day. While this does not necessarily indicate a minimal presence of eating disorders, it suggests that female athletes understand the criticality of nutrition for health and performance.

When asked where the most pressure comes from, nearly 40% of respondents reported “myself.” This indicated that the combination of perceived external pressure and self-inflicted stress combine to create pressure in collegiate female athletes’ lives. The next most-selected choice was “athletics” at 24%, indicating female athletes’ prioritization of Division I sport. Only 16% of respondents selected media as their greatest source of pressure. While this number was substantial, it somewhat contradicted the strength of media influence as portrayed by Varnes et al. (2015). The two greatest contributing factors of body image formulation were food intake and athletic performance, with 126 athletes selecting each choice. The third most-selected factor was body weight. Food intake was perhaps the most interesting factor, as reviewed studies did not

explore in depth the significance of dietary choice on body image. This suggests that further research should be done to improve understanding of diet's influence on body image.

Weight appeared to be a significant issue among athletes and across sports. More than 20% of athletes, including more than half of volleyball players, said they felt pressure from a coach or trainer to lose weight; only seven athletes felt weight-related pressure from their teammates. Approximately 60% of athletes in the study indicated they had recently tried to lose weight, including 19 of 42 track and field/cross country athletes and 16 of 21 soccer players. About one third of survey respondents said they avoid weighing themselves, including seven out of 11 lacrosse athletes. As lacrosse is a non-lean sport, this indicates that weight-related concerns are not limited to the lean sport type. Nearly one fourth of respondents weighed themselves daily, including about half of soccer players. However, soccer players may participate in daily weigh-ins as part of team protocol for training and weight lifting.

Soccer was the sport that stood out the most as defying both stereotypes and pre-existing research. As a non-lean sport, athletes were expected to have normal or high self-esteem and not be overly concerned with their weight. However, only one of 21 soccer players reported high self-esteem, while ten reported low and ten reported normal self-esteem. More than three fourths of the soccer players also indicated they had recently tried to lose weight. Weight preoccupation relates closely with low self-esteem, so the two variables are likely related.

Several findings from this new survey agreed with previous data, including the significant difference between lean and non-lean sports and the presence of eating disorders in female collegiate sport. However, other findings countered previous studies. Most prominently, female athletes in the survey did not report high levels of self-esteem, and the assumptions about lean and non-lean sports were not all supported. Furthermore, the survey confirmed a

relationship between eating habits and body image, which is a relationship that should be analyzed more in the future. This independent study served to supplement literature and provided a current view from active collegiate female athletes at the NCAA Division I level.

## **Conclusion**

### **Summary of Findings**

This research report, with both literature review and the development of a new survey, analyzed body image's function in the lives of collegiate female athletes within the NCAA. Four objectives worked to define body image and related terminology, explore the pressures of collegiate sport and compare them to pressures that affect non-athletes, and establish the relationship between nutrition habits and body image. The ultimate goal of this research was to determine the sources of stress, both internal and external, that create and skew female athletes' self-perceptions. By targeting sources of pressure in the lives of female athletes, scientists and sport professionals can better understand how to help athletes, as well as non-athletes, cope with body image concerns ranging from minor to debilitating.

Since body image is highly individualized, and is furthermore influenced by varying stimuli in the lives of athletes, pinpointing exact sources of body image pressure was challenging. However, when considering both literature review and the new study, the most prevalent source of body image influence was the athletes' internalization of perceived stress combined from external sources and personal habits and characteristics. Major sources of external pressure were athletic environment, media objectification, coaches, and body comparison to athlete and non-athlete peers. Athletic environment was particularly influential, as the discrepancy between lean and non-lean sports and upper and lower divisions contributed to body image in different ways. Influential personal traits were eating habits, sport confidence,

perfectionism, and self-esteem. The way an athlete internalized these pressures either increased or decreased her chance of developing body image concerns, which often result in physical and mental health problems such as eating disorders, depression, and the female athlete triad.

### **Future Implications**

The findings of this study lead to further possible research. While much data reviewed discussed upper and lower competition level (i.e. Division I and Division III), the middle NCAA division, Division II, was seldom discussed. Similarly, the new survey only addressed female athletes at the Division I level. Therefore, more research should be done on body image among Division II athletes, and whether athletes at the middle level share more characteristics with athletes in Division I or Division III.

Another area for further research is the interaction between dietary habits and body image. In the new study, more than three fourths of respondents admitted to altering their food intake due to body image concerns. Nearly 60% of athletes indicated that eating well improves body image while 35% indicated that eating poorly hurts body image. Furthermore, very few athletes said that eating habits had no influence on body image, reinforcing the idea that a relationship indeed exists between diet and self-perception. Research on this relationship is limited and begs to be expanded upon. By better understanding the influence of dietary habits and need for nutrition education, in addition to increasing body image concern awareness and the necessity of a healthful, welcoming sport environment, coaches, trainers, and athletes themselves have the potential to reduce body image concerns and related health consequences among not only collegiate female athletes, but among young women as a population.

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