

Self-Perceptions of College Female Athletes, Exercisers, and Non-Exercisers  
of their Sport Competence, Physical Conditioning, Body Attractiveness, Physical Strength, and

Overall Physical Self-Worth

By

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### **Abstract**

The purpose of this study was to further understand physical self-perception differences between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers and investigate the influence of each of the four subdomains (i.e., sport competence, physical conditioning, body attractiveness, and physical strength) on college females' overall physical self-worth. The Physical Self-Perception Profile was used to survey female college students attending one Midwestern University. Self-perceptions of the subdomains of physical strength and body attractiveness were statistically significant positive predictors of female college students' overall physical self-worth for all three groups. That is, female athletes, exercisers, and non-exercisers who perceived their body attractiveness and physical strength positively were more likely to perceive their overall physical self-worth more positively. However, no statistically significant differences were reported on the subdomain of body attractiveness among any of the three groups. Statistically significant differences were reported between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers on self-perceptions of their physical strength. Therefore, it was concluded that overall physical self-worth could be improved when exercise programs and sport competition focused on the development of physical strength.

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## Chapter 1

### Introduction

Many females perceive their bodies in a negative manner during the college years, even though most outwardly appear confident and feel they are popular. Not to have confidence in one's body is to lose confidence in oneself, according to DeBeauvoir (as cited in Pipher, 1994). Many college females, however, lose confidence in their bodies when trying to conform to societal expectations for femininity centered on a female's body, its appearance, and its presumed heterosexuality (Bartky, 1998). Since females are socialized to believe the feminine ideal of attractiveness is attainable and expected, they often base self-perceptions of attractiveness on this unrealistic ideal. Unfortunately, false expectations often result in real consequences, such as negative physical self-perceptions, among female college students.

Traditional gender roles, one factor influencing college females, emphasize physical attractiveness and a thin ideal as defining characteristics of femininity (Rodin, Silberstein, & Striegel-Moore, 1985). Socialization by parents, peers, and the media about gender roles throughout childhood and adolescence reinforce the importance of physical attractiveness to female adolescents, as the most recognizable and revered females in Western culture are known more for looks than their skills, intelligence, or abilities (Smolak & Murnen, 2001). As females develop and mature, gender role socialization reinforces societal expectations for attractiveness. For example, females who lack traditional feminine characteristics often experience a lack of success socially and lessening of popularity during the adolescent years. Pressures to conform to feminine stereotypes may become even more problematic when females transition into the emerging adult years while in college.

Societal expectations for femininity have the potential to negatively impact identity development among college-aged females, especially when femininity is synonymous with physical attractiveness. Many females perceive their physical selves negatively during the emerging adult years even though their bodies are no longer changing developmentally. Garner (1997) gives one potential reason for the emphasis placed on appearance by college females as they explore potential life paths.

Our body perceptions, feelings, and beliefs govern our life plan—who we meet, who we marry, the nature of interactions, our day-to-day comfort level. Indeed, our body is our personal billboard, providing others with first-and sometimes only-impressions. (p. 1)

Therefore, many females perceive attractive bodies as essential during the emerging adult years and often strive to be perceived as attractive and beautiful even though it may be potentially detrimental to their physical self-esteem, which is used interchangeably with physical self-worth (Fox, 1997a). Some female college student subgroups, however, may not be as obsessed by an over-emphasis on attractiveness due to higher physical self-perceptions and physical self-esteem.

Sport competition and exercise participation are likely to provide female college students with additional opportunities to increase physical self-esteem that mediates expectations of attractiveness. This is referred to as the skill enhancement hypothesis or the assumption that involvement in physical activities and improvement in skill, knowledge, fitness, or health will enhance self-perceptions (Fox, 1997a). Female athletes' emphasis on physical abilities, for example, contributes to greater physical self-esteem and positive self-perceptions about their bodies (Bowker, 2006). Additionally, exercise participation (defined as regular participation in

moderate physical activity on five days of each week or vigorous physical activity participation for a minimum of three days each week or a combination of both by the American College of Sports Medicine) (ACSM) (Haskell et al., 2007) contributes to positive changes in an individual's perception of physical self and identity (Fox, 2000). On the other hand, some researchers contend that exercise participation results in negative self-perceptions of appearance and negative body images (Kennedy & Reis, 1995; Lowery et al., 2001). Even with research results mixed about the influence of exercise on physical self-perceptions, positive self-perceptions developed during sport competition and exercise participation, such as improved strength and increased aerobic function, often replace a dependency on compliance with societal gender roles about attractiveness. As a result, some female athletes and exercisers may be less likely than other college females to pursue unhealthy methods to improve self-perceptions of attractiveness.

The physical self-esteem of female athletes and exercisers allows for a variety of positive self-perceptions through the mastery of physical skills. For example, some athletes and exercisers are not as dependent on self-perceptions of physical attractiveness for enhancement of self-esteem as are female non-exercisers (Sonstroem, 1997), thus lessening the likelihood of engaging in health-risk behaviors used to enhance physical self-perceptions. Past studies demonstrate that female athletes participate in fewer health-risk behaviors than do other female college students (Hildebrand, Johnson, & Bogle, 2001; Kokotailo, Koscik, Henry, Fleming, & Landry, 1998; Reinking & Alexander, 2005; Yusko, Buckman, White, & Pandina, 2008). These results suggest that female athletes are more likely to increase their physical self-esteem through attainment of physical skills and less likely to participate in health-risk behaviors to improve self-perceptions of body attractiveness.

A lack of research exists on the relationship between female exercisers and their participation in health-risk behaviors. However, body dissatisfaction, which is negatively associated with exercise participation among female exercisers, is one of the primary risk factors for the health-risk behavior of disordered eating (Davis, 2002; Polivy & Herman, 2002). Exercise participation may decrease physical self-esteem, according to Davis (2002); this contradicts the common belief that when people exercise more often they feel better about themselves. However, many females who participate in exercise and compete in sports receive more opportunities to perceive their physical selves positively compared to non-active female college students.

Exercise participation and sport competition contribute positively to females' physical self-esteem by improving self-perceptions of physical competence and abilities. Past studies, however, most often compared differences in physical self-perceptions and overall physical self-esteem between males and females rather than looked at various groups of female college students (Fox & Corbin, 1989; Fox & Vehenekamp, 1990). Since the physical self-esteem of female college students may be related to participation in health-risk behaviors (Hildebrand et al., 2001; Kokotailo et al., 1998; Reinking & Alexander, 2005; Yusko et al., 2008), it is important to examine why some females perceive their physical selves more favorably than do others. To further understand if sport competition or exercise participation is beneficial to perceptions of physical self-esteem among female college students, self-perceptions in the physical domain need to be compared among female intercollegiate athletes, female exercisers, and female non-exercisers.

## Statement of the Problem

Perceptions of physical self-esteem of college females are linked with other aspects of development during the college years; for example, negative appraisals of the physical self and high levels of body dissatisfaction may inhibit psychosocial development among college females (Harris, 1995). Consequently, college females with lower physical self-esteem may struggle to explore and form their identities, the main developmental task of the emerging adult life stage (Chickering as cited in Evans, Forney, Guido, Patton, & Renn, 2010). A lack of physical self-esteem may hinder identity explorations because experiences of meeting new people and trying out potential career paths allow females to answer the question, “What kind of person am I?” (Arnett, 2004, p. 9). As a result, many females who perceive themselves as less attractive may not pursue potential friendships, romantic relationships, or potential career paths thereby decreasing the experiences they can reflect on to help shape their identities. Using strategies for combating this problem may be vital for females’ development during emerging adulthood.

Participation by college females in regular exercise and sport competition improves positive self-perceptions in the physical domain (Fox, 1997a; Fox, 2000; Krane, Choi, Baird, Aimar, & Kauer, 2004). However, other research (Fox & Corbin, 1989; Hayes, Crocker, & Kowalski, 1999; Kowalski, Crocker, & Kowalski, 2001) suggests that exercise only contributes minimally to physical self-esteem among college females by increasing self-perceptions of physical conditioning, which is one of the four subdomains of overall physical self-esteem. According to Kennedy and Reis (1995), college female exercisers do not perceive their physical appearances any more positively than do college female non-exercisers. Unless these females engage in group exercise classes or exercise with a friend, exercise participation is likely to continue to feel isolating. Even if some females enjoy exercising alone, it may lead to the

purpose of exercise centering more on burning calories and losing weight to help meet societal expectations than for improvement in health and wellness. Sport competition especially in connection with a team improves self-perceptions of physical competence as well as social connectedness (Armstrong & Oomen-Early, 2009).

While female athletes recognize sport competition as a primary factor in learning to appreciate and accept their bodies (Blinde, Taub, & Han, 1993; Krane et al., 2004), physical self-esteem has not been examined among female athletes using the Physical Self-Perception Profile (PSP). Do female athletes perceive their physical self-esteem differently than do college female exercisers and non-exercisers? Female athletes may view their physical bodies as products of commitment, hard work, and sacrifice, while female non-athletes and female exercisers may focus more on attractiveness and ways to improve their physical appearances. A gap exists in the literature concerning any differences in physical self-esteem among female athletes, exercisers, and non-exercisers.

This void exists despite the fact that college females report unhealthy levels of body image dissatisfaction, concerns about weight, and unhappiness with physical appearances (Harris, 1995; Lowery et al., 2005; Mintz & Betz, 1988). This study will investigate differences in physical self-perceptions of sport competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth between each of these three groups: female athletes and female exercisers; female athletes and female non-exercisers; and female exercisers and female non-exercisers.

## **Rationale for the Study**

The PSPP is a widely accepted measure for investigating the nature of the relationships between females' self-perceptions and their involvement in or lack of sport competition and exercise participation (Fox, 1990). The PSPP simultaneously measures multiple self-perceptions of overall physical self-worth within four subdomains of sport competence, physical conditioning, body attractiveness, and physical strength and the overall domain of overall physical self-worth. Fox and Corbin (1989) created the PSPP to learn more about the relationship between college students' physical self-perceptions and their involvement in exercise participation and sport competition. Research findings using the PSPP have consistently demonstrated lower scores for females when compared with males on the four subdomains and the one domain of overall self-worth (Fox & Corbin, 1989; Fox & Vehnekamp, 1990; Hayes et al., 1999; Kowalski et al, 2001).

This research study is important because the PSPP has not been utilized to compare physical self-perceptions of female intercollegiate athletes and female exercisers. No studies have used the PSPP to examine physical self-perceptions among female athletes and to compare three groups of female college students. However, Hayes et al. (1999) and Kowalski et al. (2001) did report differences between female exercisers and female non-exercisers but only on the PSPP subscale of physical conditioning. These authors and Fox and Corbin (1989) report body attractiveness as the most important subdomain involved in explaining physical self-esteem self-perceptions among college females. As a result of these findings, Hayes et al. (1999) suggests that female exercisers are primarily concerned with meeting societal expectations about their bodies' attractiveness instead of improving overall health and wellness. Therefore, there is a need to further understand the relationships of the four subdomain subscales to the domain

subscale of overall physical self-worth by comparing the following groups of college females to each other: female athletes; female exercisers; and female non-exercisers.

It is possible that when females care about improvement of physical competencies during sport competition or exercise participation, they learn to appreciate their physical selves for more than their perceived attractiveness resulting in more positive physical self-worth. However, without sport competition or exercise participation to improve self-perceptions of physical competencies or physical abilities, some female non-exercisers may be more likely to perceive the body attractiveness subdomain as a major contributing factor to their physical self-esteem. The results of this study may lead to a better understanding of the way female athletes, exercisers, and non-exercisers develop self-perceptions in the four PSPP subdomains to form their overall physical self-worth.

### **Purpose of Study and Research Questions**

The purpose of this study is to determine whether there are significant differences in the domain of overall physical self-worth and the subdomains of sport competence, physical conditioning, body attractiveness, and physical strength among three groups of college females: athletes; exercisers (who engage in regular physical activity as defined by the ACSM); and non-exercisers (who do not engage in regular physical activity as defined by the ACSM).

Additionally, the relationships of the four subdomains to the domain of physical self-worth will be examined for three subgroups. Specifically, this study sought to answer the following research questions:

1. What is the relationship between the four subdomains (sport competence; physical conditioning; body attractiveness; and physical strength) and overall physical self-worth for

athletes compared to exercisers, athletes compared to non-exercisers, and exercisers compared with non-exercisers?

2. Are female intercollegiate athletes different in their self-perceptions of sport competence from college females who participate in regular physical activity as defined by the ACSM and measured by the PSPP?
3. Are female intercollegiate athletes different in their self-perceptions of sport competence from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
4. Are college females who participate in regular physical activity as defined by the ACSM different in their self-perceptions of sport competence from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
5. Are female intercollegiate athletes different in their self-perceptions of physical conditioning from college females who participate in regular physical activity as defined by the ACSM and measured by the PSPP?
6. Are female intercollegiate athletes different in their self-perceptions of physical conditioning from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
7. Are college females who participate in regular physical activity as defined by the ACSM different in their self-perceptions of physical conditioning from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
8. Are female intercollegiate athletes different in their self-perceptions of body attractiveness from college females who participate in regular physical activity as defined by the ACSM and measured by the PSPP?

9. Are female intercollegiate athletes different in their self-perceptions of body attractiveness from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
10. Are college females who participate in regular physical activity as defined by the ACSM different in their self-perceptions of body attractiveness from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
11. Are female intercollegiate athletes different in their self-perceptions of physical strength from college females who engage in regular physical activity as defined by the ACSM and measured by the Physical Self Perception Profile?
12. Are female intercollegiate athletes different in their self-perceptions of physical strength from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
13. Are college females who participate in regular physical activity as defined by the ACSM different in their self-perceptions of physical strength from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
14. Are female intercollegiate athletes different in their self-perceptions of overall physical self-worth from college females who participate in regular physical activity as defined by the ACSM as measured on the PSPP?
15. Are female intercollegiate athletes different in their self-perceptions of overall physical self-worth from college females who do not participate in regular physical activity as defined by the ACSM and measured by the PSPP?
16. Are college females who participate in regular physical activity as defined by the ACSM different in their self-perceptions of overall physical self-worth from college females who do

not participate in regular physical activity as defined by the ACSM and measured by the PSPP?

### **Definition of Terms**

- *Exerciser*: Female college student who engages in regular physical activity (30 minutes of moderate physical activity 5 days per week or 20 minutes of vigorous physical activity 3 days per week) as defined by the ACSM.
- *Feminine ideal*: beautiful, small, and thin.
- *Identity*: a stable, consistent and reliable sense of who one is and what one stands for in the world. It integrates one's meaning to oneself and to others; it provides a match between what one regards as central to oneself and how one is viewed by significant others in one's life.
- *Intercollegiate athlete*: participates on a sport team sponsored by a college.
- *Non-exerciser*: Female college student who does not engage in regular physical activity (30 minutes of moderate physical activity 5 days per week or 20 minutes of vigorous physical activity 3 days per week) as defined by the ACSM.
- *Perceived competence*: A statement of personal ability that generalizes across a domain such as sport, scholarship, or work.
- *Self-perceptions*: An umbrella term that denotes all types of self-referent statements about the self, from global to those more specific in content.
- *Self-esteem*: awareness of goods possessed by the self and represents how positive individuals feel about themselves in general.
- *Self-worth*: used interchangeably with self-esteem.

- *Socialization*: Refers to processes whereby naïve individuals are taught the skills, behavior patterns, values, and motivations needed for competent functioning in the culture in which the child is growing up.

### **Limitations**

The participants in this study were limited to a convenience sample from one college. Varsity athletes, university housing residents, and students enrolled in classes within the Department of Health, Sport, and Exercise Sciences (HSES) were invited to participate because of their accessibility to the investigator. The lack of diversity of the participants limits the generalizability to all female college students. For example, some students enrolled in classes within the HSES department could be pursuing academic fields that promote exercise and physical activity. These females could be students who previously enjoyed or experienced successes in sports or recreational physical activities, which may increase the likelihood of positive responses to questions about physical self-perceptions. However, the classes chosen to survey may mitigate this limitation because their enrollment includes students majoring in subjects in other departments.

Female college students who are varsity athletes may have some similarities as well as some differences. While varsity athletes may be lean and non-lean, they will be considered as one group for this study because benefits from sport participation reported in the literature typically do not divide athletes in two subgroups. Additionally, the main purpose of this study is focused on analyzing group differences of female athletes, exercisers, and non-exercisers.

Finally, this study will not draw cause-and-effect conclusions but will be limited to exploring the directional effect of exercise participation and sport competition on female college students' self-perceptions in the physical domain. Therefore, research results will not determine

whether improved physical self-worth among college females resulted in higher levels of exercise participation and sport competition, or whether sport competition or exercise participation caused an improvement in overall physical self-worth.

### **Significance of the Study**

The way some females feel about their bodies or physical self-esteem influences decisions they make during the college years. Fox and Corbin (1989) studied college females' physical self-esteem to further understand why they did or did not engage in exercise and sport. More recently, Fox (1997b) noted an expanding belief among individuals in health and educational agencies that involvement in exercise and sport stretches beyond the physical to the enhancement of quality of life and mental well-being. For example, Harris (1995) found that when college females are more satisfied with specific body parts and have more favorable feelings toward their appearances, they also show more advancement in educational, career, and life planning as well as overall purpose in life. Whether or not females perceive their physical selves positively impacts identity explorations in love and work during the emerging adulthood years.

College females who perceive their bodies negatively tend to struggle with normal developmental tasks during college (Harris, 1995). As a result, identity formation, the primary developmental task of the emerging adult life stage, may be impeded when females perceive their physical appearances negatively. For example, one college female may not pursue her desire to run for Student Senate because she is embarrassed about her weight; another female may not pursue a competitive summer internship because a lack of physical self-esteem is reducing her self-confidence. Therefore, factors contributing to college females' physical self-esteem are important to understand and influence positively so identity formation will not be

hindered during emerging adulthood. Through increased overall physical self-esteem, females may be less likely to participate in health-risk behaviors believed to enhance self-perceptions of physical self-esteem.

Health-risk behavior participation, such as using alcohol, tobacco, and drugs, eating disorders, and engaging in risky sexual behaviors, are used by some females to heighten their perceptions of attractiveness. However, some athletes and female exercisers whose physical self-esteem is characterized by positive self-perceptions of attractiveness and physical abilities may engage in fewer health-risk behaviors than do female non-exercisers. Body attractiveness, though, remains the most important subdomain in the measurement of physical self-esteem among college females according to Delene and Browgowicz (1990) and Fox and Corbin (1989). Since Delene and Browgowicz (1990) found that 80% of college females report body dissatisfaction, it is likely that many of these females are searching for additional methods to improve self-perceptions of attractiveness to combat low physical self-esteem. PSPP data may shed light on whether sport competition, exercise participation, or non-exercise participation positively affects perceptions of physical self-esteem of college females.

This study is noteworthy for its potential implications on the health and development of female college students. Through the findings of this study, it will be better understood if females attending one college who regularly participate in exercise or compete in intercollegiate athletics demonstrate higher physical self-perceptions of overall physical self-worth and sport competence, physical conditioning, body attractiveness, and physical strength than those who do not. If the data confirm that female exercisers do not score any higher than female non-exercisers on the subdomains of the PSPP, physical activity and exercise options for college females may need to be reexamined and possibly broadened. If exercise participation provides

positive benefits for female college students' physical self-esteem, this finding will support the claim that exercise participation during college is beneficial in ways other than physically.

Finally, this study will add to the literature because perceptions of physical self-esteem among female athletes have never been measured using the PSPP. Even though some researchers (Blinde et al., 1993; Krane et al., 2004) contend that sport competition results in feelings of confidence among college female athletes, the PSPP has never been used to investigate whether engaging in intercollegiate athletic competition positively or negatively influences overall physical self-worth and its four subdomains of sport competence, physical conditioning, body attractiveness, and physical strength. If female athletes score higher on the PSPP than do female exercisers and female non-exercisers, this would support providing college females with more competitive sport opportunities, such as intramurals or club sports, that focus on developing sport competence, physical conditioning, body attractiveness, and physical strength. While this may not be possible for all females, this information could encourage females to add or increase their involvement in competitive sports.

## Chapter 2

### Review of Literature

The self-worth of many college females has become dependent on physical self-perceptions or self-referent statements about the physical self (Fox, 1997a). According to Bordo (1993), females in our society have been constrained by a contemporary ideal of femininity. Females who perceived discrepancies between a societal ideal of femininity and their personal attractiveness have experienced decreased self-esteem (Jackson, 2002). Unfortunately, many females' bodies were not biologically suited to conform to a small, thin, and beautiful feminine ideal. As a result, many females developed negative self-perceptions and decreased their overall physical self-esteem because of inability to conform to a socially constructed standard (Bordo, 1993; Murray & Matheson, 1993).

Beginning early in life, parents, peers, and the media promoted feminine characteristics, such as attractiveness and success in relationships, while discouraging strength, aggressiveness, independence, rough-mindedness, and muscularity (Cantor & Bernay, 1992; Pipher, 1994). Girls learned early in life that beauty was linked to femininity, and efforts to enhance physical attractiveness served to affirm feminine identities (Striegel-Moore & Marcus, 1995). As a result, when females' characteristics and behaviors were not aligned with gender role expectations, females often were viewed more negatively and less popular with peers. Since females grew up constantly surrounded by messages emphasizing the importance of social status and physical attractiveness, these traits continued to be important to females when they transitioned into emerging adulthood.

Female college students enjoyed increased opportunities to explore their identities during emerging adulthood, a developmental life stage that encompassed 18-25 year-olds (Arnett,

2000). Before settling down to adult responsibilities, females learned more about their abilities and interests through experimenting with and exploring different career paths and romantic relationships. However, identity conflict and other common stressors during emerging adulthood often led to feelings of instability and uncertainty.

Some females experienced feelings of instability and uncertainty from moving forward and backward between adolescence and adulthood. Other college females experienced similar tensions from pursuing an unrealistic ideal of attractiveness they had been socialized to believe was necessary for success in life. As a result, many females engaged in unhealthy coping mechanisms, such as health-risk behaviors, to improve self-perceptions of attractiveness and overall physical self-esteem.

Health-risk behaviors have been used by many college females to cope with dilemmas and challenges during the emerging adult life stage. Some females relied on external validations of their physical appearances to combat wavering self-esteem (Crocker, 2002). By using self-perceptions of attractiveness, these females bolstered their self-worth based on perceived societal behaviors of confident college women. Therefore, the instability of the emerging adulthood life stage encouraged females to use risky behaviors to feel more positively about themselves. Many college females consumed alcohol, smoked cigarettes, used drugs, and engaged in risky sexual behaviors and disordered eating to increase physical self-esteem because they believed participating in these behaviors enhanced self-perceptions of physical attractiveness. More positively, some college females escaped the desire to receive feedback about physical appearances by developing pride in other aspects of their physical selves.

One select group of female college students, female athletes, benefited physically, socially, and emotionally during the emerging adult college years because of and through sport

competition. Female athletes credited intercollegiate sport competition with developing an increased sense of self (Fox, 2000; Melendez, 2010), establishing positive social networks (Miller & Kerr, 2002), and enhancing life skills or coping mechanisms (Melendez, 2010). Similar benefits were reported for female college students who participated in regular exercise (Haskell et al., 2007). Sport competition and exercise participation provided opportunities for females to engage in activities that promoted physical competencies and lessened the influence of societal expectations for physical attractiveness. These benefits improved physical self-esteem among female athletes (Blinde et al., 1993; Krane et al., 2004; Ross & Shinenew, 2008) and female exercisers (Fox, 2000) and decreased athletes' and exercisers' participation in health-risk behaviors (Fox, 2000; Hildebrand et al., 2001; Kokotailo et al., 1998; Reinking & Alexander, 2005; Yusko et al., 2008).

Given the strong association between self-esteem and perceived physical attractiveness, an increased understanding of the different types of physical self-perceptions that contributed to females' physical self-esteem was warranted. The PSPP was developed to measure overall physical self-worth as well as the four subdomains of sport competence, physical conditioning, body attractiveness, and physical strength. Fox and Corbin (1989) proposed that a more detailed measure of the physical domain of self-esteem would increase the understanding of physical self-perceptions and provide valuable information about the behaviors and decisions made by college females about whether to participate in physical activities and sports. More recently, physical self-perceptions have been reported to impact the psychosocial development of female college students (Harris, 1995), which further supported the use of the PSPP to study physical self-perceptions among various groups of college females.

This review of literature will begin by examining the social agents influencing females from a young age to explicate the societal messages received and internalized by young girls and adolescents. Then, the developmental life stage for individuals 18-25, called emerging adulthood, will be described to show the obstacles and stressors facing college females, especially as they relate to identity explorations. The next section will provide examples of health-risk behaviors engaged in by college females searching for ways to increase physical and social self-esteem relative to physical self-worth while experiencing the highs and lows of identity explorations. The remainder of the literature review will discuss how being an athlete or exerciser benefited college females' social and psychological development, improved physical self-esteem, and reduced participation in health-risk behaviors. The literature review will conclude by describing use of the PSPP to compare overall physical self-esteem, sport competence, physical conditioning, body attractiveness, and physical strength among female intercollegiate athletes, college female exercisers, and college female non-exercisers.

### **Gender Roles and Growing Up Female**

During childhood and adolescence, girls have been socialized to adopt feminine behaviors and characteristics. "Socialization refers to processes whereby naïve individuals are taught the skills, behavior patterns, values, and motivations needed for competent functioning in the culture in which the child is growing up" (Maccoby, 2007, p. 140). Undeniably, socialization has differed by gender. Beginning at birth and continuing throughout their lives, females have been exposed to gender stereotypes constraining them to a spectrum of traditional feminine behaviors, such as being affectionate, sympathetic, sensitive to the needs of others, understanding, compassionate, warm, tender, fond of children, loyal, soft-spoken, gullible, and even childlike (Cantor & Bernay, 1992). Because boys and girls have been socialized

differently, they often developed recreational interests and career paths that promoted gender-based masculinity or femininity.

Through the socialization of traditional gender roles, females learned from an early age that feminine women were more accepted, appreciated, and respected in Western culture (Bordo, 1993). The feminine ideal socialized girls through gender-role stereotypes that emphasized beauty, petiteness, thinness, and weakness (Roth & Basow, 2004). By adolescence, many females had learned to base their self-esteem on perceived physical attractiveness and social acceptance characterized by this feminine ideal (Harter, 1990; Shapka & Keating, 2005). According to Pipher (1994), most females were conflicted between conforming to female gender roles and trying to be true to personal identities; this conflict often resulted in decreased self-esteem, sadness, and anger. Therefore, exploring the ways females have been socialized and exposed to gender stereotypes by parents, peers, and the media is essential for understanding what it meant to grow up as a female. The primary social influences of parents, peers, the media, and gender roles will be explored in greater depth in the following sections (Coakley, 2010; Lips, 1989; Power & Parke, 1986).

**Parents.** Parents have been and continue to be the primary socialization influences on children making it difficult for daughters to challenge parents who supported and reinforced traditional gender roles (Lytton & Romney, 1991; Maccoby, 1992, 2007). Parents controlled the settings during infancy and childhood in which their children spent their time and selected the people with whom their children interacted (Macoby, 1992). Most parents socialized their daughters quite differently than their sons by requiring different household chores and promoting different types of recreational activities (Greendorfer, 1993; Lytton & Romney, 1991). For example, young girls often were steered by their parents into indoor leisure activities that

reinforced femininity, such as playing house or dressing up, while many boys were encouraged to engage in aggressive outdoor activities, such as sports.

It was possible that when girls lacked exposure to traditionally masculine behaviors and activities because of restrictions in home environments, they did not develop high levels of self-esteem. For example, Eccles, Jacobs, and Harold (1990) demonstrated that parents' perceptions of children's competencies in math, English, and sports were influenced by children's genders and externally imposed gender-role stereotypic beliefs. When parents made decisions for their daughters based on gender stereotypes, females may never have had opportunities to develop feelings of competence or self-esteem in certain domains. If they pursued athletic opportunities, many girls experienced gender identity conflict for not conforming to traditional gender roles.

However, when parents encouraged their daughters to participate in a wider range of experiences that included displaying stereotypical masculine qualities, many developed higher feelings of competence and self-worth (Cantor & Bernay, 1992). These authors interviewed 25 of the most famous female political leaders in the United States about relationships with their parents. Many of them credited their mothers with socializing them to structure their identities around feminine and masculine qualities. They also mentioned the benefits of having fathers who reinforced feminine qualities while encouraging them to pursue any goals they wanted. Since famous females' parents emphasized from a young age both aggressive and nurturing characteristics, each female developed a stronger sense of self. While parents were the greatest influences of their daughters from birth to age 18, peers became more influential during adolescence (Hartup & Stevens, 1999).

**Peer Relationships.** As girls grew into adolescents, peers became stronger agents of socialization by strongly encouraging discussions about physical appearances. This type of

communication was termed fat talk, defined as “a ritualized form of speech that serves to communicate mood and feelings, define status and role, call for support, or affirm group membership” (Nichter & Vuckovic, 1994, p. 106). These authors explained that fat talk was used as a marker for group affiliation and offered opportunities for group members to obtain affirmations about physical appearances. Fat talk occurred in small and large groups of adolescents as a female called attention to her physical flaws knowing her peers would refute such comments by pointing out their imperfections. By expressing unhappiness with one’s physical appearance through the words, “I am so fat,” the social status of many females increased (Nichter & Vuckovic, 1994) because fat talk provided a medium through which social bonds developed. Some female adolescents bonded over similar dislikes for their bodies, while others engaged in fat talk because they were concerned about social acceptance and feared being ostracized by peers.

While many adolescent females called attention to physical flaws so they would be accepted by peers, they also used fat talk to denigrate or shun peers who were perceived as too beautiful or perfect (Nichter, 1991). For example, Nichter (2000) described Jen whose extreme competitions about physical appearance kept her from becoming friends with Elena. When Jen was asked whether she wanted to be a friend with Elena, she responded that Elena was too attractive and posed a threat to Jen’s self-esteem. Fat talk became a common method used to increase physical self-esteem, through soliciting positive feedback from peers or commenting negatively on others’ physical appearances. In addition to the socializing influence of peers, adolescent females received information about femininity from the media.

**Media Influences.** Sometimes called the super peer, media became a more prominent source of socialization for females during adolescence (Strasburger, Wilson, & Jordan, 2009).

Girls spent approximately eight-and-a-half hours a day exposed to media messages about how they should conform to traditional female gender roles, such as emphasizing their physical appearances (Rideout, Foehner, & Roberts, 2005). From television commercials that portrayed females as attractive housekeepers to magazines with a plethora of diet and exercise articles, the media stressed to impressionable adolescent females that having a thin body was one way to gain social acceptance and popularity (Mamay & Simpson, 1981; Rodin et al., 1985; Wiseman, Gray, Mosimann, & Ahrens, 1992). Tiggemann, Gardiner, and Slater (2000) conducted focus groups with 16 year-old females about the extent to which their self-esteem had been affected by the media's promotion of a socio-cultural thin ideal. These authors concluded, "despite knowing and believing that other characteristics such as personality were more important than physical attractiveness, the sheer volume and intensity of the media images led them to strive toward a thin ideal" (p. 655). As females strove to increase their physical attractiveness, many bought products they were told would make them more beautiful.

Corporate advertising generated a significant percentage of the images and ideas that contributed to cultural conceptions of feminine beauty. With economic profits the primary goal, the media captured the attention of adolescents by promoting products to help them attain a socio-cultural thin ideal. Since self-esteem was influenced by whether adolescent females perceived themselves as attractive in conformity with a feminine ideal, many spent money on clothing, grooming items, and weight-loss products for self-improvements. Brumberg (1998) explained how adolescents were concerned with the shape and appearance of their bodies as primary expressions of individual identities. One wrote in her diary about the increased focus on physical self-improvements. "I will try to make myself better in any way I possibly can with the help of my budget and baby-sitting money. I will lose weight, get new lenses, already got new

haircut, good makeup, new clothes and accessories” (Brumberg, 1998, p. xxi). Simply stated, the self-esteem of many females has been negatively influenced by the mass media’s encouragement of unattainable thinness and beauty.

Beginning at birth and becoming more intense during adolescence, females have been socialized to adopt feminine gender roles. Messages communicated by parents, peers, and the media assured them that being physically attractive would increase popularity and success. When females did not display socially acceptable feminine gender behaviors or were perceived as less attractive than the average female adolescent, they often were teased and ridiculed by peers. This led some females to purchase and use beauty-related products in an attempt to increase physical attractiveness, while others developed body dissatisfaction and increased feelings of sadness and anger (Brumberg, 1998; Pipher, 1994). Since females grew up bombarded by messages emphasizing the importance of social status and physical attractiveness, these traits continued to be important to females as they transitioned into adulthood.

### **Emerging Adulthood**

As the transitional time between adolescence and adulthood expanded, a new life stage emerged for 18-25 year-olds. These emerging adulthood years were characterized as a time of exploration, opportunity, challenge, and frequent change (Arnett, 2000). Even though this pivotal life stage dedicated to self-exploration was crucial for many females’ identity formation, many females felt constrained by traditional gender roles emphasizing the need for physical attractiveness. College females who lacked confidence in personal attractiveness may have felt limited because physical appearance was an important aspect of identity formation (Chickering & Reisser, 1993). Other females depended on self-perceptions of attractiveness to increase self-esteem during challenging circumstances occurring during this developmental life stage. The

emerging adulthood years have been characterized by five main features: identity exploration; instability; self-focus; in-between; and possibilities (Arnett, 2000). Each of these features will be briefly described.

**Identity Exploration.** The broadening of traditional gender roles has resulted in females having more opportunities to explore identities during emerging adulthood. Historically, females were considered adults when they married (Schlegel & Barry, 1991). However, as the median age for marriage among American females changed from 20.8 years in 1970 to 24.5 years in 1994, an increased number (53%) of females enrolled in college (Bianchi & Spain, 1996; U.S. Department of Education, 2010). Changes in lifestyle options, such as cohabitation and contraception, provided college-aged females in committed relationships with additional options besides marriage including increased time for exploration (Bianchi & Spain, 1996).

Traditional expectations for appropriate feminine identity explorations have been eroded by societal changes; these changes permitted more freedoms in identity explorations during emerging adulthood including about love and work (Arnett, 2000). While some females felt pressured to find long-term partners before college graduation because of the availability of numerous potential dating partners on college campuses and parental expectations (Arnett, 2004), others embraced these years as times to explore a variety of relationships to clarify for themselves what qualities they did not want in a relationship as well as what they wanted most. The potential for emotional and physical intimacy during college (Arnett, 2000) made it an ideal time for romantic liaisons, while explorations of long-term career paths occurred simultaneously.

Career and work explorations became more significant during the emerging adulthood years compared to adolescence because daily decisions laid the foundation for future employment (Arnett, 2004). While pursuing various career paths, many female students

discovered whether individual strengths and identities fit with potential occupational areas. Career obstacles such as family and gender that had limited females in the past were reduced leaving more time for self-explorations. Many females pursued various career options without being limited to traditional areas associated with females, such as teaching, clerical positions, nursing, and social work (Knight, Sedlacek, & Bachhuber, 1983). More females spent the emerging adult years preparing for adulthood by exploring potential work interests to provide future stability because they were no longer as constrained by gender stereotypes.

However, gender stereotypes continued to limit college females who experienced pressures to be attractive and adopt societal views of their bodies (Davis, 1997). These pressures may have impeded identity explorations, with Page and Fox (1997) reporting the acceptance and integration of the body and physical self into one's emerging identity as the most potentially challenging developmental task. As a result, some females who perceived their bodies negatively and lacked the confidence to experiment with and explore different career paths and romantic relationships. Even though some females did not limit their explorations when their bodies differed from a societal ideal, many females became conflicted about being different and experienced feelings of instability, the next feature of the emerging adult life stage.

**Instability.** Because there has been no clear road map for females as emerging adults, females often experienced successes and failures during identity explorations as they investigated options for their lives. As college females devised and revised their life plans, many experienced feelings of instability, the second feature of the emerging adult years (Arnett, 2000). When some females experienced feelings of anxiety and uncertainty from minor setbacks, such as low exam grades or failed relationships, their frustrations led to change. For example, after experiencing hardships, college females had to confront whether they needed to increase their

study skills or switch their majors to those better suited to personal strengths. Feelings of instability following unsuccessful life explorations also were common as females contemplated, complied with, and resisted being constrained by a feminine ideal.

College females reported receiving messages from families, peers, and the media about the importance of attractiveness and need to embody a feminine ideal during emerging adulthood (Gillen & Lefkowitz, 2009). According to these authors, messages about the importance of attractiveness and thinness suggested to college females that these features were critical for success in life. As a result, many college females felt conflicted when identity discoveries did not align with society's image of femininity; others felt trapped to imitate stereotypically feminine behaviors even if feminine behaviors did not align with their identities. While society no longer dictated life plans for females, it still defined expectations for femininity and physical attractiveness. Therefore, many females experienced increased anxiety and feelings of uncertainty regarding their physical selves, especially without family support common during previous life stages. The age of self-focus, another feature of the emerging adult life stage, also contributed to feelings of uncertainty and loneliness during the college years.

**Self-Focus.** The beginning levels of adult responsibilities during emerging adulthood made it more acceptable for college females to prioritize personal needs and explorations. The third feature of the life stage, the age of self-focus, represented a time when parental restrictions were reduced and personal responsibilities increased. Females made independent decisions without having to obtain permission or consent from others (Arnett, 2005). They decided whether to attend class, when to complete homework, and when to socialize with friends without needing to ask for approval or validation from others. While college females were seldom

physically alone, many were overwhelmed by living on college campuses mostly populated by strangers without the security of home environments.

The self-focus feature of the emerging adult years, therefore, challenged females as they relied more on themselves than they previously had. With so many unfamiliar faces, some females found it difficult to develop intimate relationships with peers. College females who had been socialized to link success in interpersonal relationships, often related to their physical attractiveness, made deliberate attempts to improve their appearances in efforts to increase their popularity (Rodin et al., 1985; Striegel-Moore & Marcus, 1995). The self-focus life stage provided a time for females to pursue self-explorations; however, many became too focused on improving physical attractiveness such as through weight loss. Since females often were socialized to define themselves through relationships (Heinberg, 1996), many pursued self-perceptions of attractiveness to increase social opportunities and decrease feelings of alienation common to the years bridging adolescence and adulthood.

**Feeling In-Between.** During the college years, many females engaged in adolescent and adult behaviors characterizing the fourth feature of emerging adulthood as feeling in-between (Arnett, 2000). Because emerging adulthood was characterized as a time for self-exploration, it became more acceptable for females to move forward and backward on a continuum between adolescence and adulthood while learning the responsibilities of adulthood (Arnett, 1994). During one day of the week, their behaviors resembled girlishness, while on other days they engaged in more mature behaviors. Many college females obtained part-time jobs to gain increased financial independence, yet relied on parents to pay tuition and other costs of attending college. Even though the majority of females lived on campus or in apartments, many returned home when they needed to do laundry, wanted a good night's sleep, or had overspent their

budgets for food. Many females depended on parents and other adults for emotional and financial support suggesting that these in-between years were necessary for maturation.

**Age of Possibilities.** Many females realized during the college years that childhood dreams may not come true, yet they continued to maintain a positive outlook on life known as the age of possibilities (Arnett, 2004). Even though they found the daily challenges of college such as challenging coursework or discourteous roommates to be stressful, females remained upbeat and positive about achieving future career and relationship goals. As females made decisions about the future, most remained optimistic because they seldom faced the harsh realities of job rejection, divorce, death of a loved one, debt repayment, or motherhood. Since parents no longer dictated, judged, or hindered life choices, females felt free to do whatever they chose. While day-to-day challenges of the college years were stressful, many females displayed feelings of optimism because they knew overcoming daily hurdles likely would lead to positive outcomes.

The emerging adulthood years for many college females were filled with intense emotions as they experienced developmental highs and lows. The college years provided an in-between time that enabled females to explore their identities without feeling responsible for others. However, societal expectations, and at times minimal guidance and support, made the emerging adulthood years stressful. Sometimes females felt confused when they discovered their identities differed from societal norms; others pursued validation about their physical appearances to combat the highs and lows of this life stage. Some females struggled to cope with feelings of change and instability resulting in lower self-esteem and increased participation in health-risk behaviors as emerging adults.

### **Using Health-Risk Behaviors as Coping Mechanisms**

Self-explorations during the emerging adulthood years commonly included experiences of failure or disappointment (Arnett, 2004). Therefore, some college females tried to bolster self-esteem to combat periods of uncertainty during this emerging adult life stage. According to Crocker (2002), the pursuit of self-esteem (defined as one's quest to feel good about oneself) has become a central pursuit in our society. Furthermore, individuals have been socialized to pursue self-esteem in the domain in which self-worth was invested, such as appearance among college females. Crocker and Park (2004) reported that when female college students based self-esteem on appearance, they partied more, consumed more alcohol, used more drugs, and were higher in symptoms of disordered eating than students who based their self-esteem on moral values and religious faith.

Although participation in health-risk behaviors may have boosted self-esteem or reduced anxiety in the short term, engaging in these risky behaviors led to negative health consequences over time (Crocker, 2002). Even with known consequences, many females sought to improve self-perceptions of attractiveness through participation in health-risk behaviors. For example, some females consumed alcohol, smoked, or used illegal drugs in search of greater peer acceptance and popularity; other females engaged in risky sexual behaviors and disordered eating to receive validation about their physical appearances. Therefore, the health-risk behaviors examined in this section, which were identified from the Youth Risk Behavior Surveillance System (YRBSS) (Centers for Disease Control and Prevention, 1995), have been used by college females to enhance physical self-esteem and social self-esteem as it related to their bodies.

Many college females drank alcohol and used or experimented with other drugs socially to improve physical self-perceptions through peer acceptance. According to Striegel-Moore and Marcus (1995), females were socialized by parents, peers, and the media to believe that success in interpersonal relationships was linked to self-perceptions of physical attractiveness. To increase popularity and develop successful relationships, many females smoked cigarettes, consumed alcohol, and used drugs because they thought their peers did (Moran, Wechsler, & Rigotti, 2004; Perkins, Meilman, Leichliter, Cashin, & Presley, 1999). However, these authors also noted that actual cigarette use, alcohol consumption, and drug use were lower among college females than was perceived by peers. Some female college students consumed alcohol at parties for fear their social status could be jeopardized if they abstained. Consequently, the need to gain social approval from peers to improve self-perceptions of attractiveness contributed to females' choices to engage in the health-risk behaviors of consuming alcohol and using other drugs during the college years.

Additionally, some female college students consumed alcohol to enhance self-perceptions of physical attractiveness through validation from potential romantic partners. According to Young, Morales, McCabe, Boyd, and D'Arcy (2005), college males found college females who consumed alcohol more attractive than those who remained sober. These authors reported that many females received extra attention from flirtation with males after consuming alcohol, which led to females' improved self-perceptions of attractiveness.

College females who consumed alcohol also were more likely to engage in risky sexual behaviors (Eisenberg, Neumark-Sztainer, & Lust, 2005). For example, many female undergraduates reported engaging in risky sexual behaviors to receive positive feedback about their physical appearances from peers and prospective dating partners (Gillen, Lefkowitz, &

Shearer, 2006). Brumberg (1998) explained that when females did not feel good about themselves and needed affirmations from others, they were less likely to make responsible decisions about sexual partners or sexual activities. Some females admitted engaging in risky sexual behaviors with numerous partners or without insisting on the use of birth control measures because they feared being abandoned by males who they depended on to validate their physical attractiveness (Eisenberg et al., 2005; Wingood, Diclemente, Harrington, & Davies, 2002). Despite known health consequences, alcohol use and risky sexual behaviors were used to receive validation and improve self-perceptions of attractiveness among college females. Another health-risk behavior, referred to as disordered eating, also was used by college females so they might receive positive feedback and earn praise about the petiteness of their bodies.

College females have participated in a spectrum of unhealthy eating behaviors in seeking to conform to a societal ideal and increase physical self-esteem. According to Rodin et al. (1985), positive validation from others about body weight and shape was one of the main contributors to female college students' physical self-perceptions and overall physical self-worth. Disordered eating ranged from poor nutritional habits to excessive exercise to eating disorders like anorexia and bulimia (Nattiv & Lynch, 1994). Even though these weight-loss methods were extremely unhealthy and could result in long-term health consequences, these behaviors by college females were reinforced through compliments and favorable attention from female and male friends.

The emerging adult years included intense identity explorations that led some females to participate in health-risk behaviors to seek self-esteem through external validation and management of fears and anxieties. For example, some females consumed alcohol and used other drugs to increase their popularity and so they would be more likely to be viewed by others

as attractive. Some females engaged in risky sexual behaviors and disordered eating to increase the possibilities of gaining male companionship and positive peer feedback. Even though engaging in health-risk behaviors improved self-esteem in the short-term, these often resulted in long-term health problems.

Hildebrand et al. (2001), Kokotailo et al. (1998), Reinking and Alexander (2005), and Yusko et al. (2008) found that participation in intercollegiate athletics diminished participation rates in many health-risk behaviors among college females. Health-risk behavior participation among active college females will be examined in the next section. The personal and social benefits related to exercise participation and athletic competition will be discussed as well as a brief history about these.

### **Benefits of Sport Competition and Exercise Participation**

Historically, femininity and heterosexuality were seen as incompatible with sporting excellence (Lenskyj, 1986). This began to change with the enactment of the Education Amendments of 1972, including Title IX, which provided more equitable opportunities for female sport participation in high schools and colleges (Title IX Athletic Policies, 2007). According to the National Coalition for Women and Girls in Education, female intercollegiate athletic participation has increased 456% since the enactment of Title IX (Title IX Athletic Policies, 2007). While gender differences historically limited females in educational programs, female athletes became greater beneficiaries of competitive sport opportunities because of this legislation. Paralleling the acceptance of females in sports were changing attitudes about females' involvement in exercise and physical activity (Lenskyj, 1986). As a result, female participation rates in sport, exercise, and physical activity increased as did females' knowledge of associated health benefits.

Physical, social, and psychological benefits have been attributed to exercise participation and sport competition among college females (Staurowsky et al., 2009). Physical benefits have ranged from performance benefits, such as improved strength, power, enhanced physical skills, and increased cardiovascular fitness (Gill, 1994), to overall health benefits, such as decreased risks for heart disease, cancer, obesity, and diabetes (Centers for Disease Control and Prevention, 1999). Female athletes and some female exercisers also experienced psychosocial benefits like development of a salient sense of self (Fox, 2000; Melendez, 2010), increased life management skills (Melendez, 2010), and establishment of social networks (Miller & Kerr, 2002). According to Fox (1997a), a theory known as the skill development hypothesis suggested that positive experiences in specific domains enhanced self-efficacy and eventually generalized to more global aspects of self-esteem. However, some psychosocial benefits were enhanced more for athletes than for exercisers because sport environments offered more structured opportunities for females to experience feelings of empowerment and improve self-esteem from learned sport skills (Brady, 1998; Lenskyj, 1995).

The self-esteem of female college students varied due to feelings of uncertainty and stress; however, female athletes and exercisers were more likely to report having positive senses of self than sedentary female college students (Fox, 2000; Melendez, 2010; Taylor, 1995). Lenskyj (1995) concluded, “The experience of physical competence that results from a physically active, well-toned body significantly enhances our self-esteem and positive body image” (p. 6). For example, improved strength after six weeks of strength training or increased endurance after joining a weekly fitness class often improved self-esteem among female exercisers. Similarly, self-esteem of female athletes was increased through opportunities to learn, master, or refine sport skills (Brady, 1998; Zimmerman & Reavill, 1998). Whether it was

due to scoring the winning goal during competition or setting a new record in a road race, sport competition and exercise participation provided females opportunities to feel positively about themselves through their physical abilities. Females' self-esteem greatly improved through exercise participation and sport competition. Sport competition enhanced life skills more than exercise participation did and helped female athletes' coping skills.

In sport competitions and life, many situations are unpredictable. Even during daily exercise, unexpected physical ailments or other challenges often arise. However, Melendez (2010) reported a connection specifically between college students who identified as athletes and improved life or positive coping skills. Zimmerman and Reavill (1998) explained how female athletes learned life skills through sport competition.

When your daughter has been challenged on the basketball court or soccer field, she will be better equipped to handle the challenges--the need for perseverance in the face of defeat, the hard work required for success--that come her way as an adult. (p. 26)

A female athlete whose persistence in a sporting event resulted in a comeback victory may be better prepared to cope with a frustrating search for employment later in life. Similarly, athletes who have succeeded in sports after recovering from devastating injuries could be more prepared to endure a lack of control over life circumstances. According to Blinde et al. (1993), female athletes have credited sport competition with learning to cope with failure and not letting it deter efforts in achieving their goals. A similar link between exercise participation and coping skills has not been reported in the literature. However, females in some exercise settings and many sporting environments have been taught to persevere and never quit, which better prepared them to cope with unexpected dilemmas and life's disappointments. Goal-oriented environments

in sport and exercise benefited females' resilience leading to enhanced social connections with teammates and peers.

Social benefits also were reported as a result of exercise participation and sport competition (Fox, 2000; Miller & Kerr, 2002). While many college females felt emotionally alone during the emerging adult years (Wiseman, 1995), sport competition provided female athletes with group identities and facilitated female bonding (Blinde, Taub, & Han, 1994). According to Blinde et al. (1994), athletes frequently described their teammates as "best friends," "close knit," "family," and "people you love to death." Sport competition facilitated female bonding when teams overcame challenges to achieve goals such as a defeating a rival team or winning a conference championship.

Exercise participation also facilitated female bonding through an improved sense of belonging from relationships with exercise leaders or others in exercise groups (Fox, 2000). When females routinely engaged in exercise programs or joined athletic teams, they were provided more accessible opportunities to meet people and form friendships through common goals, joint activities, or shared participation or competition. On the other hand, some physically active females, especially those involved in traditionally masculine sports and activities (Csizma, Wittig, & Schurr, 1988), faced stereotypes as a result of sport competition that categorized them negatively.

Many females experienced tension when they participated in exercise classes, engaged in personal exercise routines, or competed in organized sports because they were perceived to have challenged the boundaries of femininity (Blinde & Taub, 1992; Krane, 2001; Krane et al., 2004). As a result, many female athletes consciously acted overly feminine (Krane, 2001). Female athletes admitted wearing make-up and bows in their hair because they were afraid they would

be discriminated against by peers who mistakenly labeled female athletes as homosexuals (Krane, 2001). Dworkin (2003) reported that some female exercisers expressed concerns about appearing masculine after strength training, and as a result, engaged primarily in cardiovascular exercise to avoid such stereotypes. On the other hand, Jessica, a collegiate gymnast admitted having fewer concerns about her appearance because of her athlete role, while embracing the traditional feminine image outside of sport on occasions of her choosing (Ross & Shinew, 2008). Jessica and other female athletes may have felt protected from societal expectations, while other athletes and many exercisers experienced pressure to straddle a thin line between femininity and displaying physical strength and competence.

The majority of female athletes reported feeling more positively about their bodies because of exercise participation and sport competition. Even though some female athletes and exercisers endured conflict between femininity and portraying strong bodies, positive self-perceptions associated with physical accomplishments provided opportunities to increase physical self-esteem and lessen the effect of societal stereotypes. According to the skill enhancement hypothesis (Fox, 1997a), involvement in physical activities, improvement in skill, knowledge, fitness, health, and team accomplishments resulted in an improved sense of self, social networks, and life management skills or coping skills. College female athletes and some female exercisers, as a result, were less likely to pursue self-esteem through participation in unhealthy behaviors.

**Health-Risk Behaviors among Female Athletes and Exercisers.** College female athletes and some female exercisers increased their physical self-esteem through improved self-perceptions of physical abilities (Sonstroem, 1997), which decreased their need to pursue physical self-esteem enhancement through participation in health-risk behaviors (Fox, 2000;

Hildebrand et al., 2001; Kokotailo et al., 1998; Reinking & Alexander, 2005; Yusko et al., 2008). According to Fox (2000), sport competitors and exercise participants had higher physical self-perceptions and overall physical self-worth than did non-active females. Zimmerman and Reavill (1998) explained that beginning in adolescence, female athletes defined themselves by their athletic abilities rather than popularity, alcohol or drug use, or physical appearance. Therefore, female athletes and some female exercisers were less likely to seek out peer acceptance, positive feedback, and validation about their physical appearances through unhealthy coping mechanisms.

Female athletes who had increased physical self-esteem were not as likely to engage in risky sexual behaviors and disordered eating (Kokotailo et al., 1998; Reinking & Alexander, 2005). Many female athletes reported feeling pride in their bodies and increased physical self-esteem as a result of competing intercollegiate athletics (Blinde et al., 1993; Krane et al., 2004). The physical self-esteem of female athletes increased during athletic competition and practice through improved self-perceptions of sport competence, physical strength, and physical conditioning. As a result, female athletes were less likely to engage in health-risk behaviors to improve physical self-esteem.

Even though female athletes were less likely to have participated in health-risk behaviors compared to other college females, the athletic culture dictated many of their choices about alcohol and drug use. According to Vickers et al. (2004), alcohol consumption has been widely accepted by athlete peers and often used in initiations and to celebrate victories and deal with defeats. However, athletes consumed less alcohol during the week compared to non-athletes due to athletic obligations (Pritchard, Milligan, Elgin, Rush, & Shea, 2007). Female athletes reported lower cigarette use and marijuana use rates compared to female non-athletes (Yusko et al.,

2008). Hildebrand et al. (2001) theorized that student-athletes had incentives over their non-athlete peers not to smoke cigarettes because of physical fitness demands of sports, team rules mandated by coaches, and an emphasis on overall good health.

Because many female athletes enjoyed more psychological, social, and physical benefits because of and through sport competition, they participated in fewer health-risk behaviors than did non-athletes. Female athletes' increased self-esteem and positive physical self-perceptions related to sport competition often resulted in avoidance of unhealthy coping mechanisms. As female sport competition increased, many researchers became interested in examining what factors increased physical self-esteem. A brief history of self-esteem or self-worth research related to the physical domain will be examined in the next section.

### **Brief Overview of Physical Self-Worth**

Physical self-esteem, a construct comprised of various physical self-perceptions, evolved from the expansion of self-esteem research. Originally self-esteem was measured by adding together an individual's self-ratings on numerous personal qualities and competencies.

Rosenberg (1979) argued that this type of measurement ignored differences in self-perceptions that should not be treated equally. Shavelson, Hubner, and Stanton (1976) also reported that self-perceptions of individual abilities contributed differently to feelings of self-worth within specific domains and were not directly associated with an individual's global self-worth. These authors referred to their theory as the multidimensional approach because it recognized the existence of global self-esteem but focused on the measurement of specific domains of self-esteem and their content (Marsh, 1990).

The concept of multidimensionality was extended by Shavelson et al. (1976) and Marsh and Shavelson (1985) to investigate the structural organization of self-perceptions within a

hierarchical model. This hierarchical model illustrated that an entire range of self-perceptions might be measured from very specific and changeable, such as “I can score this penalty kick” to the more generalizable and stable, such as self-perceptions of sport competence or inferences about the physical domain in general. This model was attractive, according to Fox and Corbin (1989), because it inferred a path by which regular interactions with different aspects of life could modify the more enduring and global elements of self. According to the hierarchical self-esteem model, negative self-perceptions from a missed penalty kick during a soccer game influenced self-perceptions of sport competence that influenced overall physical self-esteem.

The recognition of multidimensional and hierarchical self-esteem, which acknowledged numerous self-esteem domains in a structural model, paved the way for research in the physical domain. However, the notion of multidimensionality was never systematically applied to self-perceptions within the physical domain (Fox & Corbin, 1989). Therefore, these authors developed a measure to try to understand the relationships between physical self-perceptions and exercise behaviors, sport participation, and overall health and well-being.

### **Physical Self-Perception Profile**

Fox and Corbin (1989) created the Physical Self-Perception Profile (PSPP) to measure physical self-perceptions in more detail. The PSPP provided several advantages because it allowed insight into the relationships between overall physical self-worth and specific subdomain subscales of sport competence, physical conditioning, body attractiveness, and physical strength (Fox, 1990). For example, changes in a female’s overall physical self-worth could be traced to the PSPP subdomain subscale of sport competence, which could be traced to specific experiences and behaviors related to regular sport competition. According to Fox (1990), “Four of these subscales are designed to assess perceptions within specific subdomains

of the physical self. A fifth subscale is included in the profile to measure general overall physical self-worth” (p. 5). The instrument was developed in four phases on the basis of three independent samples of college students through a series of pilot studies, instrument trials, and modifications (Fox & Corbin, 1989).

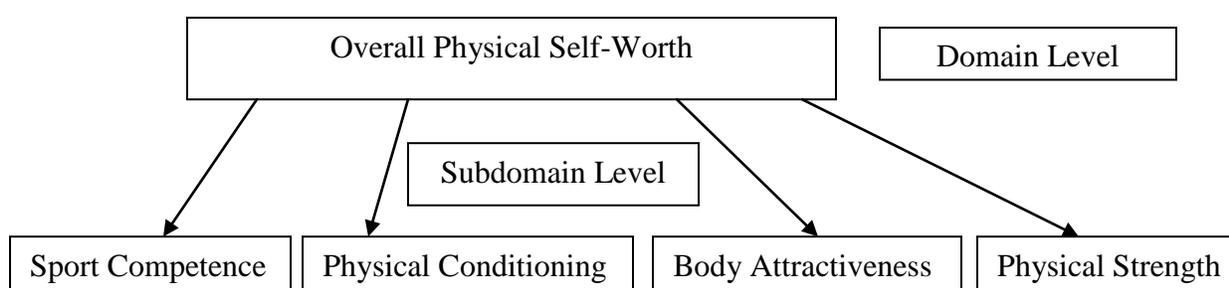
The purpose of stage one was to identify possible subdomains of the physical self for males and females of various age groups. An open-ended questionnaire was administered that asked subjects to list why an individual felt good about his or her physical self. Certain themes predominated; the authors defined these themes as the four subdomains of sport competence, physical conditioning, body attractiveness, and physical strength (Fox & Corbin, 1989).

The second phase of PSPP development included construction of the PSPP subscales and item content. The PSPP was compiled to incorporate 5, 6-item subscales for a total of 30 questions (Fox, 1990). Four of the five PSPP subscales represented the four subdomains identified in the initial stage of the scale’s development. For the items of this fifth subscale, the authors made deliberate efforts to avoid overlap with the subdomain items. Instead, a fifth subscale was defined to reflect feelings of pride, respect, and satisfaction with the physical self (Fox, 1990). Except for items in the physical self-worth subscale, subscale items were designed to reflect a range of perceptions concerning acquisition/maintenance (process items), competence/adequacy (product items), and self-presentation (confidence items) (Fox, 1998). The third and fourth phases of instrument development focused on the psychometric properties, which are discussed further in chapter three.

Since the initial development of the PSPP, the profile has been used to examine high school students (Curby, 1995), high school athletes (Welk, Corbin, & Lewis, 1995), college students in the United States and Great Britain (Fox & Vehnekamp, 1990; Hayes et al., 1999,

Kowalski et al., 2001; Page, Fox, & Biddle, 1993), and middle-age adults (Sonstroem, Speliotis, & Fava, 1992; Sonstroem, Harlow, & Josephs, 1994). Sonstroem and colleagues suggested that the physical self-worth subscale may have been dominated by the body attractiveness subdomain subscale among a sample of adult aerobic dancers. The authors did not blame the instrumentation but suggested that females in today's health-conscious society perceived physical self-worth and body attractiveness as synonymous. Additionally, Hayes et al. (1999) reported that each PSPP subscale failed to contribute unique variance toward physical self-worth among a group of college students. As a result, the present study was important because it further investigated the internal structure of the PSPP by comparing physical self-perceptions between groups of females. Therefore, it was important to review the components of each PSPP subdomain (e.g., sport competence; physical conditioning; physical strength; and body attractiveness) followed by the domain measurement of overall physical self-worth. Figure 2.1 provides a graphic representation of the relationships between the domain of physical self-worth and the four subdomain subscales.

*Figure 2.1.* Physical Self-Perception Profile (Fox & Corbin, 1989)



**Sport Competence.** From a young age, many female athletes spent the majority of their free time involved in group clinics, private lessons, team practices, competitions, and performance work-outs to increase sport competence. Dedication to year-round training could have been the primary reason why female athletes reported improved competence in sports

compared to non-athletes (Curry, Rehm, & Bernuth, 1997). Fox (1990) stated that the subscale of sport competence included perceptions of sport and athletic ability, ability to learn sport skills, and confidence in sporting environments. The literature related to perceptions of sport and athletic abilities and ability to learn sport skills will be examined by reviewing literature on time devoted to training (Eccles & Harold, 1991) and proper coaching (Sullivan & Wilson, 1993).

According to Eccles and Harold (1991), increased amounts of free time spent participating in sports improved physical self-perceptions of sport abilities. For example, when female athletes stayed after team practice to further develop their sport skills or spent free time shooting baskets, swimming laps, shooting soccer goals, and practicing tennis serves, they were more likely to have improved physical self-perceptions of current sport and athletic skills as well as perceived abilities to learn new sport skills. Fox (2000) agreed and added that time spent in organized team activities led to improved sport competence. Practice time increased competence as did being taught by knowledgeable coaches who commonly led team practices and competitions.

Proper coaching has been the second aspect contributing to improved perceptions of sport and athletic abilities among female athletes. Sullivan and Wilson (1993) explained that coaches committed to enhancing athletes' abilities used up-to-date and relevant instructional methods and improved these over time. For example, sometimes coaches used numerous instructional strategies because some females responded more quickly to hands-on practice, while others needed more visual or verbal cues. Female athletes were more likely to have improved self-perceptions of sport and athletic abilities when they spent more time training in team and individual settings with knowledgeable coaches. While improved self-perceptions of athletic abilities were important, mental confidence also was needed to achieve sport competence.

The second part of Fox's (1990) sport competence definition was confidence in the environment, which was comprised of experiencing past sport successes and positive reinforcement (Murray & Matheson, 1993; Weiss & Glenn, 1992). Murray and Matheson (1993) explained that when individuals experienced success in sports and felt increased control over their achievements, self-perceptions in sport competence improved. For example, when female athletes succeeded during competitions, their confidence increased; this helped them succeed in the future.

Since losing in sport was inevitable and athletes experienced negative self-perceptions from losing, these could be ameliorated through positive reinforcement. When female athletes were recognized and reinforced by coaches for their sport skills, efforts, abilities, and achievements, they were more likely to have increased sport confidence compared to female athletes who received little or no feedback. Allen and Howe (1998) reported higher confidence in sport competence among female adolescent athletes when they received more frequent praise and information from coaches in response to good performances and less frequent encouragement and corrective information following mistakes. Positive peer feedback also increased the confidence of female athletes and overall sport competence according to Horn, Glenn, and Wentzell (1993) and Smith (1999) when teammates praised each other for effort and success. While sport competence has been suggested to be an important predictor of overall physical self-worth in athletes, self-perceptions of physical conditioning, the second subdomain of the PSPP, has been found to help explain exercise participation among athletes, exercisers and non-exercisers.

**Physical Conditioning.** Physical conditioning as described by Fox (1990) included levels of physical condition, stamina, and fitness, ability to maintain exercise, and confidence in

exercise and fitness settings. A college female's commitment to exercising regularly may be related more to her confidence, while her fitness may be related more to physical capabilities. Physical fitness was defined by Corbin, Welk, Corbin, and Welk (2006) as "the body's ability to function efficiently and effectively. It is a state of being that consists of at least five health-related and six skill-related physical fitness components, each of which contributes to total quality of life" (p. 6). Health- and skill-related physical fitness components increased through physical activity and exercise participation but varied depending on individual goals of health and performance.

The five health-related physical fitness components of cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition have become good baseline measurements for females to measure increased fitness and overall physical conditioning. According to Caruso and Gill (1992), exercise participation increased physical fitness levels. As a result, many females who experienced physical improvements, such as improved cardiovascular endurance, work capacity, and flexibility, reported increased feelings of success and satisfaction (Martin & Lichtenberger, 2002). Therefore, when physical fitness improved among female exercisers and athletes, self-perceptions of physical conditioning also improved (Fox, 2000).

Skill-related physical fitness components, such as balance, reaction time, speed, coordination, power, and agility, have been reported to increase performance levels in sports (Corbin et. al, 2006). These fitness components increased physical conditioning through training that enhanced specific sport skills. For example, female athletes who needed increased power for high-level performance participated in plyometrics. Power has been shown to be important in activities such as hitting a softball or tennis ball, throwing a discus or javelin, shooting a jump

shot, and spiking a volleyball. Female athletes whose skill-related physical fitness training was designed around specific sport skills to increase performance developed improved self-perceptions of physical fitness (Blinde et al., 1993; Krane et al., 2004).

One female college basketball player explained why physical training improved her self-perceptions of physical conditioning. “The physical element ...is very important...working through exhaustion, working through preseason conditioning and forcing your body to do things that your mind thinks it can’t...there’s a lot of things the physical element can teach you” (Blinde et al., 1993, p. 162). Extremely tough training regimens through which female athletes pushed their physical limitations instilled feelings of competence and positively impacted self-confidence.

Female athletes’ confidence in their physical conditioning was shaped by years of sport training and competition; female exercisers also reported feelings of confidence as a result of exercise participation. According to Sonstroem (1997), exercise participation led to increased physical fitness that produced psychological benefits. Similarly, female athletes reported developing confidence to master their bodies through sport competitions (Blinde, et al., 1993). After completing demanding physical work-outs that may have seemed beyond the physical limitations of their bodies, female athletes became more confident in their physical abilities. With increased confidence in their bodies, female athletes perceived physical conditioning as challenging, yet essential, for paving the way for greater success in sports. While dedication to daily training improved physical self-perceptions of physical conditioning among female exercisers and athletes, exercise rates were not found to be as influential in positive self-perceptions of the next factor of the PSPP, body attractiveness.

**Body Attractiveness.** This aspect of the PSPP historically has been measured most often (Waldron, 2005), possibly because females placed primary importance on it when evaluating their overall physical self-worth (Page & Fox, 1997). Engaging in physical activity, participating in exercise, and competing in sport have been suggested as ways to improve self-perceptions of body attractiveness (Davis & Cowles, 1989; Henry, Anshel, & Michael, 2006; Taub & Blinde, 1992); other researchers claimed athletic participation promoted body dissatisfaction (Pritchard et al., 2007). Fox (1990) described body attractiveness as perceived attractiveness of figure, ability to maintain an attractive body, and confidence in appearance. A common term used in the literature to describe perceived attractiveness was body image; conversely, decreased satisfaction with attractiveness was associated with body dissatisfaction. These terms have commonly been used in the literature to measure the positive and negative outcomes of exercise participation and sport competition on self-perceptions of attractiveness among female athletes, female exercisers, and female non-athletes.

Females who competed in sports and regularly engaged in exercise during the college years have reported more positive body images than non-active females (Henry et al., 2006; Krane et al., 2004). According to Henry et al. (2006), female exercisers who participated in a 12-week exercise program reported significant improvements in body image compared to a non-exercising control group. Similarly, female athletes credited sport competition with establishing positive relationships with their bodies, which led to improved self-perceptions of physical appearance (Dibartolo & Shaffer, 2002; Miller & Levy, 1996; Waldron, 2005). Krane, Waldron, Michalenok, and Stiles-Shipley (2001) interviewed many female athletes who expressed pride and satisfaction with their athletic bodies. One swimmer stated,

I know that I have worked hard to get my body in good shape, and there are

areas that are toned and defined and everything else. It kind of reassures me, makes me happy to go 'Yes' when I look in the mirror. (p. 31)

Many female athletes and some female exercisers perceived improved body attractiveness because they realized physical improvements were related to dedication to exercise and training. They recalled the obstacles they have endured to become physically fit, which led to improved positive physical self-perceptions.

Many athletes, however, have been subjected to the same cultural pressures about beauty as other females and carried other burdens associated with being toned or lean for increased sport successes (McConnell, 2005). For example, some female athletes endured increased amounts of pressure from coaches and teammates to lose weight to help achieve competitive advantages (McConnell, 2005; Sundgot-Borgen, 1994). Mixed research results regarding sport involvement and perceived attractiveness (Dibartolo & Schaffer, 2002; Miller & Levy, 1996; Pritchard et al., 2007) led Waldron (2005) to suggest that athletes should be examined in two groups based on sport type.

The ideal body size for athletes depended on the categorization of their sports as lean or non-lean. Lean-sport athletes were those participating in events that optimally required a low or specific weight (rowing) or where appearance or body build was potentially related to success (gymnastics); non-lean sport athletes participated in sports where fewer weight requirements or appearances were important or essential criteria (Waldron, 2005), such as basketball or softball. Davis and Cowles (1989) and Sundgot-Borgen (1994) reported increased body dissatisfaction among lean-sport athletes compared to non-lean sport athletes. Lean-sport athletes, such as female rowers who were forced to daily monitor and maintain weight to be able to compete, were more likely to have increased body dissatisfaction compared to softball players whose

weight was seldom a factor in playing time. Female gymnasts who felt that having a smaller frame would provide performance advantages leading to better scores from the judges were more likely to become unhappy and dissatisfied with their current sizes and appearances; many female athletes also faced constant pressures from coaches to remain lean.

Research studies conducted comparing lean athletes and non-lean athletes have produced conflicting results. According to Milligan and Pritchard (2006), female lean-sport athletes and non-lean sport athletes reported few differences on body dissatisfaction. These authors suggested that female athletes in all sports were under increased pressure to be physically fit and lean for increased performance. Waldron (2005) suggested that the lack of difference between lean and non-lean sport athletes' body dissatisfaction possibly was related to pressures on all females to conform their bodies to a societal thin ideal. When female athletes felt judged compared to images of attractive females portrayed in the media, they experienced decreased confidence in their physical appearances.

Some females became self-conscious when others judged their physical attributes during sport competition and exercise participation, while others felt increased confidence in their appearances. Confidence in appearance, the second part of the body attractiveness subdomain (Fox, 1990), may be based on self-presentation concerns (Leary, 1992) and societal expectations (Krane et al., 2004). According to Leary (1992), some females' confidence in exercise and sport settings was based on individual perceptions of others' impressions of them, which has been called self-presentation. Many female athletes reported having self-presentation concerns when they felt uncomfortable and self-conscious in their uniforms (Greenleaf, 2002; Reel, SooHoo, & Estes, 2005). Some athletes and exercisers were more worried about how others perceived their appearances and skills in the gymnasium or on the field instead of staying focused on exercise

goals or sport performance. Self-presentation concerns increased the tension felt by college female athletes and exercisers to be perceived as physically attractive by societal standards.

Physically active females were not immune to societal pressures encouraging them to transform their bodies and appearances to match models displayed by the media. In fact, many females' self-perceptions of body attractiveness were dependent on whether they compared themselves to other athletes, healthy females, or unrealistically thin females promoted by the media. Krane et al. (2004) blamed societal expectations for female athletes having decreased confidence in their bodies. These authors reported that female athletes exhibited increased confidence and satisfaction in their bodies, except when they compared their bodies to a societal thin ideal. Similar societal pressures were felt by female non-athletes who reported engaging in exercise to attain and maintain thin bodies without too much musculature (Dworkin, 2003). Physical activity levels or sport participation may not be as important to perceptions of body attractiveness as societal pressures since both active and non-active females scored lowest on the body attractiveness subscale compared to the other three subdomains (Hayes et al., 1999). The other PSPP component perceived less favorably than body attractiveness by female athletes, exercisers, and non-athletes was physical strength, the fourth subdomain subscale of the PSPP.

**Physical Strength.** While having an athletic identity has improved self-perceptions of physical strength among many female athletes, exercise rates and weight lifting also were reported to be essential for healthy exercise programs among female exercisers (Kennedy & Reis, 1995; Krane et al., 2004). While strength and muscularity have historically been associated with masculinity, Fox and Corbin (1989) found perceptions of physical strength to be an important component of overall physical self-worth for females as well as males. Fox (1990)

divided this aspect of the PSPP into three features: perceived strength; muscular development; and confidence in situations requiring strength.

College females expressed positive self-perceptions of physical strength whether they participated in competitive intercollegiate sports or exercised for fitness or other reasons (Dworkin, 2003; Krane et al., 2004). Most college athletes were motivated to train to increase muscular strength for performance purposes (Ross & Shinew, 2008), rather than aesthetic changes to physique or appearance. Female exercisers reported more interest in strength and stamina compared to college females who were not physically active (Kennedy & Reis, 1995). Kennedy and Reis (1995) explained that non-exercisers had little interest in increasing strength or physical stamina compared to exercisers when examining college females. These results demonstrated that many females who competed in sports and exercised regularly developed an understanding that physical strength was necessary for improved fitness and performance; however, they sometimes were not as popular with non-active peers because they participated so enthusiastically in weight training activities stereotypically associated with masculinity.

Athletic females occasionally found themselves the objects of gender-based, derisive comments because others believed well-defined muscles were not feminine; common insults included accusations of homosexuality and manliness (Burke, 1993). These negative stereotypes may have caused some athletes to experience decreased self-perceptions as a result of muscular strength development. Since sports like basketball and volleyball emphasized increased strength for success, some participants may have viewed their muscles less positively than those who had increased muscles with a more feminine-looking body. Females who did not compete in intercollegiate athletics may have been less likely to lift weights because they feared body masculinization (Dworkin, 2003). These results suggested that college-aged females who

exercised were more focused on maintaining gender-appropriate body types. Female athletes expressed some anxiety about being perceived as unladylike or masculine because of unusually well-developed musculature. Ironically, the traits that caused anxiety in social settings were precisely what helped to inspire competence and confidence during sport competitions.

The other aspect of the physical strength subdomain definition was confidence in situations requiring strength. Possessing confidence made individuals feel more comfortable in situations that required physical exertion resulting in a greater likelihood they would engage in activities demanding physical strength. Many athletes expressed increased feelings of empowerment compared to non-athletes because of the strength and skill developed through sport competition (Blinde et al., 1993). A college hockey player explained:

I feel more, this is gonna sound cheesy, but I feel more independent. I feel like I can take care of myself rather if I was just some weakling. I feel like I could run away from someone if I had to, or whatever, you know what I mean. I don't need somebody to take care of me. (Krane et al., 2004, p. 326)

Krane et al. (2004) also explained that strength and muscularity among females were more accepted in sport environments, but a more feminine demeanor and image was desired in social settings. Once again, females appeared to see attributes that were beneficial in competition as incompatible with traditional conceptions of femininity. This conflict, which stemmed from societal notions of feminine beauty, resulted in many females having decreased self-perceptions within the physical domain and lower overall physical self-worth.

**Overall Physical Self-Worth.** The physical self-worth domain subscale was developed to test the hypothesis that unique physical experiences contributed to different perceptions of physical self-worth (Fox, 1997b). The authors of the PSPP developed an independent subscale

that measured general feelings of happiness, satisfaction, pride, respect, and confidence in the physical self. Additionally, females' physical self-perceptions in the subdomains of sport competence, physical conditioning, body attractiveness, and physical strength were subsumed by the overarching domain of physical self-worth. When the PSPP was used in combination with Rosenberg's self-esteem scale, the subscale of physical self-worth mediated the relationship between the subdomains and global self-esteem (Fox, 1990). However, the construct of overall physical self-worth was a generalized outcome of perceptions in the four PSPP subdomain subscales whether or not a self-esteem scale was included in the model.

Overall physical self-worth has been strongly valued in Western culture and, therefore, often included in models of self-esteem (Fox, 2000). More recently, Fox (2000) suggested that physical self-worth should be considered as a valuable goal of exercise programs because it contributed to mental well-being. For example, self-perceptions of physical competence among college students were related to life adjustments independent of global self-esteem. Similarly, Bower (2006) found that sport competition improved positive self-perceptions of overall physical self-worth among females. As compared with global self-esteem, overall physical self-esteem was found to have greater associations with physical activity participation among many females. Therefore, further analyses needed to focus on changes in overall physical self-worth from exercise participation or sport competition to further understand females' mental well-being.

**Summary of PSPP Subscales.** Data from use of the four PSPP subdomain subscales and one domain subscale provided valuable information about how college females perceived physical competencies and body attractiveness. The subdomain of sport competence was reported to be highest among individuals who spent increased time in competitive team and

individual sports with knowledgeable coaches (Eccles & Harold, 1991; Fox, 2000; Sullivan & Wilson, 1993). Similarly, females who increased health- and skill-related fitness components through daily exercise and physical training were more likely to have improved self-perceptions of physical conditioning (Corbin et al., 2006). Self-perceptions of physical strength also were higher in exercisers and athletes than in non-athletes (Kennedy & Reis, 1995), but the scales of physical strength and body attractiveness remained the two lowest subdomain scores for active and non-active females (Hayes et al., 1999). However, all four of the PSPP subdomains were validated as unique contributors to overall physical self-worth (Fox & Corbin; Hayes et al., 1999) thus substantiating the need for all five to accurately explain females' low physical self-esteem and understand research findings from studies that used the PSPP.

The composite findings of the PSPP provided information about how females perceived their bodies over time and especially during the college years. Females have reported lower physical self-perceptions compared to males during high school (Curby, 1995) and college (Fox & Corbin, 1989; Fox & Venekamp, 1990). College females had lower physical self-perceptions compared to middle-aged males and females in every category except sport competence (Sonstroem, et al., 1992). These findings suggested that the emerging adult life stage was a time when females perceived physical attributes less favorably than did males, which led to additional PSPP research between active and non-active females.

The PSPP measured physical self-perceptions that improved due to physical activity and exercise participation among college females. Fox (2000) suggested that females who exercised perceived their bodies more positively than those who did not exercise, yet positive increases in self-perceptions only were reported on the physical conditioning subscale of the PSPP. The consensus among several researchers (Fox & Corbin, 1989; Kowalski et al., 2001; Sonstroem et

al., 1992) was that the subscale of physical conditioning was the strongest predictor of physical activity involvement. Kowalski et al. (2001) suggested that college females reported preferences for engaging in fitness-type activities that focused on improving their bodies' general levels of physical conditioning.

Physical activity's lack of influence on the other subdomains of sport competence, physical strength, and body attractiveness suggested that exercise participation provided minimal benefits to some college females' physical self-esteem. Exercise has been engaged in by many females for weight loss more than long-term health and wellness. As females explored their identities, many emphasized losing weight to try to match the images of thin females portrayed by the media. Cardiovascular activities such as jogging and walking were the preferred activities used to burn calories, lose weight, and increase attractiveness. However, even when exercise participation resulted in weight loss, self-perceptions of body attractiveness were not improved because compared to a societal thin ideal, many college females never felt thin enough.

### **Summary of Review of Literature**

Research has suggested that 18-to 25-year old females who participated in regular exercise programs and competed in intercollegiate athletics experienced tension between their status as physically strong and competent and traditional conceptions of femininity. Beginning in childhood and continuing through the adolescent years, parents, peers, and the media socialized girls and female adolescents to conform their identities to feminine gender roles for acceptance and praise. Many girls were over-protected by their parents and expected to participate in less vigorous activities stereotypically associated with their gender. Later, peers became important socializing agents by sending and reinforcing messages about the importance of beauty and popularity; the media conveyed societal messages to girls and female adolescents

through promotion of acceptable feminine appearances, clothing, and actions. As females transitioned into adulthood, some who perceived their identities and bodies differently than gender stereotypes became conflicted.

For many females, the emerging adult college years were filled with conflict and change from identity explorations, the core developmental feature of this life stage. Other important features of the emerging adult life stage included instability, self-focus, feelings of in-between, and feelings of possibilities. These life stage features and the broadening of traditional gender roles encouraged females to explore relationships and prospective careers related to identity formations. Some females developed unhealthy obsessions with their physical selves due to pressures to conform to traditional notions of femininity while forming their identities. Other females experienced stress by having to make independent decisions and cope with change and uncertainty. The pressures related to the lifestyle and societal expectations often resulted in increased participation in unhealthy coping mechanisms to manage feelings of instability.

Many females engaged in health-risk behaviors such as binge drinking, cigarette smoking, marijuana use, risky sexual behaviors, and disordered eating to cope with conflict and instability experienced during emerging adulthood. Health-risk behaviors sometimes were used to increase physical self-esteem to combat negative self-perceptions from failed identity explorations. Since females often sought and received compliments about their physical appearances, they were socialized to engage in health-risk behaviors to receive positive affirmations and increase their overall physical self-esteem.

Sport competition and exercise participation have been found to promote positive development in females by providing additional opportunities to increase self-perceptions of physical abilities and enhance overall physical self-worth. Other benefits related to sport

competition and exercise participation included an improved sense of self, expanded social networks, increased life management skills, and decreased participation in health-risk behaviors. Many female athletes and some female exercisers were less likely to engage in health-risk behaviors when seeking to increase self-perceptions of attractiveness because sport competition and exercise participation provided alternative ways to enhance physical self-esteem through self-perceptions of physical competencies. Through competition in sports and participation in exercises, females improved self-perceptions of sport competence, physical strength, and physical conditioning that decreased their need to engage in unhealthy coping mechanisms to improve body attractiveness and overall self-esteem.

The construct of physical self-worth was acknowledged following the discovery of a multidimensional self-esteem. Self-perceptions of individual abilities in a variety of life situations were no longer combined to form self-esteem. Instead, they were grouped by domains capable of having separate and different influences on an individual's self-esteem. The physical domain became an increasingly studied area of self-esteem because of the recognition of physical self-esteem as an independent construct and importance of the physical self in identity formation. However, a measure was never created that applied the notion of multidimensionality to self-perceptions within the physical domain until the development of the PSPP.

Fox and Corbin (1989) developed the PSPP to examine physical self-perceptions in more detail and analyze their relationships with exercise, sport participation, and mental wellness. The PSPP never has been used to compare physical self-perceptions of female intercollegiate athletes to those of female exercisers and female non-exercisers and between the latter two groups. It has been suggested that improved self-perceptions of the physical competencies occurred through intercollegiate sport competition and exercise participation. Given the increased intercollegiate

sport opportunities for females and availability of exercise facilities and recreational sport leagues on college campuses, it is important and timely to examine if increased physical self-esteem has become an additional benefit of sport competition and exercise participation. This study will help fill this void and lead to a greater understanding of how sport competition and exercise participation may impact physical self-esteem among female college students.

## **Chapter 3**

### **Methods**

Possessing healthy physical self-esteem is valuable to college females' identity development during the emerging adult years. However, societal pressures for physical attractiveness and stressors during the college years make it challenging for female students to perceive their physical selves positively. It is not fully understood if sport competition and exercise participation increase self-perceptions of sport competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth. To investigate whether any relationships exist, the PSPP was used to compare physical self-perceptions among female athletes, exercisers, and non-exercisers.

The following sections outline the methodology used to examine the research questions. The chapter begins with a rationale for the selected research design followed by a description of the study's participants. Then, an in-depth analysis of the study's instrumentation will include a report of its validity and reliability. The next section will explain the procedures implemented to distribute surveys and collect data. The chapter will conclude with a discussion of the study's limitations and data analysis procedures used to answer the research questions.

### **Research Design**

The purpose of this study is to investigate at one point in time the differences in physical self-perceptions of sport competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth between each of these three groups: female athletes; female exercisers; and female non-athletes. This research uses a cross-sectional design. This method emphasizes one-versus-one group comparisons and further investigates how sport competition, exercise participation, or non-exercise participation impacts perceived sport

competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth between three groups of college females.

### **Power Analysis**

A power analysis was conducted to determine the number of participants needed to provide adequate statistical power for the study. For this analysis, a small effect size of .15 was specified along with an alpha of .05 and power of .95, which yielded a required sample size of 130 participants.

### **Participants**

To gain insight into the relationship between female athletes, exercisers, and non-exercisers, a sample of female undergraduates at a large public university in the Midwest were invited to participate. Participants included freshman through seniors between the ages of 18-26. All 234 female student-athletes from 10 intercollegiate athletic teams were invited to participate in the study. For the purpose of attaining a comparable sample of exercisers and non-exercisers to the sample of female athletes, students enrolled in two courses within the Department of Health, Sport, and Exercise Sciences (HSES) and females living in selected residence halls were recruited. Over 300 residents from 6 female scholarship halls were asked to participate. These females who self-select to live in scholarship halls are required to maintain a 2.5 GPA and earn 28 credit hours per year to remain residents. Females living in one coed residence hall, who primarily are freshmen and sophomores, were also invited to participate.

### **Instrumentation**

**Physical Self-Perception Profile.** Demographic information was collected including age, current year of enrollment, ethnicity, amounts and types of exercise participation, and intercollegiate athletic team membership. Permission to use the PSPP was granted by Charles

Corbin and Ken Fox. Prior to the development of the PSPP, according to Fox (1990), “a comprehensive and systematic analysis of the content of the physical domain had not been adequately undertaken” (p. 4). The PSPP includes 30 items in a 4-choice structured format that presented 2 alternative statements to participants. Respondents selected which statement was most like them and then indicated whether it was “really true of me” or “sort of true” so that response varied along a four-category response scale (1 = low self-perception to 4 = high self-perception). Scale scores were calculated by summing the 6 items comprising each subscale and ranged from 6 to 24. Roughly, one-half of the items in the instrument were reversed so that the lowest-scoring descriptor was placed first, and items from each of the subscales were placed in sequence with the complete profile.

The psychometric properties of the PSPP were established by Fox and Corbin (1989) during the scale’s development. These authors reported internal reliability coefficients for each of the five PSPP subscales across both genders on the basis of two independent samples of college students. Coefficient alpha values ranged from .81 to .92. For females, coefficient alphas ranged from .82 (physical strength) to .89 (sport competence). To examine consistency over time, test-retest reliabilities were conducted based on a third independent sample (Fox & Corbin, 1989). Reliability coefficients ranged from .74 (physical self-worth) to .92 (sport competence) over a 16-day period and between .81 (physical strength) to .87 (body attractiveness) over a 23-day period indicating stable responses (Fox, 1990).

The PSPP was developed and validated for use among college students (Fox, 1990). Validity data were provided by the PSPP authors (Fox & Corbin, 1989) that included content, predictive, and construct validity. Content validity, or the extent to which a test represented the universe of items from which it was drawn (Salkind, 2006), was demonstrated through open-

ended questionnaire analyses and further supported by subsequent regression analyses. A stepwise multiple regression analysis, using the subdomain subscale scores to predict overall physical self-worth, resulted in a total of 69% explained variance (Fox & Corbin, 1989). The regression analysis provided support for content validity and provided additional support for the four subdomain subscales.

Predictive validity, or the ability of a test to predict a criterion (Salkind, 2006), was demonstrated by using the four PSPP subscale scores to differentiate between active and non-active individuals. Using discriminant analyses, the results produced canonical correlation coefficients of  $r = .47$  for females  $p < .001$ . A correct activity/non-activity classification of 70.7% for females represents a substantial improvement on chance. The results provided strong support for the capability of the sport competence, physical conditioning, and physical strength subscales to discriminate between active and non-active as well as between high-active and low-active adults.

These analyses were taken one step further in order to demonstrate constructive validity, or whether test performance reflects an underlying construct or set of variables (Salkind, 2006). Using the 4 PSPP subscale scores as 1 set of variables and involvement in 5 categories of physical activity as the other, the analyses produced 2 significant canonical functions for females ( $r = .52, p < .01, r = .35, p < .05$ ), which together explained 94% of the variance. Results suggested that there were two types of active females: the athletic female with high perceived sport competence and the exercising female (Fox & Corbin, 1989). Additionally, sport loadings were similar to those for ball sport activity for females, while the endurance and calisthenics were closely associated with the physical conditioning and body attractiveness subscales for females. It was concluded that perceptions of a high level of adequacy or competence in a

domain would lead to involvement in behaviors in which those abilities could be demonstrated; these findings were interpreted as supporting evidence for constructive validity (Fox & Corbin, 1989).

The validity of some self-perception instruments has been threatened by a tendency for items to solicit socially desirable responses. Fox and Corbin (1989) used the Marlow-Crowe Social Desirability Scale (Reynolds, 1982) to examine the PSPP's susceptibility to socially desirable responses among a sample of college students. The results proved positive as none of the PSPP subscales and only 2 out of the 30 individual items scores correlated significantly at the .05 level with the short form of the Marlow-Crowe Social Desirability Scale. Fox (1990) concluded that as a result of adopting Harter's structured alternative format (Harter, 1985b as cited in Fox, 1990), the PSPP was not highly affected by this form of response bias.

### **Procedures**

Approval was obtained from the institutional Human Subjects Committee. The subjects were recruited through academic support services in the Department of Athletics, the university's Department of Student Housing, and courses within the HSES department. Support and approval for this process were given by the Associate Athletic Director of Student Athlete Support Services, the Director of the Department of Student Housing, and two faculty members in the HSES department. The Director of Student Housing provided the investigator access to the hall directors of the female scholarship halls and one large, co-ed residence hall. The director of the scholarship halls agreed to send an e-mail message to residents that included a forwarded message with an informed consent form, a description of the study with instructions, and a link to the questionnaire on Qualtrics. Qualtrics is a software system that enables users to create Web-based surveys and collect statistical data. The other hall director connected the investigator

to four resident assistants who agreed to send the same e-mail message and forwarded message to participants.

The Associate Athletic Director of Student Athlete Support Services and two faculty members in the HSES department agreed to send an e-mail message through distribution lists to female athletes and female students respectively. The process for contacting these students was identical for all students invited to participate. All participants were asked to answer demographic questions followed by 30 questions about physical self-perceptions within the 5 subscales of sport competence, body attractiveness, physical conditioning, physical strength, and overall physical self-worth.

To check for understanding of the wording of demographic questions only, the investigator conducted a pilot study with 11 female college students. The investigator randomly asked female college students who were not residents of university housing or intercollegiate athletes to ensure non-duplication of respondents. Pilot study participants were asked to complete a pen and paper version of the survey and express any concerns they had with clarity or wording of questions. No problems understanding survey questions or directions were reported by pilot study participants.

### **Data Analysis and Hypothesis Testing**

- *Hypothesis 1: The relationship between the PSPP subdomains of sport competence, physical conditioning, body attractiveness, and physical strength with the domain of overall physical self-worth will be stronger for athletes compared to exercisers, exercisers compared to non-exercisers, and athletes compared to non-exercisers.*

This hypothesis will be tested using multiple regression analyses.

- *Hypothesis 2: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of sport competence than female college students who participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 3: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of sport competence than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 4: Female college students who engage in regular physical activity as defined by the ACSM have significantly higher (i.e., more positive) self-perceptions of sport competence than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 5: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of physical conditioning than female college students who participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 6: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of physical conditioning than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 7: Female college students who engage in physical activity as defined by the ACSM have significantly higher (i.e., more positive) self-perceptions of physical conditioning than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 8: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of body attractiveness than female college students who participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 9: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of body attractiveness than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 10: Female college students who participate in regular physical activity as defined by ACSM have significantly higher (i.e., more positive) self-perceptions of body*

*attractiveness than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 11: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of physical strength than female college students who participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 12: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of physical strength than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 13: Female college students who participate in regular physical activity as defined by the ACSM have significantly higher (i.e., more positive) self-perceptions of physical strength than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 14: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of overall physical self-worth than female college students who participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 15: Female intercollegiate athletes have significantly higher (i.e., more positive) self-perceptions of overall physical self-worth than female college students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

- *Hypothesis 16: Female college students who participate in regular physical activity as defined by the ACSM have significantly higher (i.e., more positive) self-perceptions of overall physical self-worth than female students who do not participate in regular physical activity as defined by the ACSM.*

This hypothesis will be tested using Multivariate Analysis of Variance procedures at a .05 significance level.

Although the physical benefits from exercise and sport are well established, psychosocial benefits such as physical self-worth are not as well documented or understood. Female college students continue to report lower overall physical self-worth despite opportunities to exercise at university recreation centers (Fox, 1989; Hayes et al., 1999). One reason may be due to the emphasis placed on self-perceptions of the subdomain of body attractiveness by female college students to form overall physical self-worth. On the other hand, sport competition and exercise participation have been reported to positively influence physical self-worth among female college students, which is a focus of this study. Additionally, this investigator will examine whether self-perceptions in the subdomains of sport competence, physical conditioning, body

attractiveness, and physical strength are impacted by exercise participation and sport competition during college.

## **Chapter 4**

### **Results**

The positive or negative view females have of their bodies often impacts perceptions of self-worth during college. Specifically, many females perceive their bodies as unattractive thereby decreasing their overall physical self-worth. Self-perceptions of body attractiveness, however, comprise only one of the subdomains of most college females' overall physical self-esteem. Self-perceptions of sport competence, physical conditioning, and physical strength combine with the subdomain of body attractiveness to form a female's overall physical self-worth (Fox & Corbin, 1989).

This study sought to determine the differences in these four subdomains' influence on college females' overall physical self-worth across three groups: athletes; exercisers; and non-exercisers. Furthermore, this study used group comparisons to examine whether sport competition, exercise participation, or non-exercise participation altered college females' self-perceptions of sport competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth.

This chapter summarizes the demographics of the participants and reports the results of the statistical analyses conducted to evaluate the hypotheses and answer the research questions. The next section uses multiple regression analyses to examine the contributions of the PSPP subdomains to explain college females' overall physical self-worth. The subsequent section reports the results of a Multivariate Analysis of Variance omnibus test used to compare the three groups on the four subdomains simultaneously. Then, one-way Analysis of Variance univariate follow-up tests were conducted to determine group differences between female athletes and exercisers, female athletes and non-exercisers, and female exercisers and non-exercisers.

Finally, an Analysis of Variance omnibus test was used to evaluate whether significant group differences existed on college females' overall physical self-worth. Then, follow-up tests evaluated differences between group means. Prior to reporting the results, however, the chapter begins with instrument reliability followed by a summary of respondents' demographics.

### **PSPP Reliability**

The PSPP scale consisted of 5, 6-item subscales. Internal consistency was tested for the current study using Cronbach alpha for the subscales of sport competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth. These were .92, .92, .91, .92, and .91 respectively. Therefore, the PSPP was found to be highly reliable.

### **Descriptive Characteristics of Participants**

Table 4.1 presents demographic characteristics of the respondents in the three groups.

Table 4.1

#### *Demographics of Respondents*

	Athletes (n = 40)	Exercisers (n = 48)	Non-Exercisers (n = 47)
<b>Year in College</b>			
Freshman	9	18	20
Sophomore	13	17	11
Junior	8	8	10
Senior	7	5	6
5 <sup>th</sup> Year	2	0	0
6 <sup>th</sup> Year	1	0	0
<b>Ethnicity</b>			

White	3	43	39
Black/African American	3	1	2
Hispanic/Latino	0	2	1
American Indian/ Alaska Native	0	0	2
Other	4	2	3

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### Relationship of PSPP Subdomains with Overall Physical Self-Worth

**Hypothesis 1.** Hypothesis 1 proposed that the relationship between the PSPP subdomains of sport competence, physical conditioning, body attractiveness, and physical strength with the domain of overall physical self-worth would be stronger for athletes compared to exercisers, athletes compared to non-exercisers, and exercisers compared to non-exercisers. Before the regression was conducted, correlation coefficients for the four subdomains were calculated to further understand the variance shared between variables. The results are presented in Table 4.2.

Table 4.2

*Pearson Product Correlations between the Four PSPP Subdomains and the Domain of Overall Physical Self-Worth*

Scale	Overall Physical Self-Worth	Sport Competence	Physical Conditioning	Body Attractiveness	Physical Strength
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1. Overall

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Physical Self-				
Worth				
2. Sport	.48**			
Competence				
3. Physical	.66**	.69**		
Conditioning				
4. Body	.83**	.35**	.56**	
Attractiveness				
5. Physical	.57**	.67**	.70**	.39**
Strength				

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*Note.* \*\*P < .01

To evaluate this hypothesis, a sequential multiple regression analysis was conducted to explain the criterion variable of overall physical self-worth from the four subdomains of sport competence, physical conditioning, body attractiveness, and physical strength. Overall physical self-worth was regressed on sport competence, physical conditioning, body attractiveness, physical strength, exercise dummy variable, and sport participation dummy variable. The overall regression was statistically significant:  $F(3, 130) = 109.12, p < .001$ . The four PSPP subdomains explained 77% ( $R^2 = .77$ ) of the variance in overall physical self-worth. Because of the high amount of variance explained in the initial model, a significant change in  $R^2$  was not reported with the addition of the exercise participation and sport competition dummy variables or the interaction terms. Only the subdomains of body attractiveness and physical strength were statistically significant predictors of college females' overall physical self-worth. The beta weights, standardized beta weights, zero-order correlations, and semi-partial correlations for the

four PSPP subdomains are presented in Table 4.3. The results of the regression did not support the hypothesis that the relationship between the PSPP subdomains and the PSPP domain of overall physical self-worth would be stronger for athletes compared to exercisers, athletes compared to non-exercisers, and exercisers compared to non-exercisers.

Table 4.3

*Multiple Regression Analysis for Overall Physical Self-Worth*

PSPP Subscale	b	$\beta$	Zero-Order	Part
Body Attractiveness	.66**	.68**	.83	.56
Physical Strength	.22**	.20**	.57	.14
Physical Conditioning	.11	.12	.66	.07
Sport Competence	.03	.03	.48	.02

*Note.* \* $p < .01$ ,  $R^2 = .77$

### Self-Perception Group Differences

Hypotheses 2 through 13 addressed whether differences existed on the PSPP subdomains between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers. A Multivariate Analysis of Variance determined whether there was a significant effect of exercise participation and sport competition on the four subdomains taken together. Results showed a significant multivariate effect of sport competition and exercise participation on the four PSPP subdomains, Wilks'  $\Lambda = .424$ ,  $F(4,129) = 17.256$ . The multivariate  $\eta^2 = .35$  indicated 35% of the variance in the dependent variable was associated with the group factors of sport competition and exercise participation. Table 4.4 shows the means and standard deviations of the dependent variables for the three groups. Since the omnibus test was significant and *a priori* hypotheses proposed specific hypotheses about group differences, univariate follow-up tests

were conducted. To protect against Type I error when conducting multiple hypotheses tests, the criterion for significance was adjusted using the Bonferroni method  $(.05/12) = .004$  for follow-up analyses.

Table 4.4

*Means and Standard Deviations on the Four PSPP Subdomains for the Three Groups*

PSPP Subdomain	Group	Mean	Standard Deviation
Body Attractiveness	Athlete	2.67	.79
	Exerciser	2.54	.71
	Non-Exerciser	2.22	.83
Physical Conditioning	Athlete	3.22	.63
	Exerciser	2.94	.60
	Non-Exerciser	1.94	.64
Physical Strength	Athlete	3.10	.65
	Exerciser	2.63	.59
	Non-Exerciser	2.12	.55
Sport Competence	Athlete	3.10	.66
	Exerciser	2.24	.74
	Non-Exerciser	1.84	.68

## exerciser

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*Note.* Total N = 135 female college students

**Hypothesis 2.** Hypothesis 2 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of their sport competence than did female college students who participated in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions on the dependent variable of sport competence than female exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the athletes group had significantly higher self-perceptions on the subdomain of sports competence compared to the exerciser group,  $F(1, 86) = 32.03$ ,  $p < .001$ ,  $\eta^2 = .27$ . The results of the univariate Analysis of Variance supported the hypothesis that female athletes perceived their sport competence more positively than female exercisers did. Table 4.5 shows group differences on the four PSPP subdomains across the three groups: athletes; exercisers; and non-exercisers.

Table 4.5

*PSPP Subdomain Group Differences*

PSPP Subdomain	Group Differences
Sport Competence	Athletes > Exercisers, Non-Exercisers
Physical Conditioning	Athletes, Exercisers > Non-Exercisers
Body Attractiveness	Athletes = Exercisers = Non-Exercisers
Physical Strength	Athletes > Exercisers > Non-Exercisers

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**Hypothesis 3.** Hypothesis 3 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of sport competence than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of sport competence than did female non-exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, results showed significantly higher self-perceptions on the subdomain of sports competence for the athlete group compared to the non-exerciser group,  $F(1, 85) = 75.56$ ,  $p < .001$ ,  $\eta^2 = .471$ . The results of the univariate Analysis of Variance provided evidence to support the hypothesis that female athletes perceived their sport competence more positively than did non-exercisers.

**Hypothesis 4.** Hypothesis 4 proposed that female college students who engaged in regular physical activity as defined by the ACSM had significantly higher (i.e., more positive) self-perceptions of sport competence than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female exercisers had higher self-perceptions of sport competence, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, exercisers' self-perceptions of sport competence were not significantly different than those of non-exercisers,  $F(1, 93) = 7.48$ ,  $p = .007$ ,  $\eta^2 = .07$ ; therefore, this hypothesis was not supported.

**Hypothesis 5.** Hypothesis 5 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of physical conditioning than did female college students who participated in regular physical activity as defined by the ACSM. To

investigate whether female athletes had higher self-perceptions of physical conditioning than female exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, athletes' self-perceptions of physical conditioning were not significantly different than exercisers,  $F(1, 86) = 4.579$ ,  $p = .035$ ,  $\eta^2 = .05$ ; therefore, this hypothesis was not supported.

**Hypothesis 6.** Hypothesis 6 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of physical conditioning than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of physical conditioning than female non-exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance level, the athlete group had significantly higher self-perceptions on the subdomain of physical conditioning compared to the non-exerciser group,  $F(1, 85) = 88.61$ ,  $p < .001$ ,  $\eta^2 = .51$ . The results of the one-way univariate Analysis of Variance supported the hypothesis that females intercollegiate athletes perceived their physical conditioning more positively than did female non-athletes.

**Hypothesis 7.** Hypothesis 7 proposed that female college students who engaged in regular physical activity as defined by the ACSM had significantly higher (i.e., more positive) self-perceptions of physical conditioning than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female exercisers had higher self-perceptions of physical conditioning than female non-exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the exercisers group reported

significantly higher self-perceptions on the subdomain of physical conditioning compared to the non-exerciser group,  $F(1, 93) = 61.89$ ,  $p < .001$ ,  $\eta^2 = .40$ . Results supported the hypothesis that higher self-perceptions on the subscale of physical conditioning would be reported by exercisers compared to non-exercisers.

**Hypothesis 8.** Hypothesis 8 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of body attractiveness than did female college students who participated in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of body attractiveness than female exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the hypothesis was not supported because the athlete group did not report significantly higher self-perceptions on the subdomain of body attractiveness compared to the exerciser group,  $F(1, 86) = .689$ ,  $p = .409$ ,  $\eta^2 = .01$ .

**Hypothesis 9.** Hypothesis 9 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of body attractiveness than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of body attractiveness than did female non-exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the athlete group did not report significantly higher self-perceptions on the subdomain of body attractiveness compared to the non-exerciser group,  $F(1, 85) = 6.70$ ,  $p = .011$ ,  $\eta^2 = .07$ . As a result, the hypothesis was not supported.

**Hypothesis 10.** Hypothesis 10 proposed that female college students who engaged in regular physical activity as defined by the ACSM had significantly higher (i.e., more positive) self-perceptions of body attractiveness than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female exercisers had improved self-perceptions of body attractiveness than non-exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the exerciser group did not report significantly higher self-perceptions on the subdomain of body attractiveness compared to the non-exerciser group,  $F(1, 93) = 4.10$ ,  $p = .046$ ,  $\eta^2 = .04$ ; therefore, the hypothesis was not supported.

**Hypothesis 11.** Hypothesis 11 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of physical strength than did female college students who participated in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of physical strength than female exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the hypothesis was supported,  $F(1, 86) = 12.96$ ,  $p = .001$ ,  $\eta^2 = .13$ . The athlete group reported significantly more positive self-perceptions on the subdomain of physical strength than did the exerciser group.

**Hypothesis 12.** Hypothesis 12 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of physical strength than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of physical strength than female

exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the hypothesis was supported  $F(1, 85) = 58.47, p < .001, \eta^2 = .41$ . The athlete group reported significantly more positive self-perceptions of physical strength than did the non-exerciser group.

**Hypothesis 13.** Hypothesis 13 proposed that female college students who engaged in regular physical activity as defined by the ACSM had significantly higher (i.e., more positive) self-perceptions of physical strength than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female exercisers had higher self-perceptions of physical strength than female non-exercisers, a one-way Analysis of Variance univariate procedure was conducted as a follow-up test to the Multivariate Analysis of Variance. Using .004 as the criterion for significance, the univariate Analysis of Variance was significant,  $F(1, 93) = 18.74, p < .001, \eta^2 = .17$ . As a result, the hypothesis that exercisers perceived their physical strength more positively than did non-exercisers was supported.

### **Overall Physical Self-Worth Group Differences**

Hypothesis 14 through hypothesis 16 addressed whether differences existed on the domain construct of overall physical self-worth between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers. The first part of this procedure was an Analysis of Variance omnibus test that compared athletes, exercisers, and non-exercisers on overall physical self-worth simultaneously. Results showed a significant finding,  $F(2,132) = 11.09, p < .001, \eta^2 = .14$ . Since the omnibus test was significant and *a priori* hypotheses proposed specific hypotheses about group differences, pairwise follow-up tests were conducted. To protect against Type I error when conducting multiple hypotheses tests to answer hypotheses

14 through 16, the criterion for significance was adjusted using the Bonferroni method  $(.05/3) = .016$  for follow-up analyses.

**Hypothesis 14.** Hypothesis 14 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of overall physical self-worth than did female college students who participated in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of overall physical self-worth than female exercisers, pairwise follow-up tests were conducted as a follow up to the Analysis of Variance. Using .016 as the criterion for significance, athletes did not have significantly more positive overall physical self-worth than exercisers,  $F(2, 132) = 11.09, p = .349$ . Therefore, the hypothesis was rejected.

**Hypothesis 15.** Hypothesis 15 proposed that female intercollegiate athletes had significantly higher (i.e., more positive) self-perceptions of overall physical self-worth than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female athletes had higher self-perceptions of overall physical self-worth than female non-exercisers, pairwise follow-up tests were conducted as a follow up to the Analysis of Variance. Using .016 as the criterion for significance, athletes had significantly more positive overall physical self-worth than did non-exercisers,  $F(2, 132) = 11.09, p < .001$ . Therefore, the hypothesis was supported.

**Hypothesis 16.** Hypothesis 16 proposed that female college students who engaged in regular physical activity as defined by the ACSM had significantly higher (i.e., more positive) self-perceptions of overall physical self-worth than female college students who did not participate in regular physical activity as defined by the ACSM. To investigate whether female exercisers had higher self-perceptions of overall physical self-worth than female non-exercisers,

pairwise follow-up tests were conducted as a follow up to the Analysis of Variance. Using .016 as the criterion for significance, follow-up tests found significant differences,  $F(2, 132) = 11.09$ ,  $p = .006$ . Therefore, the hypothesis that exercisers had significantly more positive overall physical self-worth than non-exercisers was supported.

### **Summary of Findings**

Results indicated clear self-perception differences of the four PSPP subdomains of overall physical self-worth between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers. To summarize, analyses revealed that some subdomains of overall physical self-worth could be improved through exercise participation and sport competition, while no improvement was found for the subdomain of body attractiveness. More specifically, when the athlete group was compared to the non-exerciser group, athletes reported statistically significant positive results on the subdomains of sport competence, physical conditioning, and physical strength but not on the subdomain of body attractiveness. Analyses between the exerciser group and the non-exerciser group found statistically significant positive differences on the physical conditioning and physical strength subscales, but not on the sport competence and body attractiveness subscale. Sport competition and exercise participation did not increase scores on self-perceptions of body attractiveness among college females when they exercised or competed in sports.

Even though all three groups reported their lowest mean scores on the subdomain of body attractiveness, multiple regression results reported body attractiveness along with the subdomain of physical strength as the only significant contributor to the criterion of overall physical self-worth across all three groups. The group variables for exercise participation and sport competition did not increase the amount of variance explained in college females' overall

physical self-worth. The next chapter will discuss these findings in greater detail and discuss possible strategies to improve sport and exercise participation during the college years.

## **Chapter 5**

### **Discussion**

The purpose of this study was to investigate how female college students who competed in sports, participated in exercise, or did not participate in exercise perceived their physical selves and how these groups compared with each other in the four subdomains of sport competence, physical conditioning, body attractiveness, and physical strength and the domain of overall physical self-worth. College females who more positively perceived their physical selves showed more advancement in educational, career, and life planning, while females who perceived their bodies negatively often struggled with normal developmental tasks during college (Fox, 1997b; Harris, 1995). Therefore, the focus of this study was to further understand self-perception differences in four subdomains measured by the Physical Self-Perception Profile (PSPP) between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers and investigate the influence of each of these four subdomains on college females' physical self-worth.

Sport competition and exercise participation were found to improve self-perceptions of overall physical self-worth, possibly by combating societal messages about the importance of body attractiveness. For example, female athletes and exercisers reported higher mean scores on overall physical worth than did non-exercisers. Since no group differences were found on self-perceptions of body attractiveness, it was concluded that for the college females' in this study, their physical self-worth depended largely on self-perceptions physical strength. Since the subdomains of physical strength and body attractiveness were found to be the two best predictors of overall physical self-worth, higher self-perceptions of physical strength could help balance out negative self-perceptions of body attractiveness among college females. Since negative self-

perceptions of appearance, according to Harris (1995), have been shown as likely to hinder identity development among college females, this suggested the need to find strategies to help females view their bodies more positively. The findings in this study about college females' physical self-perceptions will be compared to the literature in the next section.

### **The Relationship of PSPP Subdomains with Overall Physical Self-Worth**

The first research question sought to determine whether the relationship between the four PSPP subdomains and the domain of overall physical self-worth would be stronger for athletes compared to exercisers, athletes compared to non-exercisers, and exercisers compared to non-exercisers. Body attractiveness and physical strength were the primary predictors of college females' self-perceptions of physical self-worth across all three groups. That is, female athletes, exercisers, and non-exercisers who perceived their body attractiveness and physical strength positively were more likely to perceive their overall physical self more positively.

The finding that body attractiveness was a primary factor in the make-up of college females' physical self-worth supported the research of Fox and Corbin (1989) and Hayes et al. (1999). Delene and Browgowicz (1990), Page and Fox (1997), and others concluded that college females had a preoccupation with outward appearances. These results were not surprising because of societal pressures faced by females beginning at a young age to conform to female gender roles that included a thin, lean, and beautiful appearance (Rodin, Silberstein, & Striegel-Moore, 1985). When females conformed by wearing make-up and fixing their hair during childhood and adolescence, parents gave them compliments and praise. During the college years, females often received positive attention and were seen as more attractive when they wore fashionable and feminine clothes and presented a thin figure. Some sororities, for example, recruited members based on physical appearances. Furthermore, college females frequently

were judged by their appearances when meeting and becoming friends with peers in classes or residence halls, and many college females perceived their attractiveness as important when exploring potential romantic partners during the emerging adult years. However, when college females explored their identities and experienced feelings of instability, lack of physical attractiveness may have negatively affected their feelings of self-worth.

When college females relied on self-perceptions of body attractiveness as a basis for their physical self-worth, they often participated in unhealthy behaviors in search of positive feedback about their appearances. Some females, for example, engaged in disordered eating in trying to portray a thin body leading to receiving positive feedback from others. Some females engaged in risky sexual behaviors and consumed more alcohol while seeking male attention and positive reinforcement about their appearances. Even though college females relied primarily on self-perceptions of body attractiveness to form overall physical self-worth, a college female's view of her physical self also was dependent on how she perceived her physical strength.

The finding that physical strength was a significant factor in the make-up of college females' physical self-worth was expected because physical strength has become a desirable attribute for many females. Athlete role models such as tennis champion Serena Williams or a soccer star Abby Wambach provided role models for athletes and exercisers. Following the lead of strong, successful female athlete role models, many athletes expressed pride about muscles that provided competitive advantages. In addition to athletes, many female exercisers perceived their muscles positively when they engaged in individual weight lifting and participated in group exercise classes.

On the other hand, these findings were unexpected because past studies (Fox & Corbin, 1989; Hayes et al., 1999) that used the PSPP did not report physical strength as a statistically

significant positive predictor of overall physical self-worth. In fact, Hayes et al. (1999) reported body attractiveness and physical conditioning as significant positive predictors of college females' physical self-worth. However, the results of Hayes et al. (1999) were reported over 10 years ago among active and non-active college females who were unlikely to perceive physical strength as positively as did athletes and exercisers in the current study. Possibly because society has become more accepting of strong women, especially for physical performance purposes, the current study found a statistically significant positive relationship between college females' physical strength and overall physical self-worth for the athlete group and exerciser group. However, non-exercisers perceived their physical strength significantly lower than either of the other groups in the current study.

It also is important to note that a correlation analysis reported statistically significant relationships between physical conditioning and overall physical self-worth and between physical strength and overall physical self-worth. However, a large portion of the relationship between physical conditioning and overall physical self-worth overlapped with body attractiveness. In the current study, therefore, after controlling for the effects of the other subdomains, physical strength was a significant positive predictor of overall physical self-worth while physical conditioning was not a statistically significant positive predictor.

A further reason for the differences in the current study's findings and prior literature could be due to demographic differences in participants. Past studies using the PSPP to examine college females' physical self-perceptions focused on active versus non-active females. The current study classified female college students as exercisers if they reported meeting the American College of Sports Medicine's recommendations for participation in regular exercise. The athletes surveyed in this study competed at an institution that competed in the National

Collegiate Athletic Association (NCAA) Division I whose coaches recruited highly talented athletes. It is assumed that the level of athletic competition or exercise participation impacted how important physical strength was to college females' physical self-worth. That is, a female college student who exercised daily or an athlete who engaged in daily, structured work-outs was more likely to include physical strength as an important component of her physical self-esteem than a female who participated in leisurely campus walks with friends to class.

To summarize the findings of the first purpose, body attractiveness and physical strength were the primary positive predictors of overall physical self-worth for athletes, exercisers, and non-exercisers. From a practical perspective, female college students continued to rely primarily on self-perceptions of body attractiveness to define their senses of overall physical self-worth. On the other hand, college females' who perceived their physical strength positively also were likely to perceive their overall physical self-worth more positively. Female college students who engaged in exercise participation and sport competition may have had more opportunities to feel positive about their physical strength through physical achievements. As a result, sport competition and exercise participation, which improved physical strength, could have contributed to college females perceiving their physical self-worth more positively.

### **Self-Perception Group Differences**

The second purpose of this study sought to determine whether group differences in the four subdomains and overall physical self-worth existed between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers. As expected, athletes in the current study were more likely to positively perceive their physical self-worth than were exercisers and non-exercisers; also, exercisers more positively perceived their physical self-worth than did non-exercisers. An additional benefit for female college students from exercise participation and

sport competition included a more positive view of their physical conditioning and physical strength. Higher physical self-worth could increase college females' confidence as they transitioned through the emerging adult years. This section will analyze why sport competition, exercise participation, or non-exercise participation did or did not improve self-perceptions in the four PSPP subdomains and overall physical self-worth among college females.

### **Sport Competence.**

Results in the current study supported the findings by Curry, Rehm, and Bernuth (1997) who reported that college athletes had higher athletic competence than non-athletes. The female athletes in the current study were among a very small percentage of high school athletes who received grants-in-aids in exchange for competing for a NCAA Division I institution. From a young age, these females often were more successful athletes and more talented than their friends. By high school, these females had become accustomed to being applauded for their superior sport skills, were recruited by coaches of select or travel teams, and benefited from instruction by knowledgeable coaches. Now as intercollegiate athletes, many were respected by their peers for their sport successes and, as a result, felt confident in their sport competencies compared to female college exercisers and non-exercisers.

Similarities reported between exercisers' and non-exercisers' self-perceptions of sport competence could be because both groups were not currently engaged in organized sport practices and tournaments. Because the scope of the current study did not measure participation in youth or interscholastic sports, it was not possible to determine whether former high school athletes and former high school non-athletes transitioned into exercisers or non-exercisers during the emerging adult years.

Some former high school athletes may have transitioned into non-exercisers because they did not know how to schedule time to exercise when it was not incorporated into their daily schedules by coaches. Others may have chosen not to engage in exercise due to burnout from years of mandatory sport competition. However, many college females who did not engage in interscholastic sport competition could have transitioned into exercisers. For example, some college females may have experienced positive peer pressure from peers to go the campus recreation center. Furthermore, a multitude of available exercise programs and classes could have motivated former non-athletes to become more physically active.

Exercise programs offered at campus recreation centers also have included recreational sport competition, which could have positively influenced some exercisers' self-perceptions of sport competence. When female exercisers engaged in intramural leagues or sport clubs, they were more likely to maintain confidence in their sport skills compared to other college females whose daily exercise included running on a treadmill or riding a stationary bicycle. A former high school athlete who played basketball three times a week likely perceived her sport competence more positively even though she no longer competed in sports. In the current study, for example, over 70% of the exerciser group participants engaged in individual exercise (i.e., running; walking; weight lifting; using an elliptical trainer; working out on a stairmaster or bike; and climbing the rock wall); only 6% of females in the exerciser group participated in sport clubs, intramurals, and team sports. The types of activities reported by the current study's sample of exercisers (i.e., engaged in non-competitive activities) explained why female exercisers might not have perceived their sport competence more positively than non-exercisers, as reported by Kennedy and Reis (1995). The sport competence of female college exercisers and

non-exercisers may have been established prior to college but more positive perceptions of sport competence persisted because of continued exercise participation during college.

### **Physical Conditioning.**

As a group, athletes did not perceive their physical conditioning any more positively than did females in the exerciser group. Athletes' and exercisers' self-perceptions of physical conditioning likely improved when they received positive reinforcement from teammates, coaches, group exercise instructors, and personal trainers. In the past, female exercisers in college may not have experienced similar feelings of camaraderie and support as did intercollegiate athletes. The expansion of opportunities for exercisers, however, provided greater opportunities for female exercisers to experience positive reinforcement from peers and fitness leaders that previously only athletes typically received. For example, participation in a variety of group exercise classes, intramural sport leagues, and inexpensive personal training sessions allowed females to become part of communities of females who bonded through the enjoyment of exercise (Fox, 2000). When female college students belonged to exercise or athletic communities where they received encouragement and experienced positively rewarding peer interaction, this encouraged the development and maintenance of physical conditioning

Feelings of support and encouragement may have led to similar self-perceptions of physical conditioning among athletes and exercisers even though fitness goals differed for the two groups. Fitness goals for exercisers may have included completing a two-mile run or lifting 10-pound weights throughout an entire 60-minute exercise class. Because athletes knew a competitive advantage was gained through achieving high levels of skill-related physical fitness, a training goal for an athlete may have been more sport specific, such as hitting 20 tennis volleys under 1 minute to increase reaction time. According to Martin and Lichtenberger (2002),

females who experienced physical improvements reported increased feelings of success and satisfaction. Therefore, the particular accomplishment seemed not as important for improving self-perceptions of physical conditioning as did receiving encouragement and achieving a desired goal.

College female athletes and exercisers placed an emphasis on their physical conditioning, unlike the group of non-exercisers. The current study found that athletes and exercisers more positively perceived their physical conditioning than did non-exercisers. The current findings supported prior research by Caruso and Gill (1992), Fox (2000), and Blinde et al. (1993) who found exercise participation and sport competition led to increased physical fitness and overall physical conditioning.

#### **Body Attractiveness.**

The current study found no significant differences in self-perceptions of body attractiveness among the three groups. College females seemed to respond similarly to social pressures whether they were athletes, exercisers, or non-exercisers as each group continued similarly to conform to societal expectations. While athletes' perceptions of attractiveness may have been associated with muscle mass and definition with very little body fat, exercisers' and non-exercisers' self-perceptions of body attractiveness may have emphasized lean bodies without well-defined musculature.

The finding of generally low self-perceptions of body attractiveness for each group paralleled that found by Delene and Brogowicz (1990), Lowery et al. (2005), and Mintz and Betz (1988). On a scale of one to four, with one and two being negative and three and four being positive self-image with respect to body attractiveness, females tended slightly toward the positive; but the average mean score of all three groups was 2.5, which was the lowest of the

PSPP subdomains. The societal ideal may have been different for the groups, but females within each group clearly experienced similar levels of body dissatisfaction.

Female athletes faced unique pressures compared to other college females about their bodies. Coaches and a sport nutritionist strongly encouraged athletes to work toward and maintain certain weights and body mass indexes appropriate for their sports. When athletes struggled to lose weight or body fat, they often perceived themselves as fat. Furthermore, coaches reinforced athletes' negative thoughts when they commented about athletes' slow play or lack of stamina. External pressures from coaches and teammates were even higher for many lean-sport athletes than non-lean sport athletes whose training goals included lower amounts of body fat. While athletes may not have felt as much pressure to conform to a feminine ideal as non-athletes faced, athletes may have been pressured to obtain a body size believed to give their teams competitive advantages (McConnell, 2005; Sundgot-Borgen, 1994).

Because exercise participants did not focus on performance, their ideal images included thin, toned bodies but may have excluded well-defined muscles. In fact, many exercisers admitted to only engaging in cardiovascular exercise to decrease the likelihood of developing unsightly muscles that did not conform to the ideal they had for their bodies (Dworkin, 2003). It seemed that some college females used exercise to decrease their weight and fat leading to their being perceived by others as attractive and feminine. According to Kennedy and Reis (1995), some females used exercise to improve self-perceptions of attractiveness. Instead of exercising to relieve stress and improve overall health and wellness, exercise may have become an additional stressor for females because of its association with an ideal body image they were unable to attain.

Even though non-exercisers may have had similar expectations for their bodies as did exercisers, living non-active lifestyles made it more difficult to meet societal expectations unless they were genetically predisposed to thin, lean bodies. As a result, non-exercisers often felt an inability to meet societal expectations for their physical appearances and viewed their bodies negatively leading to high levels of body dissatisfaction. Unfortunately, body dissatisfaction has been shown by Polivy and Herman (2002) to be one of the main factors leading to disordered eating. Instead of expending energy on identity explorations, many females may have become disheartened that they were not as thin and attractive as many of their peers. As a result, many females disliked their bodies (Delene & Brogowicz, 1990; Lowery et al., 2005; Mintz & Betz, 1988).

### **Physical Strength.**

The strength training goals for athletes differed from the goals of exercisers. According to Krane et al. (2004), strength and muscularity were more expected among female athletes. Female athletes' training focused on sport-specific strength that gave them competitive advantages. When a female athlete set a record for rebounds in a basketball game or most kills in a volleyball game, she attributed some of her success to the improvements she made in her physical strength. When strength training contributed to winning, athletes often felt pride in their abilities.

Even though exercisers may not have measured improvements in their physical strength, they often noticed improvements in their abilities to train the same muscle groups for extended periods of time. Therefore, many exercisers felt accomplished when they did not become as fatigued as quickly or were able to move up from 10-pound weights to 12-pound weights. Additionally, female exercisers may have perceived improvements in their body composition or

ratio of muscle to fat. These benefits resulted in exercisers perceiving their physical strength more positively than did non-exercisers. Non-exercisers unintentionally may have improved their physical strength from walking to class, carrying groceries to their third floor apartment, or carrying a heavy backpack. However, without any type of training that offered opportunities to set measurable goals that resulted in noticeable physical improvements, non-exercisers may not have experienced feelings of pride about any physical strength gains.

### **Overall Physical Self-Worth.**

Female athletes' overall physical self-worth was not found to be statistically significantly different from exercisers' overall physical self-worth; non-exercisers' physical self-worth was statistically significantly lower than it was for athletes and exercisers. This study suggested that college females' physical self-worth benefited from engaging in exercise participation and sport competition. The intensity and type of physical training did not seem as important as college female exercisers feeling a sense of accomplishment, socializing with other peers, and receiving positive feedback from personal trainers and group exercise instructors. These results support a consensus in the literature that found participation in exercise and sport competition to increase self-perceptions of the physical self (Blinde et al., 1993; Bowker, 2006; Fox, 2000; Kennedy & Reis, 1995; Krane et al., 2004). Therefore, it seemed that an additional benefit for college females who exercised or competed in sports included a more positive view of their physical selves.

### **Summary**

This study expanded the literature on physical self-worth among female college students. Prior findings reported few differences between active college females' and non-active college females' views of their physical selves but did not include intercollegiate athletes in their studies.

The addition of athletes in the current sample, along with a stricter definition for exercisers, resulted in findings about physical self-perception differences between athletes and exercisers, athletes and non-exercisers, and exercisers and non-exercisers.

Across all three groups, self-perceptions of body attractiveness and physical strength were significant predictors of college females' overall physical self-worth. The subdomain of sport competence was not found to be a significant predictor of college females' overall physical self-worth. While physical conditioning was not a significant predictor, college females' self-perceptions of physical conditioning were strongly related to their self-perceptions of physical strength. Therefore, the current study found that college females who had more positive self-perceptions of body attractiveness, physical conditioning, and physical strength had higher perceptions of their overall physical self-worth.

Self-perceptions of body attractiveness, the main predictor of college females' physical self-worth, were similar across all three groups. Even when females exercised or competed in sports, their self-perceptions of body attractiveness did not improve. Therefore, it seemed that many college females based self-perceptions of body attractiveness on perceived discrepancies between their appearances and a societal ideal. For example, some exercisers and non-exercisers viewed their bodies negatively when their bodies did not conform to a thin, toned ideal, while athletes often viewed their bodies less positively due to conflicting pressures to appear athletic and feminine. The overall physical self-worth of college females relied primarily on self-perceptions of body attractiveness but also was formed through self-perceptions of physical strength.

The subdomain of physical strength was found to be the second strongest predictor of overall physical self-worth. Self-perceptions of physical strength were highest among females

who competed in sports followed by the self-perception of the exercise group. Furthermore, athletes likely perceived their physical strength even more positively than exercisers because they were not as concerned with developing strong muscles. Unlike negative self-perceptions of body attractiveness that often were based on attempting to meet unrealistic body sizes, self-improvements in physical strength resulted in significant physical fitness improvements and improved overall physical self-worth.

Even though the subdomain of physical conditioning was not a significant predictor of college female's physical self-worth, the current study found college females' self-perceptions of physical conditioning were related to their self-perceptions of physical strength. For example, college females who lifted heavier weights likely viewed themselves as more physically fit. Similarly, some college females who ran an additional mile could have perceived improvements in physical strength. The current findings and prior literature that reported the subdomain of physical conditioning to be a significant predictor have demonstrated its importance in the formation of college females' overall physical self-worth. Self-perceptions of physical conditioning and physical strength contributed to higher overall physical self-worth.

The current study found that college females' overall physical self-worth was formed primarily through self-perceptions of body attractiveness, physical conditioning, and physical strength. Body attractiveness was reported as the primary predictor of college females' overall physical self-worth, but females perceived their body attractiveness less positively than the other three subdomains. Even college females who competed in sports and participated in exercise reported similar self-perceptions of body attractiveness compared to non-exercisers and each other. Higher overall physical self-worth among athletes and exercisers resulted from perceiving more positively their physical strength and physical conditioning. Therefore, college females

who engaged in exercise participation and sport competition were more likely to positively perceive their physical selves through higher self-perceptions of physical strength and physical conditioning.

The results of the current study suggested that physical fitness achievements provided ways for college females to view their bodies positively instead of relying on whether other people viewed them as attractive. This study suggested that societal pressures combined with identity explorations and feelings of instability during the emerging adult college years made it increasingly difficult for athletes, exercisers, and non-exercisers to view their body attractiveness positively. Even female college students who exercised or competed in sports did not perceive their body attractiveness more positively than non-exercisers did. To be most beneficial, exercise programs and sport competition could help college females credit their bodies for their physical accomplishments and take pride in improving their physical and mental health.

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## Appendix A

**Approved by the Human Subjects Committee University of Kansas, Lawrence Campus (HSCL). Approval expires one year from 10/31/2011. HSCL #19694**

The Department of Health, Sports, & Exercise Sciences at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand physical self-worth among college females. This will entail your completion of a questionnaire. The questionnaire packet is expected to take approximately 10-15 minutes to complete.

The content of the questionnaires should cause no more discomfort than you would experience in your everyday life. Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of perceived sport competence, physical conditioning, body attractiveness, physical strength, and overall physical self-worth. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. It is possible, however, with Internet communications, that through intent or accident someone other than the intended recipient may see your response.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail. Completion of the survey indicates your willingness to participate in this project and that you are at least age eighteen. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429, write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, or email [irb@ku.edu](mailto:irb@ku.edu).

Sincerely,

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## Appendix B

### THE PHYSICAL SELF PERCEPTION PROFILE (PSPP)

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

First, decide which one of the two statements (on the left or on the right) BEST describes you. Then, go to that side of the statement and check if it is just "sort of true" or "really true" FOR YOU.

**BE SURE THAT YOU ANSWER ONCE FOR EACH QUESTION (NOT ONCE ON EACH SIDE)**

Really True for Me	Sort of True for Me	EXAMPLE	Sort of True for Me	Really True for Me		
<input type="checkbox"/>	<input type="checkbox"/>	Some people are very competitive	BUT	Others are not quite so competitive	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**REMEMBER to check only ONE of the four boxes.**

---

1	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are not very good when it comes to playing sports.	BUT	Others feel that they are really good at just about every sport	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	Some people are not very confident about their level of physical conditioning and fitness	BUT	Others always feel confident that they maintain excellent conditioning and fitness	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that compared to most, they have an attractive body	BUT	Others feel that compared to most, their body is not quite so attractive	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are physically stronger than most people of their sex	BUT	Others feel that they lack physical strength compared to most others of their sex	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel extremely proud of who they are and what they can do physically	BUT	Others are sometimes not quite so proud of who they are physically	<input type="checkbox"/>	<input type="checkbox"/>

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me	
6	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are among the best when it comes to athletic ability	BUT	Others feel that they are not among the most able when it comes to athletics	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	Some people make certain they take part in some form of regular vigorous physical exercise	BUT	Others don't often manage to keep up regular vigorous physical exercise	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they have difficulty maintaining an attractive body	BUT	Others feel that they are easily able to keep their bodies looking attractive	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that their muscles are much stronger than most others of their sex	BUT	Others feel that on the whole their muscles are not quite so strong as most others of their sex	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	Some people are sometimes not so happy with the way they are or what they can do physically	BUT	Others always feel happy about the kind of person they are physically	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	Some people are not quite so confident when it comes to taking part in sports activities	BUT	Others are among the most confident when it comes to taking part in sports activities	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	Some people do not usually have a high level of stamina and fitness	BUT	Others always maintain a high level of stamina and fitness	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel embarrassed by their bodies when it comes to wearing few clothes	BUT	Others do not feel embarrassed by their bodies when it comes to wearing few clothes	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	When it comes to situations requiring strength some people are	BUT	When it comes to situations requiring strength some people are	<input type="checkbox"/>	<input type="checkbox"/>

	Really True for Me	Sort of True for Me	one of the first to step forward	BUT	one of the last to step forward	Sort of True for Me	Really True for Me
15	<input type="checkbox"/>	<input type="checkbox"/>	When it comes to the physical side of themselves some people do not feel very confident	BUT	Others seem to have a real sense of confidence in the physical side of themselves	<input type="checkbox"/>	<input type="checkbox"/>
16	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are always one of the best when it comes to joining in sports activities	BUT	Others feel that they are not one of the best when it comes to joining in sports activities	<input type="checkbox"/>	<input type="checkbox"/>
17	<input type="checkbox"/>	<input type="checkbox"/>	Some people tend to feel a little uneasy in fitness and exercise settings	BUT	Others feel confident and at ease at all times in fitness and exercise settings	<input type="checkbox"/>	<input type="checkbox"/>
18	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are often admired because their physique or figure is considered attractive	BUT	Others rarely feel that they receive admiration for the way their body looks	<input type="checkbox"/>	<input type="checkbox"/>
19	<input type="checkbox"/>	<input type="checkbox"/>	Some people tend to lack confidence when it comes to their strength	BUT	Others are extremely confident when it comes to their physical strength	<input type="checkbox"/>	<input type="checkbox"/>
20	<input type="checkbox"/>	<input type="checkbox"/>	Some people always have a real positive feeling about the physical side of themselves	BUT	Others sometimes do not feel positive about the physical side of themselves	<input type="checkbox"/>	<input type="checkbox"/>
21	<input type="checkbox"/>	<input type="checkbox"/>	Some people are sometimes a little slower than most when it comes to learning new skills in a sports situation	BUT	Others have always seemed to be among the quickest when it comes to learning new sports skills	<input type="checkbox"/>	<input type="checkbox"/>
22	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel extremely confident about their ability to maintain regular exercise and physical condition	BUT	Others don't feel quite so confident about their ability to maintain regular exercise and physical condition	<input type="checkbox"/>	<input type="checkbox"/>

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me	
23	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that compared to most, their bodies do not look in the best of shape	BUT	Others feel that compared to most their bodies always look in excellent physical shape	<input type="checkbox"/>	<input type="checkbox"/>
24	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are very strong and have well developed muscles compared to most people	BUT	Others feel that they are not so strong and their muscles are not very well developed	<input type="checkbox"/>	<input type="checkbox"/>
25	<input type="checkbox"/>	<input type="checkbox"/>	Some people wish that they could have more respect for their physical selves	BUT	Others always have great respect for their physical selves	<input type="checkbox"/>	<input type="checkbox"/>
26	<input type="checkbox"/>	<input type="checkbox"/>	Given the chance, some people are always one of the first to join in sports activities	BUT	Other people sometimes hold back and are not usually among the first to join in sports	<input type="checkbox"/>	<input type="checkbox"/>
27	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that compared to most they always maintain a high level of physical conditioning	BUT	Others feel that compared to most their level of physical conditioning is not usually so high	<input type="checkbox"/>	<input type="checkbox"/>
28	<input type="checkbox"/>	<input type="checkbox"/>	Some people are extremely confident about the appearance of their body	BUT	Others are a little self-conscious about the appearance of their bodies	<input type="checkbox"/>	<input type="checkbox"/>
29	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are not as good as most at dealing with situations requiring physical strength	BUT	Others feel that they are among the best at dealing with situations which require physical strength	<input type="checkbox"/>	<input type="checkbox"/>
30	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel extremely satisfied with the kind of person they are physically	BUT	Others sometimes feel a little dissatisfied with their physical selves	<input type="checkbox"/>	<input type="checkbox"/>

**31) Age: (select one)**

- 17 (If you are 17, please do not continue with the survey)
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26 (If you are 26 or older, please do not continue with the survey)

**32) What is your current year of enrollment in college (Select one)?**

- 1<sup>st</sup> Year
- 2<sup>nd</sup> Year
- 3<sup>rd</sup> Year
- 4<sup>th</sup> Year
- 5<sup>th</sup> Year
- 6<sup>th</sup> Year

**33) Ethnicity**

- White
- Black or African-American
- Hispanic or Latino
- American Indian or Alaska Native
- Native Hawaiian or Pacific Islander
- Other

**34) Which of the following KU intercollegiate athletic team do you participate in?**

**(If you are a member of more than one team, please check all that apply.)**

- Basketball
- Cross Country
- Women's Golf
- Rowing
- Soccer
- Softball
- Swimming & Diving
- Tennis
- Track & Field
- Volleyball
- None

*If you answered question D that you are an intercollegiate athlete, please skip questions*

*E, F, G, & H and proceed to next section.*

- 35) The American College of Sports Medicine (ACSM) defines exercise as engaging in moderate physical activity for 30 minutes 5 times per week or engaging in vigorous physical activity for 20 minutes 3 times per week, or a combination of both. According to this definition, do you consider yourself a regular exerciser?**

- Yes  
 No

*If you answered “no” to question E, please skip questions F & G and proceed to the next section.*

- 36) How many days per week do you typically exercise? (Exercise is defined as planned, structured, repetitive movements of the body intended specifically to improve or maintain physical fitness; this definition excludes normal daily life activities such as walking to class).**

- 0  
 1  
 2  
 3  
 4  
 5  
 6  
 7

- 37) When you exercise (defined as planned, structured, repetitive movements of the body intended specifically to improve or maintain physical fitness; this definition excludes normal daily life activities such as walking to class). On average, how many minutes do you exercise per session?**

- 1-19 minute(s)  
 20-29 minutes  
 30-39 minutes  
 40-49 minutes  
 50-59 minutes  
 >60 minutes

- 38) What are the main ways you engage in exercise? Check all that apply.**

- Sport Clubs (Please Specify) \_\_\_\_\_  
 Intramurals (Please Specify) \_\_\_\_\_

Group Exercise Classes (e.g., Aerobics, Body Toning, Body Pump, Boot Camp, Pilates, Kick-Boxing, Turbo- Kick, Yoga, Zumba)

Individual Exercise (e.g., Running, Walking, Weight lifting, Elliptical Machine, Stairmaster Biking; Rock Climbing Wall)

Individual Sports (Please Specify)\_\_\_\_\_

Team Sports (Please Specify)\_\_\_\_\_

Other (Please Specify)\_\_\_\_\_

