Physical Self-Concept and Athletic Identity among Former Collegiate Athletes: Examining the Influence on Self

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By
Jennifer K. Shannon

Glenn Good, Ph.D., Dissertation Supervisor

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

Physical Self-Concept and Athletic Identity among Former Collegiate Athletes:

Examining the Influence on Self

presented by Jennifer K. Shannon,

a candidate for the degree of Doctor of Philosophy in Counseling Psychology and hereby certify that, in their opinion, it is worthy of acceptance.

Glenn E. Good, Ph.D.
Department of Educational, School, and Counseling Psychology

Richard T. McGuire, Ph.D.
Department of Educational, School, and Counseling Psychology

Mary J. Heppner, Ph.D.
Department of Educational, School, and Counseling Psychology

Joe Johnston, Ph.D.
Department of Educational, School, and Counseling Psychology

Niels C. Beck, Ph.D.
Department of Psychiatry

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Jennifer K. Shannon
Dr. Glenn E. Good, Dissertation Supervisor

ABSTRACT

This study examined physical self-concept, global self-esteem, and athletic identity among former collegiate athletes. 308 former Division 1 NCAA collegiate athletes participated in the study. This study replicated findings that physical self-worth demonstrates a positive relation with global self-esteem. Athletic identity was shown to mediate the relation between physical self-concept and global self-esteem for former collegiate athletes. Athletic identity was also shown to mediate the relation between physical activity and physical self-concept. Athletic identity did not serve as a moderating variable for the entire sample, but was shown to moderate the relation between physical activity and physical self-concept for those no longer participating in their collegiate sport and those no longer identifying as an athlete. Athletic identity and global self-esteem demonstrated age-related differences. These findings suggest that there is some maintenance of athletic identity for many former collegiate athletes, and that identity remains influential in its association with physical self-concept.

Chapter I

Introduction

Many collegiate athletes have led a much different lifestyle than their peers in an existence enveloped in the world of sport. Numerous top athletes have devoted much of their childhood and adolescence to a life of athletics. As we consider the physical and emotional investments that occur, the construct of identity is critical to consider and expand beyond a unidimensional understanding. It is as if the body itself takes on an athletic identity, that of the "performing body" (Loland, 1999). To the athlete, their body carries a unique meaning and value, and essentially serves as a tool or an instrument to success and recognition. As a career in athletics tends to be limited by time and age, we must wonder what becomes of the "performing body" as a collegiate athlete's career inevitably comes to a close and for many, their body and its capabilities change. What occurs as that "performing body" begins to change and athletes potentially experience discrepancy between past and present investment and performance? As the body and its capacities have served as a foundation of success and identity, it follows that this experience and renegotiation with the body will have an impact on those athletes removed from the collegiate athletic environment.

Self-concept has been viewed as hierarchical, multidimensional, and constructed of a variety of roles, characteristics, and competencies, or 'sub-selves' (Shavelsosn, Hubner, & Stanton, 1976). Shavelson et al. (1976) described self-concept as individuals' self-perceptions of their experience and negotiations with their environment. Physical self-concept is thought to represent an overall perception of the physical self, based on general feelings of happiness, satisfaction, pride, respect, and confidence in the body and

its capacities. The Physical Self-Perception Profile Model (Fox & Corbin, 1989) posits that the subjective manner in which individuals appraise their physical selves will be reflected in the appraisal of their overall selves. Physical self-worth consistently demonstrates a positive relation with global self esteem. Physical self-worth is purported to mediate the relation between specific physical self-perceptions and global self-esteem.

The physical self is highlighted as particularly significant within sport participation and performance in the athletic world. This 'performing body' may take prominence in athletes' lives and become a critical component of the overall self. The body and physical self play pivotal roles in the construction of identity and therefore are central in the development of elite athletes' identities (Loland, 1999; Sparkes, 1998). In accordance, there is a strong emphasis on self-perceptions in the physical domain and a tendency to derive much of one's personal self-worth from physical activity and sport performance (Brewer, Van Raalte, & Linder, 1993). Supporting the prominence of physical self concept in athletes, Marsh, Perry, Horsley, and Roche (1995) found that athletes had higher physical self-concepts and global self-esteem than non-athletes. Even among athletes of various levels, elite athletes demonstrate the highest physical self-concept and global self-esteem, lending further support to the significance of the athletic role for high-level athletes (Marsh, Hey, Roche, & Perry, 1997).

As athletes invest in sport, they understandably ascribe psychological significance to their involvement in athletics. Athletic identity has been defined as "the degree to which an individual identifies with the athlete role" (Brewer et al., 1993, p. 237). Outcomes in the athletic domain will likely have a strong influence on the self-esteem, affect, and motivation of individuals with a strong athletic identity (i.e. individuals who

place a high value on athletics). A qualitative exploration revealed that physical appearance of the body and its physical capacities played an important part in identifying with the elite athlete role. Physical performance also served as a main source of identity support and avenue to enhance self-esteem (Stephen & Brewer, 2007). Through both physical performance and the appearance of the body, the self-definition as an athlete is strengthened and reinforced (Loland, 1999). Literature has consistently demonstrated the presence of athletic identity among athletes at all levels (Anderson, 2004; Brewer et al., 1993; Curry & Weaner, 1987; Good, Brewer, Petitpas, Van Raalte, & Mahar, 1993; Stephan & Brewer, 2007). Much of the research in this area has focused on the experience of distress among individuals with high levels of athletic identity that are injured or ending their athletic careers. It has been shown that a high degree of athletic identity is often associated with a difficult transition out of sport (Brewer et al., 1993; Pearson & Petitpas, 1990).

Despite a solid body of research examining the physical self-concept, global self-esteem, and athletic identity of current athletes, the available literature is sparse in regards to these constructs among former athletes. The research that does exist in this area has tended to focus on elite and professional athletes, rather than former college athletes (Drahota & Eitzen, 1998; Marsh, 1998; Marsh et al., 1997; Stephan, Bilard, Ninot, & Delignières, 2003a; Stephan, Torregrosa, & Sanchez, 2007). Perhaps the experience of collegiate athletes is different, as the time and investment may be less and the termination of the athletic career may be more easily anticipated due to predictable limited eligibility. Additionally, in the athletic retirement literature, the majority of studies explore the initial year of transition and neglect the remainder of the lifespan (e.g.

Lally, 2007; Stephan & Bilard, 2003; Stephan et al., 2003a; 2007). The present study intends to contribute to filling this void in the literature by utilizing a sample of former collegiate athletes who concluded their involvement in collegiate athletics in a period of time ranging from one to more than 60 years.

The experience of former athletes is important to consider as they often experience a host of bodily changes upon leaving competitive sport, including weight gain and loss of muscle (Koukouris, 1991), degradation of physical competencies (Drahota & Eitzen, 1998), bodily tensions, pain and tiredness (Stephan & Bilard, 2003). These bodily changes are mainly due to former athletes' drastic reduction of training and deregulation of eating habits experienced during the transition out of competitive sport. This bodily transition usually affects the physical self, central to athletes' identity and global self-esteem. Stephan et al. (2007) found that elite athletes in transition reported significantly lower perceived physical condition, sports competence, perceived physical attractiveness, physical self-worth, and global self-esteem in the first year out of sport as compared with current elite athletes. As the performing body begins to decline, these difficulties are associated with decreased feelings of pride, satisfaction, happiness, and confidence regarding the physical self (Stephan et al., 2007). Considering the dramatic changes one year after departure from intercollegiate athletics and the potential implications for well-being, it is important to extend these findings to former athletes across the lifespan.

There is a lack of understanding regarding which factors may influence the strength of the relation between physical self-concept and global self-esteem. More recently, the degree of importance or salience of individuals' physical self-concept has

been drawing attention. This idea is rooted in the notion that self-perceptions in areas perceived as more important to individuals, such as physical domains for athletes, will result in stronger relation with global self-esteem than will those areas viewed as less important (Fox, 1990; Marsh, 1993). Findings in the area of perceived importance within physical self concept have been equivocal and fraught with methodological weaknesses (Fox, 1997; Harter, 1990; 1996; Marsh, 1994; Marsh & Sonstroem, 1995). Perhaps, it is actually a function of athletic identity that predicts the influence of physical self-concept on global self-esteem. Brewer et al. (1993) used the construct of perceived importance to operationalize athletic identity. That conceptualization of athletic identity was based on the idea that individuals with strong athletic identity will attach a great deal of importance to the domain of sport and exercise and will be particularly attuned to self-perceptions in that domain. Utilizing this conceptualization, it was found that athletic identity may be related to, but not that same as, perceived importance within a larger construct of identity. It is believed that when athletic identity is a prominent component of individuals' self-concept that successful performances and outcomes will enhance global self-esteem (Callero, 1985). As individuals organize their multiple identities into a hierarchy of prominence, it is evident that more salient identities will often result in more time and effort to support them. In this case, self-esteem becomes based on the salience and prominence of that particular identity (Stryker & Serpe, 1982; Stryker & Statham, 1985). Thus, it is posited that the self evaluates the importance and level of commitment of exercise and athletic involvement. Kendzierski, Furr, and Schiavoni (1998) found that behavioral components were cited more frequently than affective components as contributors to athletic self-definition. Perceived commitment and perceived ability are

particularly important to self-definition, and for those who consider themselves highly committed to being athletic, it reasonable to expect this attribute to be highly salient (Anderson, 2004). It follows that former athletes who maintain some degree of athletic identity will encounter this identity salience and thus experience the influence of the relation of physical self-concept with global self-esteem.

Two theories lend themselves to support the potential maintenance of athletic identity and continued physical activity. Continuity Theory (Atchly, 1977) holds that activities, habits, and predispositions carry on from one life stage to the next, carrying over through transitions. Greendorfer and Blinde (1985) discovered that 75% of former collegiate athletes continued to participate in sports on some level, including informal physical activity, league or organized sport, and coaching. The end of formal sport careers did not necessarily result in the end of athletic involvement, thus sport often remains an important element in the lives of most of these former collegiate athletes. In Role Exit Theory (Edbaugh, 1988), a successful transition from one role to another depends on the merging of the past identity with the new identity. The idea of role exit has been applied directly to professional athletes, with the role exit being directly affected by the centrality of athletic role to overall sense of self. It was found that former professional athletes experience a large degree of role residual, in which they retain some of the athletic role despite a need to transition to a new role. In these cases, the role of the professional athlete is never exited completely (Drahota & Eitzen, 1998). From the perspective of role exit theory, we may tentatively presume that collegiate athletes will also retain some of their athletic identity into post-collegiate athletic retirement in the same way.

A final area of consideration in understanding the experience of the former athletes is that of discrepancy. Higgin's (1987) self-discrepancy model holds that discrepancy between the actual self and the ideal self leads to a decrease in self-esteem. This theory has been cited in explaining the lower self-esteem of former athletes (Stephan et al., 2003a). Thus, the perceived discrepancy between their current and former physical capacities has an influence on their perceptions of physical conditions and physical self-worth, which ultimately has an impact upon self-esteem. Discrepancy may play a role in the difficulties former athletes encounter towards their physical selves following retirement. Stephan et al. (2003a) found that physical self-worth and its subdomains, along with global self-esteem were all significantly lower for those athletes in retirement transition. The authors proposed that these changes may be attributed to the discrepancy between over-investment in physical activity and a more sedentary career accompanied by related bodily changes. These athletes appear to be vulnerable to decreased perceptions of competence, even when they continue to be involved in exercise. The physical changes may bring about the awareness that they are no longer as competent as when they were active, elite athletes. This awareness may result in a continuous reminder of the discrepancy between their former and current selves. The authors suggest that the global self-esteem of transitional athletes is lower as a result of the experience of the discrepancy between the former and current selves. They also note the potential influence of the loss of reinforcement from the social environment towards their bodies in regards to physical performance. Considering discrepancy provides a potentially useful window to understanding the mechanisms underlying the experience of retired athletes. In line with Higgin's (1987) Self-Discrepancy Theory, as athletes perceive a discrepancy

between their former and current selves in regard to physical capacities, physical self-worth and global self-esteem may be affected. This discrepancy may in part contribute to the influence athletic identity is hypothesized to have on physical self-esteem among former athletes. For athletes who do not continue to engage in physical activity that discrepancy may be influenced by the degree of athletic identity that is maintained. Likewise, those athletes who continue to engage in physical activity may not experience as great of discrepancy, but find the degree of influence on physical self-esteem differentially affected by athletic identity. Therefore a question is posed, as to whether athletic identity mediates or moderates the relation between physical activity and physical self-concept.

The experience of former athletes has been largely ignored in the field of sport psychology. As a field, we have developed extensive knowledge of athletes engaged in sport; however we have neglected to delve into the life experience following formal involvement in sport. There is a need to more clearly understand the experience of retired athletes to allow sport psychologists to be more effective and better serve athletes entering that transition period. A broader understanding of the relationship athletes have with their bodies will allow for a more thorough conceptualization of physical self-concept in a unique population, for whom the physical self may be highly salient. The exploration of the construct of athletic identity also serves as a valuable extension to existing literature, potentially affording a more complete understanding of the way in which athletic populations experience and perceive their bodies. The concept of maintaining athletic identity following retirement from sport is of interest as it may serve to affect behaviors and perceptions. Bringing many facets of physical self-concept

together and exploring those relations in a distinctive population will likely provide useful information to professionals working with athletes and former athletes, as well as address a gap in the current literature.

The purpose of this study is to provide an understanding of physical self-concept in former collegiate athletes and to extend the current literature addressing active athletes to the experience of former athletes. A strong positive relation between physical self-concept and global self-esteem has been observed for current athletes and these individuals tend to score higher on these constructs compared to non-athletes (Kamal, Blais, Kelly, & Ekstrand, 1995; Mahoney, 1989; Marsh et al., 1995; 1997). The goal of this study is to explore these constructs in a sample of former collegiate athletes and develop a further understanding of the relations of these constructs once the athletic career has ended. This study examines the construct of athletic identity as a potential mediating variable in the relation of physical self-concept to global self-esteem. Athletic identity has been identified as a prominent contributor to identity in active athletes (Brewer et al., 1993; Kerr & Dacyshyn, 2000; Lally, 2007; Miller & Kerr, 2000) and self-esteem is largely influenced by the saliency and centrality of a particular identity (Stryker & Serpe, 1982; Stryker & Statham, 1985). Thus this study will examine the degree to which the maintenance of athletic identity in former athletes mediates the relation between physical self-concept and global self-esteem.

In the current study, the following hypotheses will be tested:

1. Among former collegiate athletes, higher physical self concept is associated with higher global self-esteem.

2. For former collegiate athletes, athletic identity will mediate the relation between physical self worth and global self-esteem.

Additionally, an exploratory analysis will be conducted, as this study is compromised of a new population in this line of research, and currently there is a lack of research and evidence in the literature to make a strong prediction regarding the relations of these constructs. The following research questions will be explored:

1. For former collegiate athletes, does athletic identity moderate the relation between current physical activity and physical self-concept?
2. For former collegiate athletes, does athletic identity mediate the relation between current physical activity and physical self-concept?

Chapter II

Method

This chapter contains four subsections. The first section describes the characteristics of the participants. The second section describes the instruments employed. More specifically, the Physical Self-Perception Profile (PSPP), the Athletic Identity Measurement Scale (AIMS), the Rosenberg Self-Esteem Scale (RSE), and the International Physical Activity Questionnaire (IPAQ) will be described in detail. The procedures of the study will then be outlined, including participant recruitment and data collection. The fourth section describes the analyses conducted for each hypothesis or research question.

Participants

Participants represent a sample of former NCAA Division I athletes from a large public Division I university in the Midwest. These participants were recruited from a database of former athletes at this university, which yielded 2,093 e-mail addresses. Based on power analyses, this study required 76 participants at an alpha level of .05, or 108 participants at an alpha level of .01 in order to achieve a power of .80 (Cohen, 1992). Valid and usable data was provided by 308 participants, thus this sample provided a more than sufficient number of participants for adequate power. Ages of participants ranged from 23 to 88 years old (M = 50.00, SD = 15.4). The sample consisted of 218 males (70.8%) and 90 (29.2%) females. The majority of participants (277; 89.9%) identified as European-American. Detailed information regarding age, sex, and race is reported in Table 1. Participants represent all intercollegiate sports available at the institution (i.e., baseball, basketball, cross country, football, golf, gymnastics, soccer, softball, swimming

and diving, tennis, track and field, volleyball, and wrestling). The number of participants from each sport is reported in Table 1. All participants were collegiate athletic team members and have been retired from collegiate athletics for a minimum of one year. In this sample 301 (97.7%) participants reported graduating from college and most (259; 84.1%) reported that NCAA competition represented their highest level of competition. The majority of participants (288; 95.3%) reported that they are currently physically active, and 127 (41.2%) reported being involved in athletics in a non-physical role (e.g. coaching, officiating). Current involvement with their collegiate sport (e.g. a former NCAA swimmer continuing to swim) was reported by 114 (37.0%) and 222 (72.1%) consider themselves to be "an athlete today."

Instruments

Physical Self-Perception Profile. The Physical Self-Perception Profile (PSPP; Fox & Corbin, 1989) is an instrument designed to assess individuals' self-perceptions in the physical domain. The PSPP addresses the hierarchical nature and multidimensionality of the physical self. The PSPP contains 30 items in a four-choice structured alternative format, whereby two contrasting statements are presented for each item. An example of such statements is "some people do not usually have a high level of stamina and fitness" but "others always maintain a high level of stamina and fitness." Participants are asked to select which statement best describes them and then to select whether it is "sort of true for me" or "really true for me." This format is utilized to decrease social desirability response bias. In this way responses are scored from one to four, representing low self-perceptions to high self-perceptions. Higher scores indicate more positive self-perceptions in the physical domain.

The PSPP includes five subscales, each containing six items. The subscales are: (a) *Perceived Sport Competence,* which encompasses athletic ability, ability to learn sport, and confidence in sport, (b) *Physical Condition,* which describes condition, stamina, fitness, ability to maintain exercise, and confidence in an exercise setting, (c) *Attractive Body,* which includes attractive physique, ability to maintain an attractive body, and confidence in appearance, (d) *Strength,* which describes perceived strength, muscle development, and confidence in situations requiring strength, and (e) *Global Physical Self-Worth,* which includes the general feelings of pride, satisfaction, happiness, and confidence in the physical self.

Evidence supports the psychometric properties of the PSPP. Specifically, coefficient alphas ranging from .80 to .92 indicate moderate to good internal consistency (Fox, 1990; Fox & Corbin, 1989). Test-retest stability coefficients were .74 to .92 over 16 days and .81 to .88 over 23 days. Fox and Corbin (1989) found this instrument to be relatively unaffected by social desirability bias as measured by the Crowne-Marlow Social Desirability Scale (Crowne & Marlow, 1964).

Fox and Corbin (1989) provide support for the construct validity for the PSPP through the instruments accurate prediction of physical activity (seen as a related construct). The canonical correlation coefficients were .43 for males and .47 for females ($p < .001$), indicating that the PSPP scores are able to differentiate between active and non-active individuals. Factorial validity has been supported through both exploratory factor analysis and confirmatory factor analysis. With exploratory factor analyses, four of the factors explained 68.9% of the variance among subscales for females and 63.5% for males. Confirmatory factor analyses showed the fit of observed data to the model using

chi square values divided by degrees of freedom. For these analyses, values under 2 represent a good fit of data to the model. Scores in this analysis were 1.79 for females and 1.95 for males, demonstrating a good fit. Additionally, the overall coefficients of determination (.99 for females and .98 for males), represented the efficacy of the subscale items as a measures of the construct of physical self-worth. Taken together, there is evidence that physical self-worth functions as the superordinate construct among the subscales. Support has also been found for the validity of physical self-worth as a generalized outcome of evaluations across several physical subdomains. In a zero-order correlation, the strongest correlation was with self-esteem (.64 for females and .61 for males), while other subscales were .17 to .48. Further support is found from partial correlations demonstrating the mediating effects of physical self-worth. Additionally, multiple regression analysis indicated that the four subdomains which predict physical self-worth explained 69% of the variance for females and 68% of the variance for males.

It is also important to note that Sonstroem, Speliotis, and Fave (1992) provided support for the validity of the PSPP with a sample of older adults. Criterion validity was supported as the instrument differentiated exercisers (canonical r = .71 for females and .64 for males) from non-exercisers (r = .73 for females and .64 for males). In this sample, the subdomains accounted for 68.06% of the variance for females and 64.71% of the variance for males. The adult sample reported higher means than the previous college sample, but was determined to be an acceptable instrument for adults.

Athletic Identity Measurement Scale. The Athletic Identity Measurement Scale (AIMS; Brewer, Van Raalte, & Linder, 1993) was developed to assess the degree to which individuals identify with the athlete role. This instrument contains 10 items using a

7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores on this inventory indicate endorsement of a higher degree of internalized athletic identity. Items include statements such as, "I consider myself an athlete" and "I feel bad about myself when I do poorly in sport." Factor analysis revealed one single factor of athletic identity (eigenvalue = 6.03).

The AIMS has demonstrated good evidence supporting it's reliability and validity. Brewer et al. (1993) report coefficient alphas of .93 in the initial study and .87 and .81 in two follow-up studies. Additionally, a test-retest reliability coefficient of .89 was found over a 14-day period (Ostow, 1996). Corrected item-total correlations were above .45 for all items, and mostly around .70, indicating 11 items contributing to the total score. Construct validity was supported as the AIMS was positively correlated with measures of similar constructs, such as the *Importance of Sport Competence* subscale of the Perceived Importance Profile (PIP; Fox, 1990) (r = .83) and the Self-Role Scale (r = .61). There were also weaker, though still significant correlations with the other PIP measures (*importance of physical condition, importance of attractive body,* and *importance of physical strength)*. Convergent validity was also supported through significant correlations with the Sport Orientation Questionnaire (SOQ; Gill, Dzewaltowski, & Deeter, 1988). There were no significant correlations with the Rosenberg Self-Esteem scale (RSE; Rosenberg, 1965), finding athletic identity to be a distinct construct from self-esteem. Discriminant validity was also supported through a lack of significant correlations with athletic identity and variables such as physical self-esteem, perceived importance of fitness, perceived importance of body attractiveness,

perceived importance of strength and coaches' rating of skill among a sample of collegiate football players

Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is a widely used assessment of global self-esteem. This 10-item scale assesses acceptance, approval, and respect towards oneself. Items such as, "I feel that I have a number of good qualities" and "I feel I do not have much to be proud of" are answered on a four point Likert scale, with responses from 1 (*strongly agree*) to 4 (*strongly disagree*). Five of the items are reverse-scored, and a total score is obtained by adding the numerical values associated with each response. Higher scores are indicative of higher self-esteem, which is a single factor to emerge from this scale, $X^2(35) = 45.98$, $p = .10$ (Shevlin, Bunting, & Lewis, 1995). O'Brien (1985) also found support for the one-factor structure, with the single factor accounting for 52.8% of the variance.

Findings in the literature have demonstrated evidence supporting the psychometric properties of the RSE. Internal reliability has been supported as Wylie (1989) found coefficient alpha values of .72 to .92 across several studies inclusive of all ages, race, and gender. Test-retest reliability was $r = .82$ over a one-week period (Fleming & Courtney, 1984), $r = .85$ across two weeks (Silber & Tippet, 1965) and $r = .63$ across six months (Bryne, 1983). Item Response Theory was utilized to confirm that the 10 items of the scale adequately define self-esteem as a unidimensional trait and provide valid information, although not equally discriminating (Gray-Little, Williams, & Hancock, 1997). Additionally, multitrait-multimethod matrices have been employed to assess convergent validity (Bryne, 1983; Bryne & Shavelson, 1986) with multiple self-esteem measures. Convergent validity coefficients have ranged from .58 to .79, whereas

other measures reported coefficients of .37 to .42. Robins, Hendin, and Trzesriewski (2001) also found support for construct validity with the identification of positive correlations between the RSE and indicators of self-esteem such as perceptions of academic competence, intellect, social skills, athletic ability, and physical attractiveness.

International Physical Activity Questionnaire. The International Physical Activity Questionnaire (IPAQ; Craig et al., 2003) is an international questionnaire intended to collect physical activity data from adults. The Self-Report IPAQ-Long assesses physical activity occurring in the "last 7 days" across 4 domains, including: Leisure-Time Physical Activity; Domestic and Gardening (Yard) activities, Work-Related Physical Activity; and Transport-Related Physical Activity. There are 27 items included, which obtain information on activities undertaken and days per week, as well as hours and minutes per day of participation. The items provide domain-specific scores for walking, moderate-intensity, and vigorous-intensity activity within each of the four separate domains. Total scores, domain-specific scores, and activity-specific scores can all be calculated. Data will be reported as a continuous measure, and computed into MET (Metabolic Equivalent Task)-minutes/week. Computing METs involves weighting each activity by its energy requirements defined in METs. METs are multiples of the resting metabolic weight and a MET-minute is computed using the following equation: MET-min x (weight in kilograms/60 kilograms). MET values are derived from the Ainsworth et al. Compendium (2000), wherein an average MET score is derived from each activity (e.g. walking, moderate-intensity activities, vigorous-intensity activities). To analyze IPAQ data, the following values are used: Walking = 3.3 METs, Moderate-Intensity Activities = 4.0 METs, Vigorous-Intensity Activities = 8.0 METs, as well as additional domain-

specific items, such as chores, cycling, etc. Thus, a sample equation for continuous scores is: Walking MET-minutes/week = 3.3 x walking minutes x walking days. The same formula is applied for others activities using their respective MET values. Scores are summed with each domain and a Total Physical Activity score is calculated by summing the domain totals. Higher scores indicate higher levels of physical activity.

The IPAQ has demonstrated evidence supporting the reliability and validity of the instrument through extensive psychometric testing at 14 study centers in 12 countries, including countries considered "developing." Pooled data from the 14 centers demonstrated a test-retest reliability over 8 to 10 days of r = .81(95% CI, .79-.82) for the long, self-administered version of the IPAQ. One of the United States samples was as high as .96. Concurrent, or inter-method, validity between formats of the long and short versions of the IPAQ administered in the same day was demonstrated at r = .67 (95% CI, .64-.70). In a United States sample, the correlation was r = .78. Criterion validity comparing IPAQ and accelerometer data was modest at r = .33 (95% CI, .26-.39). Given the diversity of the sample and countries, this initial reliability and validity study concluded that evidence supported the IPAQ as a psychometrically acceptable instrument for the measure of physical activity (Craig et al., 2003).

In subsequent studies, concurrent and construct validity has been further supported. In a study by Hagstromer, Oja, and Sjostrom (2006), concurrent validity was supported with correlations of r = 0.55, p < .001, between the IPAQ data for total physical activity and an MTI activity monitor providing measures of Physical Activity intensity and duration, as well sedentary periods. A stronger correlation was present between vigorous Physical Activity data from the IPAQ and the activity monitor (r = .71,

p <.001). Additional concurrent validity was supported with correlations of r = .67 (p <.001) between the IPAQ and a physical activity log book, recording the type of physical activity and time spent in physical activity, subsequently converted into MET-hours per week. Weak correlations were demonstrated in the relation between the IPAQ and aerobic fitness (r = .21, p < .05) and BMI (r = .25, p < .001). These studies have concluded that psychometric evidence supports the validity of the IPAQ for the assessment of different domains of physical activity, intensity of physical activity, and total physical activity in healthy adults.

Demographics. Participants completed demographic questions regarding age, sex, race/ethnicity, highest level of education, current occupation, sport played, scholarship status, time elapsed since collegiate sport, post-collegiate sport involvement, current physical activity, current sport involvement (non-physical), such as coaching. These items provided characteristics of the sample, and provide a detailed description of current and past sport involvement.

Procedure

Participants were recruited via use of a database of 2,093 e-mail addresses of former collegiate athletes maintained by a large Division I public Midwest university. More specifically, potential participants received an e-mail invitation from the athletic department alumni association of the University, providing a brief description of the study topic, participation procedures, and incentives to be offered. Contact information for the researcher was provided. The e-mail also provided assurance of anonymity and confidentiality should they choose to participate. A World Wide Web (WWW) link to the on-line survey was included in the e-mail invitation. Participants received a reminder e-

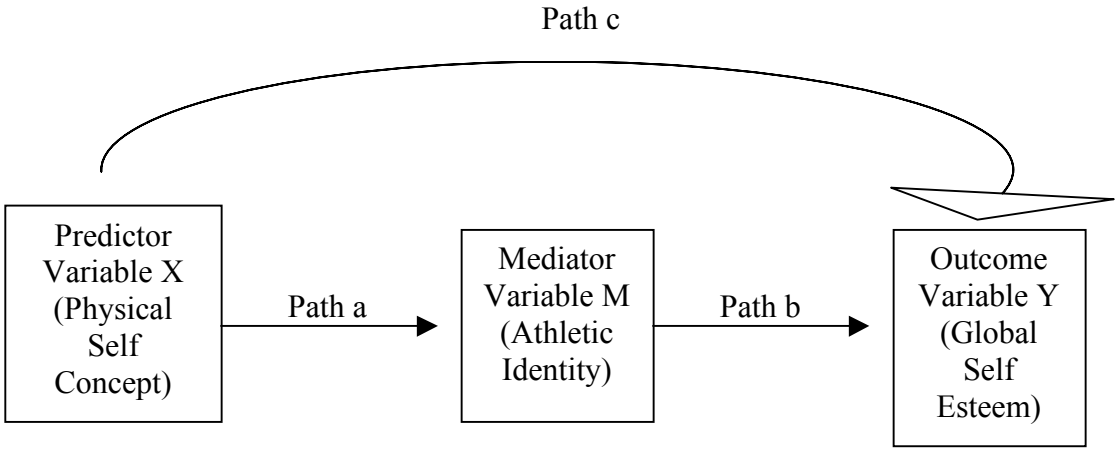
mail one week later, with the same information and link. Participants accessed the online survey through which informed consent was provided electronically. Participants read through the informed consent document and clicked on a button indicating their consent. After giving consent, participants completed the four instruments online and demographic information, which took approximately 15 to 20 minutes. The online survey presented the PSPP, AIMS, RSE, IPAQ, and demographic questions. A validity check was placed within the survey, with an item requesting "Please mark 3 for this item." Following completion of the survey, participants received debriefing information for educational purposes and were given the option to receive an abstract of the study upon its completion.

Analyses

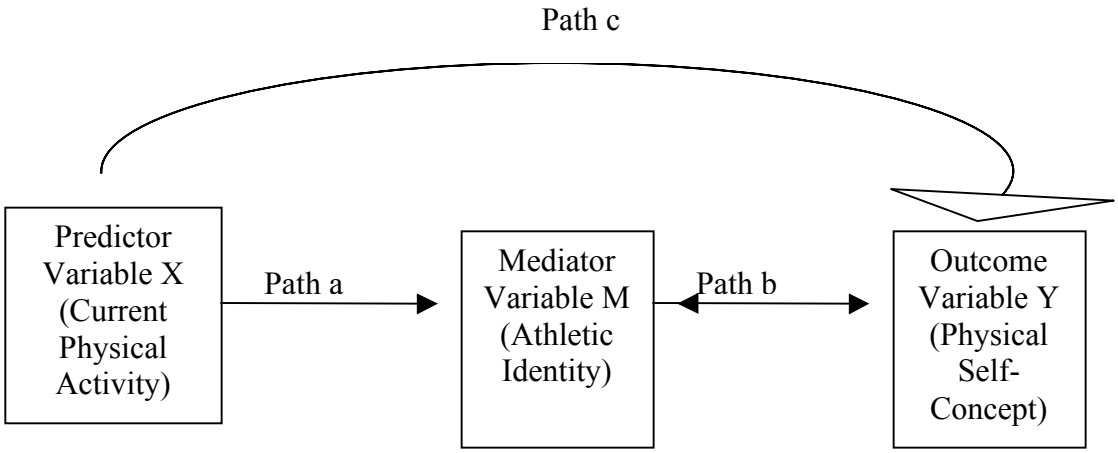
In this study, correlation and regression techniques were employed to statistically analyze the primary hypotheses. A Pearson's Product Moment correlation was performed to test the hypothesis that higher physical self-concept would be associated with higher global self-esteem. In this analysis, the total PSPP score was used as the predictor variable and the RSE was used as the criterion variable.

To test the second hypothesis that athletic identity is a mediating factor in the relation between physical self-worth and global self-esteem, a series of 3 multiple regression analyses was conducted, based on recommendations from Fraiser, Tix, and Barron (2004). In these analyses, physical self-concept was the predictor, athletic identity was the potential mediator, and global self-esteem was the outcome. The first equation assessed the relation between physical self-concept and global self-esteem, using scores from the PSPP and RSE and regressing global self-esteem on physical self-concept. The

second equation assessed the relation between physical self-concept and athletic identity, using PSPP and AIMS scores, regressing athletic identity on physical self-concept. The third equation regressed global self-esteem on both physical self-concept and athletic identity, in order to test the possible relation between athletic identity and global self-esteem. In addition, this equation investigated whether the strength of the relation between physical self-concept and global self-esteem is significantly reduced by adding athletic identity to the model. To evaluate the magnitude of the mediating effect, as per Fraiser et al. (2004) and Kenny et al. (1998), the products of paths *a* and *b* were calculated and divided by the standard error of this cross product to find a *z*-score which can be analyzed for statistical significance.

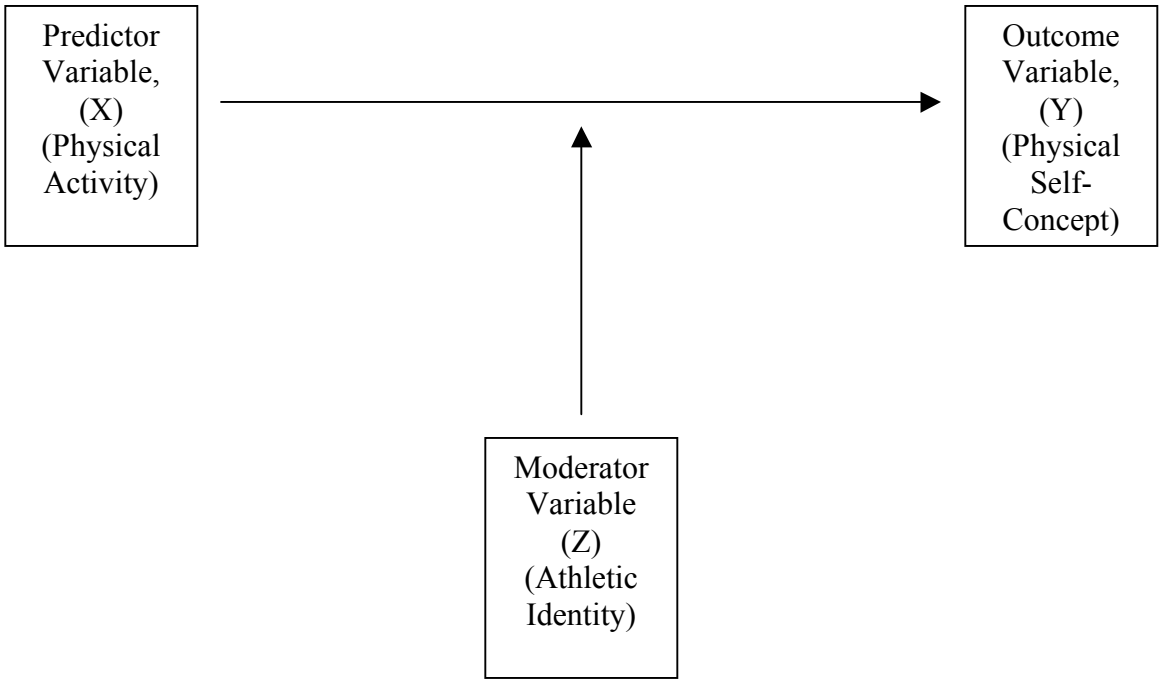


In order to address the research questions, analyses testing both moderating and mediating relations were conducted. To test the first research question exploring current level of physical activity as a mediating factor in the relation between current physical activity and physical self-concept, a multiple regression analysis was employed, based on recommendations from Fraiser, Tix, and Barron (2004). In these analyses, current physical activity was the predictor, athletic identity was the mediator, and physical self-concept was the outcome. To test the research question, three separate regression equations were conducted. The first equation assessed the relation between physical activity and physical self-concept, using scores from the IPAQ and PSPP and regressing physical self-concept on current physical activity. The second equation assessed the relation between physical activity and athletic identity, using PSPP scores and AIMS scores, regressing athletic identity on physical activity. The third equation regressed physical self-concept on both athletic identity and physical activity, providing an assessment of the relation between athletic identity and physical self-concept. It also assessed whether the strength of the relation between physical activity and physical self-concept was significantly reduced when athletic identity was added to the model. To evaluate the magnitude of the mediating effect, as per Fraiser, Tix, and Barron (2004) and Kenny, Kashy, and Bolger (1998), the products of paths *a* and *b* were calculated and divided by the standard error of this cross product to find a *z*-score which was analyzed for statistical significance.



To test the second research question exploring current level of physical activity as a moderating factor in the relation between athletic identity and physical self-concept, a hierarchical multiple regression analysis was conducted, following the procedure recommended by Fraiser, Tix, and Barron (2004). The continuous predictor and moderator variables, based on IPAQ scores and AIMS scores, were standardized into *z*-scores and product terms will be created by multiplying the predictor and moderator variables using the standardized continuous variables. The variables were then entered into the regression equation in steps. The first step included entering the standardized predictor (Physical Activity) and moderator (Athletic Identity) variables into the regression equation. Physical self-concept was regressed on level of physical activity and athletic identity. The next step required the product terms be entered in the regression equation after the predictor and moderator variables. Physical self-concept was regressed on the interaction between level of physical activity and athletic identity. The next step was to interpret the effects of the predictor and moderator variables through interpretation

of the regression coefficients representing relation between the predictor variable, physical activity, and the outcome variable, physical self-concept, and the relation between the moderator variable, athletic identity, and the outcome variable, physical self-concept. The following step involved testing the significance of the moderator effect. As the variables are on continuous scales, the *F*-test, representing the change due to the addition of the product term determined the degree of statistical significance.



Chapter III

Results

This chapter discusses the statistical analyses used to evaluate the hypotheses and research questions in this study. The data screening process will be described and preliminary analyses including reliability analyses, factor intercorrelations, *t*-tests, and descriptive statistics will be presented. Next, the results of correlation between physical self-concept and self-esteem will be discussed. The results of the mediation analysis for Hypothesis 2 will then be discussed, followed by the mediation and moderation analyses for Research Questions 1 and 2. Finally, a discussion of post-hoc analyses will conclude the chapter.

Preliminary Analysis

Prior to the main analyses, all variables involved in this study were examined for missing values, outliers, normality of distributions, and validity. Three hundred twenty eight questionnaires were completed. Individual instances of missing data were replaced by the mean score for that item. Cases with multiple missing values (9 cases) were deleted from the data set. Data was corrected for the item of the IPAQ, which asked for time spent in certain activities in minutes. More specifically, a number of participants reported their physical activity in hours; those scores were converted to minutes. Three participants were excluded as outliers due to their IPAQ results indicating time spent in physical activity amounting to over 15 hours per day. Eight participants were excluded due to incorrectly responding to the validity check item placed within survey. Three hundred and eight cases remained for the final analyses. Values for skewness and kurtosis are reported in Table 2.1. A ceiling effect appears to be present in the data for the

Rosenberg Self-Esteem Inventory, as many scores were reported at the maximum score of 40. There was a wide range of physical activity reported for the IPAQ, with the majority of responses falling in the 2000 – 8000 METS range. However, a number of cases fell in the more extreme range, resulting in a positively skewed distribution. High scores on the IPAQ were expected given the athletic nature of this population. The PSPP was negatively skewed, with few participants reporting low physical self-concept. The AIMS scores were normally distributed. Transformations were examined on the non-normal variables, but did not significantly contribute to a more normal distribution.

Reliability

Estimates of internal consistency were measured for each variable of interest. The alpha coefficients were as follows: .90 for the Physical Self-Worth subscale of PSPP, .81 for AIMS, .84 for RSE, and .72 for IPAQ. These reliability estimates demonstrate acceptable levels of internal consistency for this sample of former collegiate athletes.

Factor Intercorrelations

As reported in Table 2.2, an intercorrelation matrix of variable scores indicated moderate correlations among some variables: PSPP/RSE = .47, PSPP/AIMS = .24, IPAQ/PSPP = .17, and IPAQ/AIMS = -.11. These correlations suggest that these factors are related to some extent, but still have much unshared variance that could reflect their distinctiveness as constructs.

t-tests

To determine whether certain demographic factors influenced results, a series of independent sample *t*-tests were computed for each variable to identify mean differences based on sex, involvement in collegiate sport, being physically active, and considering

oneself an athlete. For sex, only PSPP-PSW was significantly different for males and females ($t(306) = 3.07$, $p < .01$). For current involvement in collegiate sport, only AIMS was significantly different between those who are currently involved in their collegiate sport and those who are not ($t(306) = 3.73$, $p < .001$). For being physically active, there were significant differences for all variables except AIMS (PSPP-PSW: $t(306) = 3.73$, $p < .001$; RSE: $t(306) = 2.68$, $p < .01$; IPAQ: $t(306) = 2.31$, $p < .05$) between those who consider themselves physically active and those who do not. Lastly, there were significant differences on all variables between those who consider themselves to be athletes and those who do not (PSPP-PSW: $t(306) = 5.47$, $p < .001$; AIMS: $t(306) = 5.97$, $p < .001$; RSE: $t(306) = 3.57$, $p < .001$; IPAQ: $t(306) = 3.34$, $p < .001$). Based on the nature of what the instruments measure, these differences are logical, thus the sample was not separated for the main analyses. However, post-hoc follow up exploratory analyses were conducted by separating the sample.

Descriptive Statistics

Means, standard deviations, skewness and kurtosis for each variable are shown in Table 2.1. Means for the PSPP-PSW ($M = 18.75$) are similar to the means reported by Brewer et al. (1993) in sample drawn from a college football team ($M = 18.72$). These means are higher than those reported by Fox and Corbin (1989) in a sample of college students ($M = 14.97$), and higher than means reported by Sonstroem et al. (1992) in a sample of adult recreational athletes ($M = 16.89$ for men; $M = 15.74$ for women). Means for the RSE ($M = 35.40$) were slightly higher than means reported by Brewer et al. (1993) in a sample of college students ($M = 33.17$) and Sonstroem et al. (1992) in a sample of adult recreational athletes ($M = 33.98$ for men, $M = 33.45$ for women). Means for the

AIMS (M = 37.29) were most similar to a sample of recreational athletes (M = 34.76 for men, M = 30.39 for women) reported by Brewer et al. (1993). These means were much higher than the sample of non-athletes (M = 19.67 for men, M = 15.74 for women) and much lower than the sample of college athletes (M = 54.59 for men, M = 53.35 for women) reported in the same study. Means for the IPAQ (M = 7,561.50) are above the mean reported in a study across eight European countries (M = 5,605.94), but within the ranges of the lowest (M = 2,617.33) in Spain to the highest (M = 8,534.21) in Germany (Rütten et al., 2003).

Hypothesis 1

It was hypothesized that physical self-concept would be significantly correlated with global self-esteem. To determine if there was a statistically significant association between physical self-concept and global self-esteem, a Pearson's product moment correlation was conducted. The PSPP-PSW score used as the predictor variable and RSE score used as the criterion variable. PSPP-PSW was significantly correlated with RSE (r = .47, $p < .01$). Thus, the first hypothesis was supported by the data in this study.

Hypothesis 2

The second hypothesis tested a mediation model involving physical self-concept, athletic identity, and global self-esteem. It was hypothesized that athletic identity would mediate the relation between physical self-concept and global self-esteem. PSPP-PSW scores served as the predictor variable, AIMS scores as the mediating variable, and RSE scores as the outcome variable. Table 3.1 presents the results of each regression equation performed according to the causal steps of the Baron and Kenny method (1986). In Step 1, RSE was regressed on PSPP-PSW. The unstandardized regression coefficient (b = .49)

associated with the effect of physical self-concept on global self-esteem was significant ($p < .001$), thus Path c was significant. In Step 2, AIMS was regressed on PSPP-PSW. The unstandardized regression coefficient ($b = .62$) associated with this relation was also significant ($p < .001$), thus Path a was significant. In the final step, RSE was regressed on AIMS and PSPP-PSW simultaneously. The unstandardized regression coefficient ($b = -.05$) associated with the relation between global self-esteem and athletic identity was also significant ($p < .05$), thus Path b was significant. The final regression equation also provided the unstandardized regression coefficient ($b = .52$) for the association between global self-esteem and physical self-concept, controlling for athletic identity, which was significant ($p < .001$). Path c is significant, however the unstandardized regression coefficient is not smaller than path c.

The Sobel test was conducted to provide a more formal test to determine if the indirect effect of the predictor on the outcome via the mediator is significantly different from zero. The equation for the Sobel test, described by Baron and Kenny (1986) is: S_{ab} = Square Root of: $b^2S_a^2+a^2S_b^2+S_a^2S_b^2$. The Sobel test was conducted via a SOBEL macro for SPSS (Preacher & Hayes, 2004). The results of the Sobel test indicated that a mediation effect was present and that the effect of physical self-concept on global self-esteem via athletic identity is significantly different from zero, allowing a rejection of the null hypothesis ($z = -2.16$, $p < .05$).

The Baron and Kenny method has been heavily criticized (Fritz & MacKinnon, 2007; Hayes, 2009; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002), and it is now strongly recommended that researchers utilize the Bootstrapping method. Using the SPSS Macro provided by Preacher and Hayes (2004), a bootstrap analysis was

conducted, where resampling is repeated during analysis. The process is repeated *k* times, and in this study, *k* = 5000 as recommended by Hayes (2009). The procedure yields a percentile-based bootstrap confidence interval. For this analysis, a true indirect effect can be found between -.0658 and -.0047 with 95% confidence. Because zero is not within this interval, it can be concluded that the indirect effect of physical self-concept on global self-esteem via athletic identity is significantly different from zero at $p < .05$. It is important to note that the bootstrapping method has become a more popular means of analysis for mediation, shown to be one of the more valid and powerful methods, providing more accurate Type I error rates and greater power for identifying indirect effects (MacKinnon et al., 2004; Williams & MacKinnon, 2008). Additionally, this method makes no assumptions about normality of the distribution, unlike the Sobel test. Given the significant findings from both the Sobel test and the bootstrapping analysis, it can be concluded that the results of this study provide support for the hypothesis that athletic identity mediates the relation between physical self-concept and global self-esteem.

Research Question 1

The first research question tested a mediation model involving physical activity, athletic identity, and physical self-concept in order to determine if athletic identity would mediate the relation between physical activity and physical self-concept. IPAQ scores served as the predictor variable, AIMS scores as the mediating variable, and PSPP-PSW scores as the outcome variable. Table 3.2 presents the results of each regression equation performed according to the causal steps of the Baron and Kenny method (1986). In Step 1, PSPP-PSW was regressed on IPAQ. The unstandardized regression coefficient (*b* =

8.34 X 10^{-5}) associated with the effect of physical self-concept on global self-esteem was significant ($p < .05$), thus Path c was significant. In Step 2, AIMS was regressed on IPAQ. The unstandardized regression coefficient ($b = 1.82$ X 10^{-4}) associated with this relation was also significant ($p < .05$), thus Path a was significant. In the final step, PSPP-PSW was regressed on AIMS and IPAQ simultaneously. The unstandardized regression coefficient ($b = .085$) associated with the relation between physical self-concept and athletic identity was also significant ($p < .001$), thus Path b was significant. The final regression equation also provided the unstandardized regression coefficient ($b = 6.79$ X 10^{-5}) for the association between physical self-concept and physical activity, controlling for athletic identity, which was significant ($p < .05$). Path c is significant, however it is not immediately evident whether the unstandardized regression coefficient is significantly smaller than path c.

The Sobel test was once again conducted to provide a more formal test to determine if the indirect effect of the predictor on the outcome via the mediator is significantly different from zero. The results of the Sobel test indicated that a mediation effect was not present and that the effect of physical activity on physical self-concept via athletic identity is not significantly different from zero ($z = 1.739$, $p = .08$). Following procedures outlined for Hypothesis 2, a bootstrap analysis was conducted. This was also prudent, given the results of both prior methods approached significance. In this analysis, a true indirect effect can be found between .78 X 10^{-6} and .34 X 10^{-4} with 95% confidence. Because zero is not within this interval, it can be concluded that the indirect effect of physical activity on physical self-concept via athletic identity is significantly different from zero at $p < .05$. Given the significant findings from the bootstrapping

analysis and findings approaching significance using the Sobel test, it can be cautiously concluded that the athletic identity mediates the relation between physical activity and physical self-concept.

Research Question 2

The second research question examined the potential moderating effect of athletic identity, by exploring if physical activity interacted with athletic identity to influence physical self-concept in this sample of former collegiate athletes. As the first step in this analysis, the scores from the predictor (IPAQ), the moderator (AIMS), and the interaction term (IPAQ x AIMS) were standardized into *z*-scores as recommended in Fraiser, Tix, and Baron (2004). A hierarchical multiple regression analysis was conducted, with the results depicted in Table 4 indicating no significant moderating effect. Thus, it can be concluded that athletic identity does not serve as a moderating variable in the relation between physical activity and physical self-concept.

Post-Hoc Analyses

Moderation. Based on significant differences between groups, as demonstrated by *t*-test analyses, data was separated to represent the different groups (i.e. men and women, consider self an athlete and do not consider self an athlete). The primary analyses were conducted on these groups to explore any moderation effects that may be unique to subsets of the population. Two groups emerged with athletic identity having significant moderation effects. For those individuals who are no longer actively involved in their collegiate sport, athletic identity serves as moderating factor. Results depicted in Table 5.1 demonstrate significant moderating effect in the relation between IPAQ and PSPP-PSW, F_{change} (1, 190) = 4.12, $p < .05$), accounting for 2% of additional variance in PSPP-

PSW. In order to interpret the moderation effect, regression lines for two levels of each predictor were calculated and plotted. Figure 1.1 illustrates that higher levels of physical self-concept were reported by those with higher athletic identity, however, physical self-concept decreased with higher levels of physical activity. For participants with lower athletic identity, physical self-concept was higher for those who reported higher levels of physical activity.

For those individuals who do not consider themselves to be an athlete currently, athletic identity serves as moderating factor. Results depicted in Table 5.2 demonstrate significant moderating effect in the relation between IPAQ and PSPP-PSW, F_{change} (1, 82) = 4.77, $p < .05$, accounting for 5% of additional variance in PSPP-PSW. In order to interpret the moderation effect, regression lines for two levels of each predictor were calculated and plotted. Figure 1.2 illustrates that higher levels of physical self-concept were reported for those who demonstrated high athletic identity and low levels of physical activity. Physical self-concept decreased for those with high athletic identity reporting higher levels of physical activity. Lowest levels of physical self-concept were reported for those with low athletic identity who engaged in low levels of physical activity. However, physical self-concept increased for those with low athletic identity reporting higher levels of physical activity.

Regression. The predictor variable (Age) was entered into a regression model predicting PSPP-PSW, AIMS, RSE, and IPAQ. Table 6 illustrates the results, with only RSE found to be significant, $F(1, 303) = 6.76$, $p < .01$.

ANOVA. Given the unique range of ages in this sample, one-way ANOVA was conducted to determine if there were statistically significant differences among age

groups on any of the four main variables (i.e. PSPP-PSW, AIMS, RSE, IPAQ). Age groups were created by dividing participants into groups of ten years (e.g., Group 1: ages 20-29, Group 2: ages 30 – 39, etc.). ANOVA results revealed statistically significant differences in the mean scores of athletic identity among the age groups, $F(6, 298) = 2.42$, $p < .05$. Complete results are presented in Table 7. Utilizing post-hoc analysis with Tukey's statistic, it appeared that significant differences were present between Group 2 (ages 30-39) and Group 7 (ages 80-89). For AIMS, Group 2 ($M = 40.05$, range of 17-61) was significantly higher than Group 7 ($M = 25.67$, range of 15-39), $p < .01$.

Chapter IV

Discussion

This chapter will elaborate upon the findings discussed in the previous chapter. The findings of the main hypotheses will be presented first, followed by the research questions, with discussion of possible explanations based on previous literature. Next, additional findings based on age and group differences will be explored to provide more understanding of the population of interest. Finally, implications for practice and research, as well as study limitations, are discussed.

One of the primary findings in this study is the presence of an association between physical self-concept and global self-esteem in this sample of former collegiate athletes. Specifically, Hypothesis 1 stated that physical self-concept would be positively correlated with global self-esteem. A moderate correlation was found, with former collegiate athletes reporting an association between physical self-concept and global self-esteem similar to that of current athletes and the general population (Fox & Corbin, 1989; Marsh & Sonstroem, 1995; Sonstroem, Speliotis, & Fava, 1992). These findings support the notion that physical self remains important in relation to global self-esteem among former college athletes. This association has been found to be highest in active elite athletes and elite athletes early in transition after their college careers (Stephan et al., 2007; Tusak, Faganal, & Bednarik, 2005), but moderately strong correlations are present across age groups for the general population (Fox, 2000). The sample in this study represents individuals across the lifespan, and as time goes on, different domains appear to contribute to global self-esteem. As a result, the physical domain may have less association with global self-esteem than it did during the athletic career. Stephan et al.

(2003b) describe the manner in which elite athletes may shift their values in order to allow the professional domain to become the primarily valued life domain, while physical activity becomes a complement of the professional life. Stephan et al. (2003b) explain a reshaping of the physical self as individuals embrace new professional roles, interests, and activities. It is interesting to note that the correlation reported in this study is slightly weaker than those reported in studies of adult exercisers and university students (Hayes, Crocker, & Kowalski, 1999; Marsh & Sonstroem, 1995; Sontroem, Speloitis, & Fava, 1992). It is possible that this reduction in the association of physical self-concept to global self-esteem could be explained as reflecting individuals' use of a protective factor in response to the potential discrepancy between their former physical self and their current physical self. More specifically, according to Higgin's (1987) self-discrepancy model, a discrepancy between the actual self and ideal self leads to decreased self-esteem. It may be that former athletes find ways to decrease the importance of the physical self in their lives in order to protect their global self-esteem. Domains that are important to individuals (such as the physical self) may contribute more to global self-esteem (Fox, 1990; Marsh, 1993) than domains that are less important. Fox (2000) recognized that athletes decrease the importance of the physical self to benefit other life domains. In this way, self-worth is no longer determined by athletic performance; instead physical activity becomes a means for enhancing mental health and global self-esteem. Although the association may be weaker than in the past, it remains significant, and ultimately may determine a great deal of former athletes' self-esteem. These findings support previous literature stating that perceptions of self-concept in the physical domain are associated with global self-esteem. An extension of this literature is seen in the

presence of the relation in this unique population of former collegiate athletes. As individuals highly invested in the physical self previously, it follows that this domain would remain somewhat salient, seen in its association with global self-esteem.

The second hypothesis examined the association between physical self-concept and global self-esteem in former collegiate athletes, and hypothesized that athletic identity would mediate the relation. Having established the association between physical self-concept and global self-esteem, this exploration provided further understanding of the nature of the relation. Athletic identity was shown to act as a mediating variable between physical self-concept and global self-esteem for former collegiate athletes. For this population, it appears that maintaining athletic identity partially accounts for the association between physical self-concept and global self-esteem. This finding speaks to the salience that athletic identity may continue to have, even after the formal athletic career has ended. Interestingly, the physical self-concept for the sample of former collegiate athletes was similar to those of a college football team (Brewer et al., 1993), and self-esteem was higher than other samples of adults and college students (Brewer et al., 1993; Sonstroem et al., 1992). The level of athletic identity reported was similar to that of recreational athletes (Brewer et al., 1993), which is logical, as most of this sample reports participating in recreational exercise. It may be that the salience of the physical self is determined by the extent to which one identifies as an athlete, thus influencing the contribution to their global self-esteem. A number of researchers have found support for the influence of importance of specific domains on global self-esteem (Fox, 1990; Harter, 1990; 1996; Marsh, 1986); however these explanations have been inconsistent and lack support (Marsh, 1994; Marsh & Sonstroem, 1995). Based on the present study, finding

that athletic identity is the mechanism through which physical self-concept affects global self-esteem, it is proposed that components of identity explain the relation more than perceived importance. Brewer et al.'s (1993) conceptualization of athletic identity incorporated the concept of perceived importance, concluding that athletic identity was related to perceived importance of sport, but acted as a distinct factor. For those who continue to identify as an athlete, the physical self may be more salient, as it is rooted in one's identity. With this athletic identity, more meaning may be given to the body, increasing its contribution to the overall self. The physical self has been identified as a highly influential component of athlete's identities (Loland, 1999; Sparkes, 1998) and it has been demonstrated that there is a strong emphasis on self-perceptions in the physical domain (Brewer et al., 1993). Athletic identity has been shown to decrease with age and following sport career termination (Brewer, 1993; Brewer et al., 1993; Lavallee, Gordon, & Grove, 1997). Considering the expected finding that athletic identity is less than that of current college athletes, it helps to explain the weaker association between physical self-concept and global self-esteem. It is expected that this sample will have other domains contributing to their global self-esteem, given that they are no longer immersed in the athletic role, as they once were. It has been demonstrated that athletic identity decreases as athletes invest in a career outside of athletics (Shachar, Brewer, Cornelius, & Peittpas, 2004). Van Raalte, Brewer, Brewer, and Lindner (1992) found that athletic identity was negatively correlated with age, explained by the multiple roles and activities that are part of an older athlete's life, which decrease athletic identity. It seems that athletic identity only partially explains the association because it becomes less important over time, as one becomes further removed from the formal athletic role. Again, we may see that

former athletes intentionally decrease athletic identity as a protective factor. It has been found that individuals may devalue a domain of the self to ensure that the threat (in this case, degradation of physical competence) is not viewed as something important in self-definition (Schamder, Major, & Gramzow, 2001). Brewer, Cornelius, Stephan, and Van Raalte (2010) found that athletes decreased their identification with the athlete role throughout rehabilitation of a severe injury. The authors explained the findings in the context of a self-protection factor to preserve self-esteem. The present study's results provide important information regarding the maintenance of athletic identity. Despite a decrease in athletic identity, it seems that athletic identity remains influential for former athletes, partially explaining the relation between physical self-concept and global self-esteem. It is likely that these former athletes continue to identify with the athlete role to a certain extent and as a result, the physical self-concept remains very important in how they feel about themselves as whole, though perhaps to a lesser extent than those currently engaged in a formal sport career.

Research Question 1 brought in the construct of physical activity, asking if athletic identity mediates the relation between physical activity and physical self-concept. Athletic identity was shown to mediate the association between physical activity and physical self-concept. As with the second hypothesis, athletic identity appears to be the mechanism through which physical activity affects physical self-concept for former collegiate athletes. These findings highlight the salience of athletic identity for these former college athletes. Those with high athletic identity tend to derive self-worth from athletic involvement and performance (Brewer et al., 1993). Thus, the centrality of the athletic identity may lead to a greater degree of personal importance on physical activity,

partially explaining its association with physical self-concept – a domain of self-worth highly valued due to the identification with the athlete role. Marsh and Sonstroem (1995) proposed that perceived importance of specific domains may positively influence behavior, specifically citing exercise activity and its association with physical self-concept. However, they acknowledged limitations in results related to importance ratings, suggesting that another mechanism may account for such associations. These identified limitations lend support to the proposal that athletic identity, as opposed to perceived importance of the physical domain, provides some explanation for the relation between physical self-concept and global self-esteem. Lending further support, Marsh (1994) acknowledges that there is potential to predict behavior based on the degree to which one values outcomes and activities. Additionally, the findings that most of this sample is physically active is supported by Continuity Theory (Atchly, 1977), explaining how behaviors carry across through transitions into different life stages. Harter (1990) found that self-evaluation in physical and athletic domains occur throughout a lifetime. It seems plausible that former athletes will continue to participate in physical activity, and that physical activity will remain important to their athletic self-definition and physical self-concept. This explanation may fit particularly well for former athletes who have likely modified both their levels of athletic identity and amount of physical activity since their collegiate career. It seems that individuals may adjust their level of athletic identity following formal involvement in athletics. Thus, even if they are not as physically active as in the past, the amount they are doing matches their redefined athletic identity allowing it to contribute to the physical self. This idea is supported by Stephan et al.'s (2003a) identification of an "adjustment period" for transitioning athletes, in which they

reevaluate and reassess physical capabilities and come to reasonable and realistic standards. With these new standards, physical self-worth has been shown to increase. These findings, in conjunction with those from the second hypothesis, elucidate the possible importance of athletic identity as it relates to the physical self for former college athletes. In the general population, it would not necessarily be expected that athletic identity would explain the associations as they do in this study. It becomes clear that collegiate athletes likely have a unique experience that carries on into their post-collegiate lives.

Research Question 2 examined whether athletic identity serves as a moderating factor in the relation between physical activity and physical self-concept. Results indicate that athletic identity does not moderate this relation for the overall sample. However, in post-hoc analyses, based on group differences, athletic identity does moderate the relation for certain individuals within the larger sample. Specifically, for those who are no longer involved with their collegiate sport, athletic identity appears to moderate the relation between physical activity and physical self-concept. Additionally, for those who do not self-identify as athletes, athletic identity (measured by AIMS), serves as a moderating variable.

For the entire group it appears that levels of athletic identity do not differentially affect the association between physical activity and physical self-concept. Regardless of high levels or low levels of athletic identity, the relation remains the same. This may indicate that it is simply the presence of a degree of athletic identity that explains the association between physical activity and physical self-concept.

It is noteworthy that moderation is present in two sub-groups, illuminating divergent experiences in post-collegiate years. While some athletes remain involved in their collegiate sport, many do not, typically moving on to other activities. For this group that does not remain involved in their collegiate sport, athletic identity appears to moderate the relation between physical activity and physical self-concept. At low levels of athletic identity, higher physical activity is associated with low physical self-concept. As physical activity increases, these individuals experience a slight decrease in physical self-concept. The low athletic identity group appears to have low physical self-concept at all levels of physical activity. This finding is intriguing; as it does not match previous findings which indicate physical activity is positively correlated with physical self-concept (Fox, 2000). It appears that the low level of athletic identity has a profound impact on the way physical activity influences physical self-concept. It is speculated that discrepancy between the former physical self and the current physical self may play a role in the finding that low levels of physical self-concept are associated with all levels of physical activity. Specifically, it may be that they are experiencing a discrepancy between their current and former physical capacitates, as described by Stephan et al. (2003a), which may influence perceptions of physical self-worth negatively. Perhaps, for these individuals, the more they engage in physical activity, the more aware they become of the discrepancy between their former physical selves and current physical selves, thus lowering their physical self-concept. For this group, no longer participating in the sport they have excelled in may also compound this concept of discrepancy. They may feel less competent in new sports and activities, or encounter frustration with the bodily changes they are likely to experience, despite maintaining a level of physical activity (Stephan et

al., 2007, 2003a). At high levels of athletic identity, high levels of physical activity are associated with increased physical self-concept. As physical activity increases, so does physical self-concept. This finding indicates that those individuals who maintain high athletic identity experience the expected positive association between physical activity and physical self-concept. It seems that this group embraces the new sports and exercise they have become involved in, allowing that involvement to positively contribute to their sense of physical self. Physical activity remains salient in light of the presence of athletic identity, and contributes to a high level of physical self-concept. Lally (2007) indicated that former athletes are often satisfied when taking on new athletic roles and content with the new role sport plays in their lives. It can be speculated that this group maintains athletic identity, although no longer reinforcing it by participating in their collegiate sport. It is probable that this group has taken on new athletic roles, which support the presence of athletic identity, thus explaining the association between physical activity and physical self-concept.

Participants completed an instrument related to athletic identity, but were also asked a single question to determine if they self-identified as an athlete. Approximately 28% of the sample did not self-identify as athletes, although some would be considered to have a degree of athletic identity as determined by the instrument. For this group that did not self-identify as athletes, athletic identity (measured by AIMS) did appear to be a moderating variable. For those who scored low on the athletic identity instrument, low physical activity was associated with low physical self-concept. As physical activity increases, so does physical self-concept. For this group, there was a marked increase in physical self-concept with increases in physical activity. It is intuitive that those who do

not endorse an athletic identity and who also do not report characteristics of athletic identity would report generally low levels of physical activity and subsequently physical self-concept. For these individuals, the same association between physical activity and physical self-concept that occurs in the general population (as well as this sample of former athletes) is seen with the positive association between physical activity and physical self-concept (Fox, 2000; Sonstroem, 1998). It may be that this group in particular has de-indentified with the athlete role to the extent that it has minimal or no presence in their lives, thus does not explain the relation between physical activity and physical self-concept. The association for these individuals is likely explained by factors unrelated to athletic identity, due to the potential devaluing of the athletic domain as it relates to identity. For those who scored high on the athletic identity instrument, physical self-concept is higher at lower levels of physical activity. As physical activity increases, physical self-concept decreases. It can be speculated that discrepancy may be implicated in these findings in a unique way. More specifically, this group presents a curious situation in the unwillingness to identify as an athlete, yet appearing to report aspects of athletic identity. It may be that this subgroup experiences the greatest degree of discrepancy as they try to distance themselves from an identity that remains salient. This idea is supported by Stryker and Serpe's (1994) proposition that individuals may not always be aware of the salience of their identities. They state that identities are powerful determinants of behavior, regardless of the level of importance one ascribes to them. Physical self-concept is lower at high levels of physical activity, suggesting that athletes are experiencing the discrepancy, comparing their former selves to their current selves in the athletic and physical domains. As athletic identity remains important (although

perhaps, outside of conscious awareness), it likely creates a degree of discrepancy that contributes to a lower level of physical self-concept. The finding that physical self-concept increases as physical activity decreases suggests that these individuals are not confronted with the discrepancy as much as those who remain more physically active, thus they appear more able to protect their physical self-concept.

The richness of this study was enhanced by the characteristics of the sample. Obtaining information about the lives of former collegiate athletes across decades provided a broader perspective of post-collegiate life. Age was shown to be an influential factor in regards to self-esteem and athletic identity. In this sample, ranging in age from 23 - 88, global self-esteem was shown to increase with age. These findings are supported by an extensive study of global self-esteem across the life-span (Robins et al., 2002), finding that self-esteem levels rose gradually throughout adulthood. Athletic identity was significantly different between age groups. This finding is congruent with literature surrounding athletic retirement and adult athletes, suggesting that athletic identity decreases with age (Brewer, 1993; Brewer et al., 1993), following sport career termination (Lavallee, Gordon, & Grove, 1997) and investment in professional careers (Shachar et al., 2004). It may be that new life roles and transitions that occur at different stages in life explain the differences in athletic identity between age groups.

In this study, some notable group differences occurred that reveal nuances within this population. In this sample, men reported higher levels of physical self-concept than women. This is supported by the physical self-concept literature, with studies that consistently report that the level of physical self-concept among men is higher than that of women (Fox & Corbin, 1989; Hayes, Crocker, & Kowalski, 1999; Sonstroem et al.,

1992). Individuals who remained involved with their collegiate sport reported higher athletic identity than those who were no longer involved in their collegiate sport. This is intuitive, as the collegiate sport was most likely one that was invested in throughout much of the individual's life. Many athletes identify specifically with their sport, thus instead of "I am an athlete" it is "I am a gymnast." Thus, staying with the sport that likely fostered athletic identity will contribute to the strong maintenance of athletic identity. Group differences were noted among those who are currently physically active and those who are not. Individuals who report being physically active appear to have higher physical self-concept, global self-esteem, and levels of physical activity. These findings are expected, as physical activity has been positively associated with physical self-concept and global self-esteem (Sonstroem, 1998; Spence, McGannon, & Poon, 2005) The greatest number of group differences appears to be among those who self-identify as athletes and those who do not. Those who consider themselves to be an athlete report significantly higher levels of physical self-concept, athletic identity, global self-esteem, and physical activity. This finding supports the conclusion that athletic identity is a salient and influential construct for former collegiate athletes. Based on these specific findings, it appears that athletic identity, especially as defined by self, has a large influence on other potentially meaningful constructs, such as global self-esteem, physical self-concept, and physical activity involvement. It may be that the self-identification as an athlete is more of a determinant of importance than the level of athletic identity determined by a standardized instrument. However, the use of the instrument may reveal more subtleties to athletic identity that affect the individual, perhaps outside of conscious awareness. The findings based on athletic identity fit with previous literature, indicating

that athletic identity is positively associated with physical self-concept (Brewer et al., 1993; Loland, 1999), global self-esteem (Marsh et al., 1995), and physical activity (Anderson & Cychosz, 1990; Fox & Corbin, 1986; Kendzierski, 1988).

Implications for Practice and Future Research

The findings of this study have significant implications for research regarding former athletes in the field of sport psychology. Specifically, sport psychology research has long sought to understand the experience of the athlete as fully as possible, but often neglected their experience following the formal career in sports. There is widespread agreement that at high levels of athletics, the sport experience is an important and influential part of an athlete's life. We know little about what happens when one transitions out of an all-consuming aspect of their life. Many athletes began at a very young age; they have not known life without their sport. After having sport be such a prominent piece of people's lives and identities, it follows that those experiences will affect their lives, even after the termination of a formal sport career. It will be important for future research to elucidate the experience of former athletes and develop a more complete understanding of the factors that remain salient.

This study identified the important effects athletic identity has on global self-esteem, physical self-concept, and physical activity. Future research should explore other constructs that may be influenced by athletic identity in former athletes. This study specifically highlighted athletic identity's mediating role in the associations between physical self-concept and global self-esteem, and physical activity and physical self-concept. It would be beneficial for future research to explore other potential mediating mechanisms that may occur with athletic identity to fully understand these important

associations. Further study of the identity process would contribute greatly to our understanding of this group. For example, a longitudinal study could provide fascinating information regarding the process of athletic identity throughout the lifespan. It would be helpful for future studies to explore other domains of identity and life roles, to identify where athletic factors remain.

The current study examined factors associated with age in a limited fashion. It appears that the experiences of former athletes are affected by time and age. This study identified differences in global self-esteem and athletic identity, based on age. It could be beneficial if future research further examined age-related factors. Additionally, it may be interesting to consider other characteristics, such as gender and race, as well as experiences related to sport, such as forced retirement, achievement of all goals, and/or enjoyed the experience.

In this study, the focus was specifically on understanding former athletes' experiences. It would be of interest to conduct a similar study with the general population or former non-collegiate athletes and to compare results in order to more clearly support the notion that these relations are unique due to the experience of being a former collegiate athlete. This study just begins to highlight the possible uniqueness of this population. In a field that strives to understand the sport experience, it is critical to understand the experience that follows the conclusion of the collegiate sport career.

Few athletes are prepared for their transition out of sport, particularly as it relates to their bodies. Implications from this line of research can relate to two distinct components of athletes' transitions. These findings tell us that aspects of the sporting life remain influential following the termination of the athletic career. For counselors or sport

psychologists working with individuals who were high-level athletes, it appears critical to recognize the potential salience of athletic identity. It seems likely that these individuals will retain some athletic identity, and place importance on related constructs such as physical self-concept and physical activity. Thus, counselors should explore the meaning of this aspect of self, and consider it when conceptualizing such individuals. This perspective will likely enhance clinical work if counselors are able to understand the importance that physical self-concept and physical activity may hold for these individuals, and to identify ways to use that importance in an adaptive manner. Although this study did not explore emotional constructs, it did highlight the potential for discrepancy between the former self (as a collegiate athlete) and the current self, specifically the discrepancy in physical capacities. The literature has demonstrated emotional difficulties in athlete transition may be partially explained by discrepancy (Stephan et al., 2007). Counselors should be aware of possible discrepancy and explore it further with the individual, identifying ways in which they can reconcile the discrepancy and redefine roles and identity. For those former athletes who over-invested in sport, they may retain athletic identity to the exclusion of other dimensions of self, which has been associated with transitional difficulty (Baillie & Danish, 1992; Brewer et al., 1993). Counselors and sport psychologists should identify these individuals and work with them to decrease the importance or meaning of the athletic role, while enhancing the value of other roles and identities.

These findings also indicate that it may be beneficial for sport psychologists to intervene prior to the termination of individual's athletic careers. Often there is little preparation for life after sports, especially in regards to one's physical self. It will likely

be helpful to prepare athletes for the change in their physical selves and athletic identity. Assisting athletes in finding new roles to embrace, while honoring the athletic identity may allow physical self-concept to relate to global self-esteem, and physical activity to relate to physical self-concept, and thus avoid the potentially negative consequences of discrepancy. Encouraging athletes to continue to engage in physical activity, yet anticipating the change in experience, will likely contribute to their retaining positive physical self-concepts and high levels of self-esteem.

Limitations

While this study yielded potentially valuable findings, it is important to acknowledge the limitations of this work. Due to the nature of self-selection, the sample in this study may not be representative of all former collegiate athletes. Participants were recruited from the University's athletic alumni club, which includes only letter-winners. Thus, the experiences of non-varsity athletes are not represented. Additionally, the majority of the sample had graduated from college, omitting those who did not complete their undergraduate education. It may also be that those individuals who chose to participate in this study are more connected to the university or the athletic role. There may be a component of self-selection of those who have had more positive transitions, or perhaps more negative transitions.

Another limitation related to the sample was the lack of racial diversity. The majority of participants were White, and representation of persons of color was minimal. Additionally, there were significantly more men than women who participated in this study. This is to be expected however, as women were not often able to compete in collegiate sports until the late 1970's with the passage of Title IX.

Additionally, there is the limitation associated with self-reported data. For example, there may be an influence of social desirability in responding or unintentional response bias. The self-report and retrospective nature of the IPAQ is likely a specific limitation. Participants may not be able to accurately recall the last seven days of activity. The format of the PSPP is a less familiar one, and may have been confusing to some participants. Additionally, due to the required informed consent instructions, knowledge that this study was about former collegiate athletes, may have been primed participants to be more attuned to their athletic identity.

More advanced statistical analyses, such as SEM may be helpful in further examining the proposed relations among the constructs. There are countless factors that may be as important, or more important, in understanding the experience of former collegiate athletes. Nonetheless, this study serves as a potentially valuable initial exploration of these constructs among former collegiate athletes.

Summary

This study explored the constructs often associated with the experience of current athletes among former collegiate athletes. In this group of individuals, whom at one time were highly invested in sport, it was discovered that many associations continue after the formal sport career has ended. Perhaps the most important finding is that athletic identity continues to be influential, even when individuals have concluded their formal involvement in athletics. Findings from this study appear to indicate that athletic identity explains part of the association between physical self-concept and global self-esteem, as well as between physical activity and physical self-concept. Despite the numerous changes athletes experience in their transition from sport, athletic identity seems to

remain a part of the self on some level. It is through this maintenance of athletic identity that the way individuals feel about their physical self is related to the way they feel about their overall self. Additionally, athletic identity is the mechanism through which physical activity contributes to the perceptions of self in the physical domain. More generally, it appears that understanding the role of athletic identity sheds light on the impact athletic careers have on individuals, well past the point of athletic career termination. Other findings provide a picture of former athletes across the lifespan, such as identifying changes in self-esteem and athletic identity as individuals age and become more removed from their athletic careers. We also gain knowledge of within group differences, highlighting important aspects that contribute to former athletes' experiences of the physical self, self-esteem, and athletic identity. For example, we recognize that those athletes who remain active in their collegiate sport have different experiences than those who do not. Similarly, those who remain physically active differ from those who do not. Likewise, those who consider themselves to be athletes in the present differ from those who do not. In essence, findings of this study provide a deeper understanding of the experiences of former collegiate athletes, particularly as it relates to aspects of self, honoring the importance of the athletic experience on self-concept and identity.

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Table 1

Means, Standard Deviations, and Percentages for Demographics

	Males (N = 218)		**Females (N = 90)**		**Total (N = 308)**	
	M	***SD***	***M***	***SD***	***M***	***SD***
Age	54.19	15.07	39.44	10.54	50.00	15.4
	N	**%**	**N**	**%**	**N**	**%**
Race/Ethnicity						
African-American	8	3.7	3	3.3	11	3.6
Asian/Pacific Islander	1	0.5	1	1.1	2	0.6
European-American	147	90.4	80	88.9	277	89.9
Latino/a	0	0	0	0	0	0
Native American	4	1.8	1	1.1	5	1.3
Middle Eastern	0	0	2	2.2	2	0.6
Multiracial	2	0.9	2	2.2	4	1.3
Sport						
Baseball	21	6.8				
Basketball	8	2.6	7	2.3		
Football	82	26.6				
Golf	5	2.3	9	2.9		
Gymnastics			9	2.9		
Soccer			2	0.6		
Softball			9	2.9		
Swimming & Diving	16	5.2	20	6.5		
Tennis	12	5.5	6	6.7		
Track & Field	37	12	14	5.3		
Volleyball			9	2.9		
Wrestling	15	4.9				
2-Sport	17	5.5	6	1.9		

Table 2.1

Means, Standard Deviations, Skewness, and Kurtosis for the Variables of Interest

Variable	Mean	SD	Skewness	Kurtosis
PSPP-PSW	18.75	3.67	-.53	.23
AIMS	37.29	9.67	-.04	-.47
RSE	35.40	3.83	-.78	-.07
IPAQ	7561.50	5976.22	1.54	3.12

Note. PSPP-PSW = Physical Self-Worth Scale of the Physical Self-Perception Profile; AIMS = Athletic Identity Measurement Scale; RSE = Rosenberg Self-Esteem Scale; IPAQ = International Physical Activity Questionnaire.

Table 2.2

Correlations Among PSPP-PSW, AIMS, RSE, and IPAQ

Variable	**1.**	**2.**	**3.**	**4.**
1. PSPP – PSW				
2. AIMS	.24**			
3. RSE	.47**	-.01		
4. IPAQ	.14*	.11*	.10	

Note. PSPP-PSW = Physical Self-Worth Scale of the Physical Self-Perception Profile; AIMS = Athletic Identity Measurement Scale; RSE = Rosenberg Self-Esteem Scale; IPAQ = International Physical Activity Questionnaire

$N = 308$

* $p < .05$; ** $p < .01$

Table 3.1

Regression Analysis to Test the Mediating Role of AIMS between PSPP-PSW and RSE

Predictor	**D.V.**	***b***	**S.E.**	***t***	***p***	**Sobel test (*p*)**
PSPP-PSW	RSE	.49	.053	9.34	.001	-2.0951 (.036)
PSPP-PSW	AIMS	.62	.146	4.25	.001	
PSPP-PSW	RSE (AIMS)	.52	.054	9.74	.001	

Note. D.V. = Dependent Variable in the equation. PSPP-PSW = Physical Self-Worth Scale of the Physical Self-Perception Profile; RSE = Rosenberg Self-Esteem Scale; AIMS = Athletic Identity Measurement Scale.

Table 3.2

Regression Analysis to Test the Mediating Role of AIMS between IPAQ and PSPP-PSW

Predictor	**D.V.**	***b***	**S.E.**	***t***	***p***	**Sobel test (*p*)**
IPAQ	PSPP-PSW	8.344E-5	3.478E-5	3.40	.017	1.7393 (.08)
IPAQ	AIMS	1.829E-5	9.196E-5	1.99	.048	
IPAQ	PSPP-PSW (AIMS)	6.794E-5	3.417E-5	1.99	.048	

Note. D.V. = Dependent Variable in the equation. IPAQ = International Physical Activity Questionnaire; PSPP-PSW = Physical Self-Worth Scale of the Physical Self-Perception Profile; AIMS = Athletic Identity Measurement Scale.

Table 4

Hierarchical Multiple Regression Analyses Testing the Moderating Effect of AIMS between IPAQ and PSPP-PSW

Criterion/Predictor Statistics				
Step	R^2	**Adjusted** R^2	**Change of** R^2	***F* of Change**
Step 1				
AIMS, IPAQ	.07	.06	.07	11.09***
Step 2				
AIMS x IPAQ	.08	.07	.01	3.27

Note. AIMS = Athletic Identity Measurement Scale; IPAQ = International Physical Activity Questionnaire.

*** $p < .001$

Table 5.1

Hierarchical Multiple Regression Analyses Testing the Moderating Effect of AIMS between IPAQ and PSPP-PSW (Participants Not Currently Involved in College Sport)

Criterion/Predictor Statistics				
Step	R^2	**Adjusted** R^2	**Change of** R^2	***F* of Change**
Step 1:				
AIMS, IPAQ	.10	.09	.10	10.07***
Step 2:				
AIMS x IPAQ	.12	.10	.02	4.12*

Note. AIMS = Athletic Identity Measurement Scale; IPAQ = International Physical Activity Questionnaire.

* $p < .05$, *** $p < .001$

Table 5.2

Hierarchical Multiple Regression Analyses Testing the Moderating Effect of AIMS between IPAQ and PSPP-PSW (Participants Not Identifying as Athlete)

Criterion/Predictor Statistics				
Step	R^2	**Adjusted** R^2	**Change of** R^2	***F* of Change**
Step 1:				
AIMS, IPAQ	.09	.06	.09	3.85*
Step 2:				
AIMS x IPAQ	.14	.10	.05	4.77*

Note. AIMS = Athletic Identity Measurement Scale; IPAQ = International Physical Activity Questionnaire.

* $p < .05$

Table 6

Regression Analysis For Age Predicting Variables of Interest

Variable	***b***	***S.E.***	***t***
PSPP-PSW	.02	.01	1.43
AIMS	-.03	.04	-.80
RSE	.04	.01	2.60**
IPAQ	-3.09	22.30	-.14

Note. PSPP-PSW = Physical Self-Worth Scale of the Physical Self-Perception Profile; AIMS = Athletic Identity Measurement Scale; RSE = Rosenberg Self-Esteem Scale; IPAQ = International Physical Activity Questionnaire

** $p < .01$

Table 7

Analysis of Variance for Age

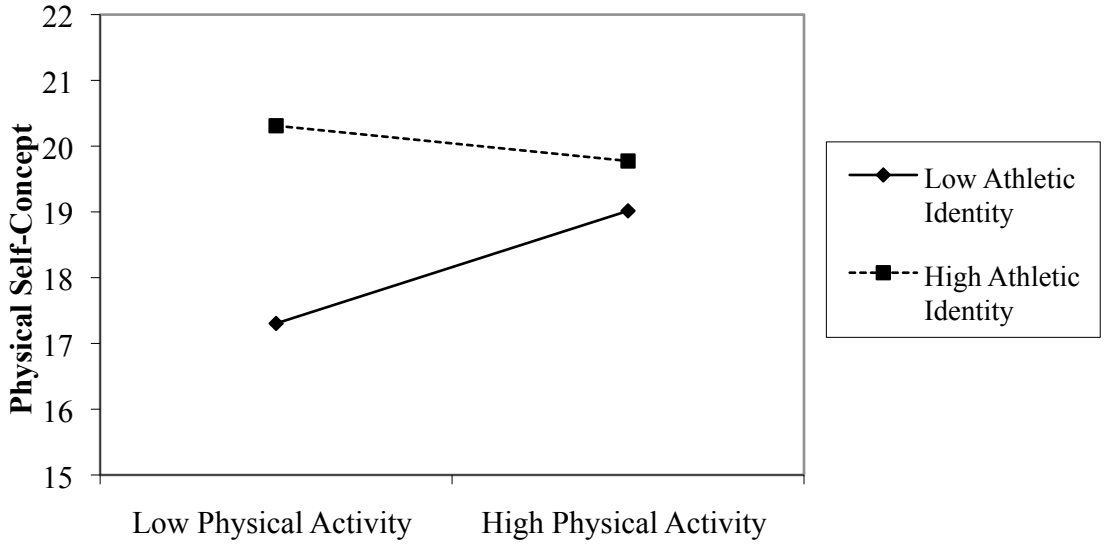
Source	Sum of Squares	*df*	Mean Squares	*F*
PSPP-PSW				
Between Groups	135.83	6	22.64	1.70
Within Groups	3965.38	298	13.31	
Total	4101.21	304		
AIMS				
Between Groups	1321.84	6	220.31	2.42*
Within Groups	27100.45	298	90.94	
Total	28422.29	304		
RSE				
Between Groups	127.51	6	21.25	1.46
Within Groups	4337.29	298	14.56	
Total	4464.80	304		
IPAQ				
Between Groups	83653964.51	6	13942327.42	.38
Within Groups	1.082E10	298	36302831.75	
Total	1.090E10	304		

Note. PSPP-PSW = Physical Self-Worth Scale of the Physical Self-Perception Profile; AIMS = Athletic Identity Measurement Scale; RSE = Rosenberg Self-Esteem Scale; IPAQ = International Physical Activity Questionnaire

* $p < .05$

Figure 1.1.

Interaction between Athletic Identity and Physical Activity predicting Physical Self-Concept for participants who are not currently involved in their collegiate sport.



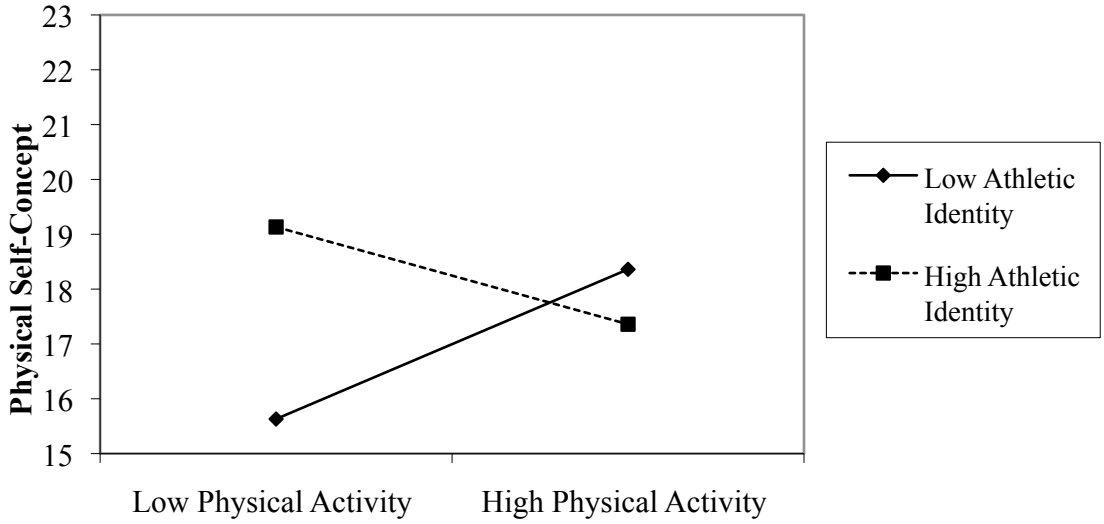
Note.

$N = 194$.

Values for AIMS and PSPP-PSW are plotted using low and high values (one standard deviation below and above the mean).

Figure 1.2.

Interaction between Athletic Identity and Physical Activity predicting Physical Self-Concept for participants who do not identify as an athlete



Note.

$N = 86$.

Values for AIMS and PSPP-PSW are plotted using low and high values (one standard deviation below and above the mean).

APPENDIX I:

EXTENDED LITERATURE REVIEW

Literature Review

In recent years the concept of the physical self has been important across disciplines and within the multidimensionality of self-concept. Self-concept is widely accepted as a powerful means to facilitate outcomes in all facets of life, and even serve as an outcome itself (Marsh, 1993). In the field of sport psychology, a critical emphasis on the physical self emerges. The sporting world essentially forms subcultures, within which physical abilities and related physical factors are emphasized and highly valued. Thus, an appraisal in regards to expectations in those areas can be seen as exerting an influence on self-esteem (Fox, 1992). Although the majority of available literature places a focus on current athletes, researchers have begun to explore how the physical self is affected when athletes are no longer formally involved in competitive sport (Stephen & Bilard, 2003; Stephan et al., 2003a; 2007). Areas of potentially critical importance begin to emerge in considering factors of importance, salience, and identity. For current athletes, it is understood that a great deal of importance is placed on athletic competencies and strong identification with the role of athlete (Brewer et al., 1993). These concepts are less clear for retired athletes, as it is relatively unknown the extent to which they retain some degree of athletic identity and place importance on the physical domain. Further, if these concepts do differ from those of current athletes, it is interesting to consider the role these factors may play related to physical self-concept and global self-esteem. There is scarce literature that brings in the three constructs of physical self-concept, global self-esteem, and athletic identity among retired athletes.

This literature review will present the literature that is currently available in the areas of physical self-concept, global self-esteem, athletic identity, and the experience of

retired athletes. Within each of the main topical areas, general information will be addressed and then will narrow to sport-related ties, and specifically, information related to the experience of the physical self in termination of the athletic career when available. Likewise, the primary areas will be linked to one another to demonstrate the holistic conceptualization of physical self-worth and self-esteem in retired collegiate athletes.

Physical Self-Concept

In this section, I will outline the structure of multidimensional self-concept. A particular emphasis will be placed on the dimension of physical self-concept, highlighting the structure and related subdomains. Lastly, physical self-concept will be discussed as it relates to athletes specifically.

Self-Concept. The nature of self-concept has been a major focal point of research exploring the construct of self. It is widely accepted that self-concept is multidimensional, composed of characteristics, abilities, personal qualities, and roles (Fox, 2000). Shavelson, Hubner, and Stanton (1976) described self-concept as individuals' self-perceptions of their experience and negotiations with their environments. The construct of self-concept has potential utility as an outcome and a mediating variable than may explain and predict other outcomes. Self-concept is seen as a desirable outcome in many situations, developing out of psychological and educational settings and is also seen as facilitating positive outcomes (i.e. in the area of academic performance). Self-concept is viewed as a descriptive construct which may be useful in predicting and explaining individuals' behaviors. The construct of self-concept is found to be multidimensional and hierarchical, becoming increasingly multidimensional with

age. It is also critical to recognize that self-concept is both descriptive and evaluative, based on an ideal, a personal standard, or comparison to others (Shavelson et al., 1976).

In the hierarchical model of self-concept, global self-esteem appears at the apex of the hierarchy. On the next level are academic and non-academic self-concept which are divided and further broken down. Academic self-concept is separated into subject-specific self-concepts, while non-academic self-concept is separated into social, emotional and physical self-concepts. Each of these subdomains is even further divided into more specific components, such as physical ability and appearance for physical self-concept. This structure of self-concept truly speaks to the complexity and multidimensional nature of the way in which individuals shape their perceptions of self.

Self-Concept in the Physical Domain. Despite the inclusion of broad subdomains within physical self-concept, it was prudent to develop a more comprehensive understanding of physical self-concept. Consistent with the hierarchical model of self-concept, physical self-concept is placed on the median level, between global self-esteem, at the apex of the model, and four subdomains that contribute to physical self-concept. Physical self-concept is thought to represent an overall perception of the physical self, based on general feelings of happiness, satisfaction, pride, respect, and confidence in the body and its capacities. Physical self-concept is proposed to be broken down further, into four specific subdomains of physical condition, sport competence, attractive body, and physical strength. Physical condition represents factors such as condition, stamina, fitness, ability to maintain exercise, and confidence in exercise setting. Sport competence is characterized by athletic ability, ability to learn sport, and confidence in sport. Attractive body considers attractive physique, ability to maintain an attractive body, and

confidence in appearance. Lastly, the subdomain of physical strength denotes perceived strength, muscle development, and confidence in situations requiring strength (Fox & Corbin, 1989). Taken together, the components of this hierarchical model form a complete and thorough view of the way in which we come to develop our physical self perceptions.

Physical Self-Concept in Athletes. The physical self holds particular prominence within the athletic realm. The significance of the performing body has been noted in recent developments in self-concept research, finding it to be a critical component of the overall self. The body and physical self is often the cornerstone of an elite athlete's identity (Loland, 1999; Sparkes, 1998). As a result there is an emphasis on self-perceptions in the physical domain and a tendency to derive much of one's personal self-worth from physical activity and sport performance (Brewer et al., 1993). Thus, the performing body represents a central role in the construction of identity in athletes (Loland, 1999), and is created and maintained around "possessing a young, able, pain-free, physically fit, and performing body" (Phoenix, Faulkner, & Sparkes, 2005). An athlete's perception of body becomes anchored in a performance-based lifestyle and dependent on performance outcomes. Body image and self-esteem are heavily influenced by both physical capacity and social reinforcement surrounding the ideal of the performing body (Stephen & Bilard, 2003).

A number of studies have examined the physical self-concept of active, elite athletes. In one such study of self-concepts, athletes and non-athletes were compared and the largest difference between groups was seen in the physical ability self-concept. This finding is logical and intuitive, given the time and intensity of training in which athletes

invest as compared to typical non-athletes. Smaller, but significant findings demonstrated higher social self-concepts and global self-esteem for athletes compared to non-athletes. Interestingly, there was no difference between athletes and non-athletes on the physical appearance self-concept (Marsh et al., 1995). Even when considering athletes only, there appears to be a difference in physical self-concept based on level of athletics. Elite athletes are shown to have a higher physical self-concept than non-athletes, as well as high school athletes. Additionally, elite athletes experience smaller gender differences within subdomains of physical self-concept as compared to the larger gender differences seen for nonelite athletes, with men consistently reporting higher physical self-concept (Marsh et al., 1997). Stephen et al. (2003) looked at the differences between active athletes and transitional athletes, one year into retirement from athletics. As compared to the perceptions of active elite athletes, the transitional athletes reported significantly lower perceived physical condition, sport competence, perceived physical attractiveness, physical self worth, and global self-esteem, in the first year out of sport. These findings supported the perspective of a bodily transition within retirement from sport, considering the centrality of the physical self in sport and recognizing the impact when that physical self undergoes transition.

Global Self-Esteem

Within this section, a brief overview of self-esteem will be presented. An in-depth examination of the mediating influence of physical self-concept on global self-esteem will be provided. This will subsequently lead into a discussion on aspects of salience and importance as they relate to the influence of certain domains on global self-esteem.

Self-Esteem. Self-esteem can be broadly defined as a positive appraisal of one self, and is considered to be a critical component of psychological health and well-being (Rosenberg, 1965). Self-esteem is essentially a personal evaluation of how well the self is doing, specifically, "the awareness of good possessed by self" based on the values of the individual (Campbell, 1984). Defined as such, the individual identifies personal criteria as salient in determining worth and the weight with which the criteria factors into the overall statement of self. Self-esteem is often used as an indicator of mental health (Baumeister, 1993), emotional stability and adjustment (Sonstroem, 1997), and life satisfaction and well-being (Diener, 1984).

Self-Esteem and the Physical Self. Fox and Corbin's (1989) model can provide a context to understand how bodily changes and experiences of the body can affect the physical self, subsequently extending to and have an impact on global self-esteem. According to Sonstroem and Morgan (1989) competence and self-acceptance represent the two major dimensions of self-esteem. Within current models, dimensions of attractive body, physical self-worth, and self-esteem may be considered components of self-acceptance which may be more salient to global self-esteem than competence (Sonstroem, Harlow, & Josephs, 1994).

The Physical Self-Perception Profile Model (PSPP) posits that the subjective manner in which an individual appraises their physical self will be reflected in the appraisal of their overall self. The research examining physical self-worth has found a positive relation between PSPP subdomain scales and overall physical self-worth, as well as a positive relation between physical self-worth and global self-esteem. Physical self-worth is believed to mediate the relation between specific physical self-perceptions and

global self-esteem. Physical self-worth comes out as a superordinate and mediating variable for the subdomains when physical self-worth is removed through partial correlation analysis. Through this analysis the relationships between subdomains and global self-esteem were extinguished, lending support to physical self-worth as a mediating variable (Fox & Corbin, 1989). Across many populations, physical self-worth has consistently surfaced as a mediator of the relationship between physical self-perception and subdomains (physical condition, sport competence, attractive body and physical strength) and global self-esteem. Perceptions within the four subdomains account for 65% to 75% of the variance in self-worth, demonstrating the soundness of the variable as a measure of general well-being in the physical domain (Fox, 1997). Fortes, Ninot, and Delignières (2004) demonstrated that there was a stronger association between subdomains and physical self-worth than global self esteem. These findings highlight the idea that the path between subdomains and global self-esteem is always mediated by physical self-worth. The subdomain of attractive body was an exception in this study however, suggesting that perceptions of attractiveness may have a more direct link to global self-esteem. Some research has proposed that physical appearance is the subdomain that will most influence self-esteem across the life span in the United States (Harter, 1990). It may be that an attractive body is synonymous with physical self-worth and self-esteem, and health is perceived as equivalent to physical self-worth by many individuals (Fox, 1997).

Physical self-worth may mediate outside the four specified subdomains, extending to other bodily perceptions. For example, Stephen et al. (2007) found that physical self-worth was a mediator of the relation between difficulties experienced with the body and

global self-esteem in recently retired athletes. Strong links exist between physical activity and sport participation and self-esteem as well. This relation may also occur through a mediating influence of increased physical self-worth. Thus, as exercise increases, there may be a positive relationship with subdomains, which in turn may improve individuals' views of their physical selves. It is through the mediating influence of physical self-concept that a relation between exercise and self-esteem was demonstrated (Sonstroem, 1998). Although some literature reviews report that 60% of studies examining physical activity and self esteem found a positive association, it would be remiss to assume that improved self-esteem is an automatic outcome of physical activity. A meta-analysis by Spence, McGannon, and Poon (2005) found that overall, physical activity leads to small, but significant increases in global self-esteem. This relationship however, is smallest on the global level and it appears that physical activity has the largest influence on self-esteem at domain-specific levels.

Salience of the Athletic Domain. The concept of importance or salience has emerged as an important consideration within the areas of physical self-concept and global self-esteem. This concept centers on the idea that self-perceptions in areas more important to an individual, such as the physical domains for athletes, will result in stronger relations with global self-esteem than those areas viewed as less important (Marsh et al., 1997). The importance-weighted average model (Marsh, 1986) posits that the salience or importance of a specific component to an individual will determine the contribution of that component to the overall self-concept. This model purports that the effects of a subdomain on global self-esteem are moderated by the perceived importance of that domain. Thus, the conclusion is drawn that the influence of the domain varies

based on perceived importance. On the other hand, the self-concept/importance discrepancy model (Harter, 1985; 1989) highlights the idea that self-esteem is a function of discrepancies between self-concept ratings and importance ratings. In this model, the effects of the subdomains on external criteria, such as exercise activity, are mediated by global self-concept. Therefore, specific subdomains affect general self-concept, which in turn, increases exercise activity.

Harter (1990; 1996) demonstrated that the relation between competence and self-esteem was much higher in those domains rated as important versus those rated as unimportant. Harter found that those individuals who experienced the highest levels of discrepancy reported the lowest levels of self-esteem. Likewise, those reporting higher levels of self-esteem demonstrated higher importance-competency correlations. Specific to the physical self-concept area, Fox (1990) developed the Perceived Importance Profile (PIP) as a supplement to the PSPP to allow for such investigations within the physical domain. As Harter found, discrepancy scores in those domains rated as important produce a graded relationship with physical self-worth and self-esteem. The importance-competency correlations are stronger for those individuals with higher physical self-worth, and to a lesser extent, self-esteem.

In evaluating numerous theoretical models of importance, Marsh (1994) found no support for the intuitively appealing belief that the effect of a domain-specific component has on global self-concept will vary with the importance an individual places on a specific domain. It appears that importance ratings may not be as influential to overall self-concept as previously thought; however, importance may have a positive influence on behavior. Findings have been equivocal in studying the influence of importance.

Marsh and Sonstroem (1995) investigated a number or importance-based approaches and failed to find support for weighted importance-competence factors in predicting self-esteem. These findings were in stark contrast to previous findings and conceptualizations, and have been challenged by identifying methodological weakness. It appears that Marsh and Sonstroem (1995) did not adequately replicate the formulations provided by Harter or those in the PSPP manual. Additionally, it has been noted that the PIP may not be a psychometrically sound instrument, rarely producing high alphas (Fox, 1997). Despite these criticisms, tentative interpretations note that, despite a positive influence in behavior, individuals may be more self-critical in areas of importance, thus resulting in importance having a negative effect on overall self-perceptions. With the simple unweighted averages, all four subdomains held a significant relationship with global self-esteem and physical self-worth. With the exception of attractive body, all subdomains were also correlated with exercise activity. As mentioned, none of the four PIP ratings had a significant relationship with global self-esteem, although they were directly correlated with both physical self-worth and exercise activity, lending support to the effect perceived importance has on behavior (Marsh & Sonstroem, 1995). Fox (1997) notes that physical competencies generally show low to moderate correlations with self-esteem. This influence of behavior and competencies aligns with the self-enhancement theory of self-esteem, which postulates that we tend to act in ways that support our perceptions of ourselves (Sonstroem et al., 1994).

Self-evaluation in the physical and athletic domains appears to be prevalent across the lifespan (Harter, 1990). Despite this prevalence, it is presumptuous to assume that the athletic domain is salient to all individuals. While there is evidence regarding current

athletes placing importance on the physical domain, there is a lack of information regarding retired athletes in that regard. The athletic domain may remain salient for former athletes, for whom that domain was prominent in their daily life as competitive athletes. As previously mentioned, there is intuitive appeal that the value placed on a given self-concept determines the influence perceived competence within that domain has on global self concept (Brewer et al., 1993). Due to equivocal findings, we cannot conclude that it is solely perceived importance influencing global self-esteem. Perhaps, it is actually a function of athletic identity that predicts the influence of physical self-concept on global self esteem. Brewer et al. (1993) used the theory of perceived importance to operationalize athletic identity. When athletic involvement was held constant, correlating PIP scores with a measure of athletic identity resulted in a correlation of .42. These findings lend support to the way in which athletic identity may be related to, but not that same as perceived importance within a larger construct of identity. The following section will provide an exploration of athletic identity to help to frame the potential connection.

Athletic Identity

This section will outline the general concept of athletic identity and explore the relation with physical self-concept. It will also address the way in which identity may be more important than subjective salience for athletes. Lastly, this section will address the concept of athletic identity in former athletes.

Development of Athletic Identity. Athletic identity has been defined as "the degree to which an individual identifies with the athlete role" (Brewer et al., 1993, p.327). A strong literature base supports the notion that there is an element of athletic identity for

high level athletes (Brewer et al., 1993; Kerr & Dacyshyn, 2000; Lally, 2007; Miller & Kerr, 2002). Outcomes in the athletic domain will likely have a strong influence on the self esteem, affect, and motivation of an individual with a strong athletic identity, placing value on athletics. Athletic identity can also be conceptualized as a social role due to the strong influence of family, friends, coaches, and the media in the acquisition of the label of athlete (Heyman, 1987). Webb et al. (1998) described the "public identity" and "private identity" in the conceptualization of athletic identity. The public identity is based upon the degree to which the individual is known and recognized by others as an athlete. On the other hand, the private identity refers the degree of internalization of the athlete role as part of the individual's personal self-concept. In many cases, the athletic identity can be the dominate aspect of the overall identity for an individual. Little research has addressed the specific components comprising athletic identity.

Individuals with strong athletic identity are particularly attuned to self-perceptions in the athletic and physical domain (Brewer et al., 1993). For athletes, the four dimensions of appearance, importance, competence, and encouragement from others, appear to contribute equally important sources of information to the self in regards to athletic identity (Anderson, 2004). Athletes report that their appraisal and recognition of their physical self played an important part in identifying with the elite athlete role. Self-esteem is enhanced and athletic identities supported through physical capabilities and performance outcomes (Stephen & Brewer, 2007). The self-definition as an athlete is supported and reinforced through physical performance and body appearance (Loland, 1999). There is a dearth of information surrounding the interaction of athletic identity and physical self-concept. However, given the prominent role the physical self plays in the

formation of identity of athletes, it would be very interesting to see the influence athletic identity may have on physical self-concept.

Although support surrounding the influence of importance is lacking, it seems that there could be a place for strength of athletic identity to mediate the relationship between physical self-concept and global self-esteem. Perhaps it is athletic identity that is salient instead of perceived importance as previously proposed (Fox 1990; Marsh 1993). Individuals who highly value sport and exercise and place a great deal of importance on athletic involvement and outcomes are seen as having a strong athletic identity. For these individuals, it is likely that self-esteem, affect, and motivation are strongly impacted by the successes and failures in the athletic domain (Brewer et al., 1993). It is believed that when athletic identity is a prominent component of one's self-concept that successful performances and outcomes will enhance global self-esteem (Callero, 1985). Self-esteem becomes based on salience and commitment to a certain identity, as individuals organize their multiple identities into a hierarchy of prominence. As a more prominent identity emerges, more time and effort is expended to support the identity. In this case, self-esteem becomes based on the salience and prominence of that particular identity (Stryker & Serpe, 1982; Stryker & Statham, 1985). Thus, we find that the self evaluates the importance and level of commitment of exercise and athletic involvement. For those who consider themselves highly committed to being athletic, it follows that this attribute is expected to be highly salient (Anderson, 2004). For elite athletes, physical performance may be the primary source of identity and an avenue for self-affirmation. At times, training and exercise may be the primary focus of an athlete's life, therefore strengthening athletic self-definitions and resulting in further internalization of the self as

an athlete. Many athletes report having integrated the sport and physical activity as a part of self, thus placing athletic identity in a very prominent role (Stephan & Brewer, 2007). In a role as encompassing as that of an elite athlete, it is reasonable to assume there will be some degree of athletic identity developed and for many athletes that identity will serve as their primary self-definition.

Maintenance of Athletic Identity. As we consider the emotional and physical investment in high-level athletics, it is evident that this identity becomes important and internalized. However, when the formal role of the competitive athlete ends, it is unclear what occurs in regards to athletic identity. It is believed that a strong and exclusive athletic identity will result in an increased level of difficulty with sport career termination (Pearson & Petitpas, 1990). One study of collegiate athletes demonstrated that athletic identity had a negative relation with age in college. It was postulated that the natural maturation process and exposure to outside interests and influences served to reduce exclusive identification with the athlete role (Brewer et al., 1993). Additionally, findings indicate that some athletes actively choose to protect their identities by redefining and negotiating a new sense of self when they are aware their career is coming to an end (Lally, 2007). For many collegiate athletes there is a finite period of time to engage in their sports due to eligibility restrictions, and for the majority of athletes this marks the termination of their formal athletic career. Studies of elite athletes however, indicate that these athletes identify more strongly with the athlete role and are more apt to hold it at a high level of salience following retirement (Kerr & Dacyshyn, 2000). When an athlete lacks additional sources of self-worth and self-concept it is likely that they will experience emotional disturbance and difficulties upon retirement (Brewer et al., 1993).

Additionally, those athletes who experience exclusivity in the role experience a greater threat from aging and having more negative attitudes toward the idea of aging (Phoenix et al., 2005).

Although there is little research regarding the maintenance of athletic identity as individuals retire from collegiate sports, there is some evidence toward continued involvement. Continuity Theory (Atchly, 1977) holds that activities, habits, and predispositions carry on from one life stage to the next, carrying over through transitions. Curtis and Ennis (1988) found that 71% of retired elite hockey players continued to play recreational hockey, and 94% were involved in sport of some kind. Of these retired hockey players 51.9% were involved in two sports other than hockey, and many reported additional non-playing involvement, such as coaching, scouting, or managing a team. Greendorfer and Blinde (1985) discovered that 75% of former collegiate athletes continued to participate in sport on some level. This involvement included informal sport, league or organized sport, and coaching. Additionally, 81% of men and 55% of women in the sample continued to follow their former sport "regularly" or "religiously" through the media. Together, these findings indicate that the end of formal sport careers did not necessarily result in the end of athletic involvement. With this evidence, it is clear that sport remains an important element in the lives of most of these former collegiate athletes. Additionally, it has been found that self-evaluation in the physical and athletic domains occur across the lifespan (Harter, 1990). Although not salient for all, there is reason to believe that it may continue to be salient for many former athletes on some level.

Retired Athletes

This section will address the experiences retired athletes may have and the potential implications for the aforementioned constructs. This section will begin with an overview of the transition out of sport and lead to a general overview of physical self-concept in retired athletes and an older population. Areas such as physical activity, bodily changes, and body image will be further explored. The idea of discrepancy as it relates to physical performance and body image will conclude the section.

Transition Out of Sport. Within the field of sport psychology, the concept of transition has been addressed in a variety of ways in the current literature. A sizable body of research has suggested that a strong athletic identity leads to transition difficulties within the process of retirement from sport (Brewer et al., 1993; Pearson & Petitpas, 1990). Athletic identity has been linked to the degree of adjustment needed and the subsequent period of time necessary to make that adjustment (Grove, Lavallee, & Gordon, 1997). The departure from the athletic role affects not only the athletic identity, but an overall sense of self. Thus, many athletes may encounter identity difficulties following retirement, particularly those most strongly identifying with the athlete role. It has been found that athletes who began to proactively withdraw their identity from sport prior to retirement do not experience identity crisis and successfully transition into new roles (Lally, 2007). Role Exit Theory (Edbaugh, 1988) places focus on the socialization from one role to the next, difference in role expectations, and status changes that may result. The emphasis for a successful transition is dependent of the merging of the past identity with the new identity. Among professional athletes, it has been found that the role exit is directly affected by the centrality of athletic role to overall sense of self. Role residual appears to be a prominent factor in transition. When athletes experience role

residual they retain some of the athletic role despite a need to transition to a new role. Thus, the role of the professional athlete is never exited completely (Drahota & Eitzen, 1998). It is plausible that collegiate athletes will also retain some of their athletic identity into retirement paralleling the experience of professional athletes.

Body Transition. Within the transition of athletic retirement, there is a unique consideration of the body and physical self-worth. Considering the prominent role the physical self plays in the formation of identity and contribution to self-worth for athletes, it comes as no surprise that a shift in physical capacity presents unique challenges. This shift occurs in the transition from extreme bodily investment to a more sedentary state, ultimately affecting physical self-worth and global self-esteem. For elite athletes, the decline of the body that has been invested in and served as their tool may be perceived as threatening to their self-esteem. In exploring this idea, it is thought that physical self-worth serves as a superordinate construct. In this case, as athletes experience bodily changes and difficulties there is a decline in pride, satisfaction, happiness, and confidence in regards to the physical self (Stephen et al., 2007). Stephan et al. (2003a) identified two distinct stages that athletes in transition are believed to go through relating to physical self worth and global self-esteem. The first stage is the 'crisis stage' in which physical condition, physical self-worth, and global self-esteem all decrease. The authors suggest that perhaps discrepancy plays a part in these areas of decline, citing Higgin's (1987) self-discrepancy model. Accordingly, the perceived discrepancy between their current and former physical capacities has an influence on perceptions of physical conditions, physical self-worth, therefore ultimately impacts self-esteem. Interestingly, perceived sport competence and physical strength remain stable during this period, reflecting

confidence in sport ability and strength among retired athletes. The second stage identified by Stephen et al. (2003) is an "adjustment period" in which athletes appear to reevaluate and reassess physical capabilities and competencies, resulting in more reasonable and realistic standards. With these new standards there appears to be an increase in perceived physical condition, sports competence, physical strength, and physical self-worth. Global self-esteem also appears to increase accordingly, lending evidence to the strong relation between physical self-worth and global self-esteem.

Continuation of Physical Activity. Athletic competence appears to be integral throughout the lifespan (Fox, 1992). Across all ages, the perception of athleticism predicts the involvement of sport and physical activity. Both children and adults who report higher perceptions of competence within the subdomains of physical self-concept are more likely to be physically active. It is widely accepted that there is a decline in physical activity with age, particularly by the early twenties (Curtis & White, 1984; McPherson, 1978; 1980; Snyder & Spreitzer, 1984). Although older persons as a group may engage in less physical activity, those who do participate tend to have higher involvement in their activities than younger persons. These findings lend support to Continuity Theory (Atchley, 1978) which supports the idea that individuals who are physically active early in life are generally more physically active later in life (Curtis & White, 1984; McPherson, 1984). Greendorfer and Blinde (1985) also provide support through findings that 75% of former collegiate athletes continue to participate in sport. For some athletes trying to disengage from their current athletic role as they approach retirement, a helpful strategy was to become involved in other physical activities. Although many athletes considered continuing with their sport on some level, the

potential decline in capacity deterred them, thus encouraging other physical pursuits. At one year following retirement, it was found that the majority of the former athletes were satisfied with the role that sport and physical activity held in their new lives (Lally, 2007). While the natural process of aging is likely to impose limitations and constraints on physical activity there is often an emphasis on physical activity that remains throughout a lifetime, although it may change and adjust alongside life circumstances

Lifestyle Changes. For many high-level athletes, retirement from sport results in drastic changes in lifestyle. For many, this adjustment subsequently brings about bodily changes and difficulties as athletes negotiate their new lives and new physical selves. Physical self-worth is involved as it mediates the relation between bodily difficulties and global self-esteem. These bodily difficulties have been described as weight gain, loss of muscle mass, and bodily pain, all of which demonstrate a negative relationship with global self-esteem, physical self-worth, perceived physical condition, sports competence, and perceived attractiveness (Stephen et al., 2007). It is plausible that athletes are particularly vulnerable to threats to self-esteem following athletic retirement, as they experience a multitude of change.

Many of the changes that occur are those that come with the natural process of aging. However, it is thought that for those who possess a strong athletic identity there is a negative view of the aging process and a vulnerability to the experience of aging. This difficulty may be experienced as the former athletes with aging bodies are constantly comparing too and measuring against the former performing body (Phoenix et al., 2005). Within Taylor and Ogilvie's (1994) Conceptual Model of Athletic Retirement, age has an important influence. This is primarily seen in the physiological influence, with the

decline in physical capacities that comes with age. As athletes retire and decrease investment in exercise, a loss of physical prowess and capacities occurs (Stephan et al., 2003a). For some athletes, health at the time of retirement can affect overall adjustment, particularly if the athlete has incurred chronic disabilities or injuries due to their athletic career. For example, 10% of former elite hockey players reported that an injury incurred in hockey caused them difficulty at work or in leisure activities (Curtis & Ennis, 1988). In many cases, athletes experience their new physical selves as a "suffering body" due to the changes and ailments such as weight gain, decreasing physical competencies, bodily tension, pain, and tiredness that accompany a drastic reduction in training and deregulation of eating habits (Chamaldis, 1997; Stephan & Bilard, 2003; Wylleman, De Knop, Menkehorst, Theebom, & Annerel, 1993). This suffering body may feel burdensome to the former athlete and have a direct impact on body image and body satisfaction. Due to lifestyle changes, athletes experience a discrepancy between the training schedules and physical activity they are accustomed to and a normal, healthy level of exercise, post-retirement. As this change brings about bodily difficulties, the weight gain, muscles mass, and pain may become worries and preoccupations (Stephen et al., 2007).

Discrepancy. Discrepancy may play a role in the difficulties athletes encounter towards their physical selves following retirement. Stephan et al. (2003a) found that physical self-worth and its subdomains, along with global self-esteem were all significantly lower for those athletes in retirement transition. The authors propose that such a difference may be attributed to the discrepancy between over-investment in physical activity and a more sedentary career and related bodily changes. These athletes

appear to be vulnerable to decreased perceptions of competence, even when they continue to be involved in exercise. There have been direct links between physical self-perceptions and level of physical activity, so it is quite logical that current athletes, whose day-to-day activities focus on physical activity, would have higher physical self-perceptions. For retired athletes, the physical changes may bring about the awareness that they are no longer as competent as when they were active, elite athletes, resulting in a continuous reminder of the discrepancy from their former self. The authors propose that global self-esteem of transitional athletes is lower as a result of that discrepancy between the current and former self experienced, as well as the loss of reinforcement from the social environment towards in regards to physical performance. According to Kendzierski, Furr, and Schiavoni (1998), retired athletes often described their past athleticism as a standard not currently being met. Although many remain involved in activity, the decrease from previous investment may be interpreted as decreased commitment, thus the individual may no longer hold the self-definition of being an athlete. Considering discrepancy provides an important window to understanding the mechanisms underlying the experience of retired athletes.

Conclusion

The physical self has a powerful influence over the athletes who have invested so much into those bodies as their instruments. As a potential decline in physical capacities and deterioration of the body occurs, former high level athletes may experience difficulties on both a physiological and psychological level. Stephen at al. (2003) attributed a decline in global self-esteem five months post-retirement to diminished physical capacities and possibly discrepancy. Even for those former collegiate athletes

who remain physically active and competitive, it is likely to be a different experience with their bodies and athletics than it was at one time. Athletes' relations with their bodies are complex, and likely continue to be so after their formal athletic careers have ended. The current literature presents a number of constructs which can be brought together to obtain a deeper understanding of the experience of the retired collegiate athlete, particularly in regards to the relationship with the performing body that no longer performs at the collegiate athletic level it once did.

APPENDIX II:

MATERIALS AND MEASURES

Informed Consent

You must be 18 years or older and a former Mizzou athlete to participate in this survey. Your completion of the survey is voluntary and you may stop at any time. The survey takes approximately 20-30 minutes to complete, and your responses are anonymous. They will not be associated with your name, email address, or year of athletic participation. Once you have finished the survey, you will be entered into a random drawing for a $250 donation to the Tiger Scholarship Fund made in your name.

Little is known about the experiences of former collegiate athletes. This study intends to obtain a better understanding of collegiate athletes in their post-collegiate lives. The ultimate goal of this study is to be able to help current athletes by having a better understanding of what occurs when they leave collegiate athletics. With this information, we hope to have the ability to better serve athletes in their collegiate and post-collegiate years.

Feel free to contact the Jeni Shannon, M.Ed at jksc22@mizzou.edu if you desire assistance with completing this survey or have any questions regarding this research study. If you have any questions regarding your rights as a participant in research, please contact the Campus Institutional Review Board at (573) 882-9585.

There is a risk of experiencing discomfort when disclosing personal information. If you have any questions, concerns, or emotional difficulties that arise during this survey, please contact the researcher at jksc22@mizzou.edu or 882-8646 for resources and referrals.

Thank you for your participation.

THE PHYSICAL SELF PERCEPTION PROFILE (PSPP)

WHAT AM I LIKE?

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

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

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

	Really True for Me	Sort of True for Me				Sort of True for Me	Re Tru for
			EXAMPLE				
	❍	❍	Some people are very competitive	BUT	Others are not quite so competitive	⊗	❍
			REMEMBER to check only ONE of the four circles				
1	❍	❍	Some people feel that they are not very good when it comes to playing sports.	BUT	Others feel that they are really good at just about every sport	❍	❍
2	❍	❍	Some people are not very confident about their level of physical conditioning and fitness	BUT	Others always feel confident that they maintain excellent conditioning and fitness	❍	❍
3	❍	❍	Some people feel that compared to most, they have an attractive body	BUT	Others feel that compared to most, their body is not quite so attractive	❍	❍
4	❍	❍	Some people feel that they are physically stronger than most people of their sex	BUT	Others feel that they lack physical strength compared to most others of their sex	❍	❍
5	❍	❍	Some people feel extremely proud of who they are and what they can do physically	BUT	Others are sometimes not quite so proud of who they are physically	❍	❍

	Really True for Me	Sort of True for Me				Really True for Me	Sor Tru for
6	❍	❍	Some people feel that they are among the best when it comes to athletic ability	BUT	Others feel that they are not among the most able when it comes to athletics	❍	(
7	❍	❍	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	❍	(
8	❍	❍	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	❍	(
9	❍	❍	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	❍	(
10	❍	❍	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	❍	(
11	❍	❍	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	❍	(
12	❍	❍	Some people do not usually have a high level of stamina and fitness	BUT	Others always maintain a high level of stamina and fitness	❍	(
13	❍	❍	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 wearing few clothes	❍	(
14	❍	❍	When it comes to situations requiring strength some people are one of the first to step forward	BUT	When it comes to situations requiring strength some people are one of the last to step forward	❍	(

	Really True for Me	Sort of True for Me				Really True for Me	Sor Tru for
15	❍	❍	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	❍	(
16	❍	❍	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	❍	(
17	❍	❍	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	❍	(
18	❍	❍	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	❍	(
19	❍	❍	Some people tend to lack confidence when it comes to their strength	BUT	Others are extremely confident when it comes to their physical strength	❍	(
20	❍	❍	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	❍	(
21	❍	❍	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	❍	(
22	❍	❍	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	❍	(

	Really True for Me	Sort of True for Me				Really True for Me	Sor Tru for
23	❍	❍	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	❍	(
24	❍	❍	Some people feel that they are very strong and have well developed muscles compared to most people	BUT	Others fell that they are not so strong and their muscles are not very well developed	❍	(
25	❍	❍	Some people wish that they could have more respect for their physical selves	BUT	Others always have great respect for their physical selves	❍	(
26	❍	❍	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	❍	(
27	❍	❍	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	❍	(
28	❍	❍	Some people are extremely confident about the appearance of their body	BUT	Others are a little self-conscious about the appearance of their bodies	❍	(
29	❍	❍	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	❍	(
30	❍	❍	Some people feel extremely satisfied with the kind of person they are physically	BUT	Others sometimes feel a little dissatisfied with their physical selves	❍	(

Scoring PSPP

Physical Self Worth (Global)	5,10,15,20,25,30
Sport	1,6,11,16,21,16
Condition	2,7,12,17,22,27
Body	3,8,13,18,23,28
Strength	4,9,14,19,24,29

Recode 3,4,5,6,7,9,14,16,18,20,22,24,26,27,28,30, (4=1,3=2,2=3,1=4)

How I Feel about Sport Inventory

Directions: For each of the following 10 statements, indicate (circle) on a scale of 1 to 7 how you feel about each statement.

1. I consider myself an athlete.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

2. I have many goals related to sport.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

3. Most of my friends are athletes.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

4. Sport is the most important part of my life.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

5. I spend more time thinking about sport than anything else.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

6. I need to participate in sport to feel good about myself.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

7. Other people see me mainly as an athlete.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

8. I feel bad about myself when I do poorly in sport.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

9. Sport is the only important thing in my life.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

10. I would be very depressed if I were injured and could not compete in sport.

Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

Rosenberg Scale

Directions: Please answer the following items as honestly as you can. Using the scale below, circle the response that best describes how you feel about yourself generally.

	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
1. On the whole, I am satisfied with myself.	SD	D	A	SA
2. At times I think I am no good at all.	SD	D	A	SA
3. I feel I have a number of good qualities.	SD	D	A	SA
4. I am able to do things as well as most other people.	SD	D	A	SA
5. I feel I do not have much to be proud of.	SD	D	A	SA
6. I certainly feel useless at times.	SD	D	A	SA
7. I feel that I'm a person of worth, at least on an equal plane with others.	SD	D	A	SA
8. I wish I could have more respect for myself.	SD	D	A	SA
9. All in all, I am inclined to feel that I am a failure.	SD	D	A	SA
10. I take a positive attitude toward myself.	SD	D	A	SA

Scoring Instructions

1. Items 2, 5, 6, 8, and 9 are reverse scored.
2. A good score is a high score.
3. Score range is 10-40.

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** and **moderate** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

PART 1: JOB-RELATED PHYSICAL ACTIVITY

The first section is about your work. This includes paid jobs, farming, volunteer work, course work, and any other unpaid work that you did outside your home. Do not include unpaid work you might do around your home, like housework, yard work, general maintenance, and caring for your family. These are asked in Part 3.

1. Do you currently have a job or do any unpaid work outside your home?

☐ **Yes**

☐ No → ***Skip to PART 2: TRANSPORTATION***

The next questions are about all the physical activity you did in the **last 7 days** as part of your paid or unpaid work. This does not include traveling to and from work.

2. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, heavy construction, or climbing up stairs **as part of your work**? Think about only those physical activities that you did for at least 10 minutes at a time.

_____ **days per week**

☐ No vigorous job-related physical activity → ***Skip to question 4***

3. How much time did you usually spend on one of those days doing **vigorous** physical activities as part of your work?

_____ **hours per day**

_____ **minutes per day**

4. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads **as part of your work**? Please do not include walking.

_____ **days per week**

☐ No moderate job-related physical activity → ***Skip to question 6***

5. How much time did you usually spend on one of those days doing **moderate** physical activities as part of your work?

_____ **hours per day**

_____ **minutes per day**

6. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time **as part of your work**? Please do not count any walking you did to travel to or from work.

_____ **days per week**

☐ No job-related walking → ***Skip to PART 2: TRANSPORTATION***

7. How much time did you usually spend on one of those days **walking** as part of your work?

_____ **hours per day**

_____ **minutes per day**

PART 2: TRANSPORTATION PHYSICAL ACTIVITY

These questions are about how you traveled from place to place, including to places like work, stores, movies, and so on.

8. During the **last 7 days**, on how many days did you **travel in a motor vehicle** like a train, bus, car, or tram?

_____ **days per week**

☐ No traveling in a motor vehicle → ***Skip to question 10***

9. How much time did you usually spend on one of those days **traveling** in a train, bus, car, tram, or other kind of motor vehicle?

_____ **hours per day**

_____ **minutes per day**

Now think only about the **bicycling** and **walking** you might have done to travel to and from work, to do errands, or to go from place to place.

10. During the **last 7 days**, on how many days did you **bicycle** for at least 10 minutes at a time to go **from place to place**?

_____ **days per week**

☐ No bicycling from place to place → ***Skip to question 12***

11. How much time did you usually spend on one of those days to **bicycle** from place to place?

_____ **hours per day**

_____ **minutes per day**

12. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time to go **from place to place**?

_____ **days per week**

☐ No walking from place to place → ***Skip to PART 3: HOUSEWORK, HOUSE MAINTENANCE, AND CARING FOR FAMILY***

13. How much time did you usually spend on one of those days **walking** from place to place?

_____ **hours per day**

_____ **minutes per day**

PART 3: HOUSEWORK, HOUSE MAINTENANCE, AND CARING FOR FAMILY

This section is about some of the physical activities you might have done in the **last 7 days** in and around your home, like housework, gardening, yard work, general maintenance work, and caring for your family.

14. Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, chopping wood, shoveling snow, or digging **in the garden or yard**?

_____ **days per week**

☐ No vigorous activity in garden or yard → ***Skip to question 16***

15. How much time did you usually spend on one of those days doing **vigorous** physical activities in the garden or yard?

_____ **hours per day**

_____ **minutes per day**

16. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, sweeping, washing windows, and raking **in the garden or yard**?

_____ **days per week**

☐ No moderate activity in garden or yard → ***Skip to question 18***

17. How much time did you usually spend on one of those days doing **moderate** physical activities in the garden or yard?

_____ **hours per day**

_____ **minutes per day**

18. Once again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, washing windows, scrubbing floors and sweeping **inside your home**?

_____ **days per week**

☐ No moderate activity inside home → ***Skip to PART 4: RECREATION, SPORT AND LEISURE-TIME PHYSICAL ACTIVITY***

19. How much time did you usually spend on one of those days doing **moderate** physical activities inside your home?

_____ **hours per day**

_____ **minutes per day**

PART 4: RECREATION, SPORT, AND LEISURE-TIME PHYSICAL ACTIVITY

This section is about all the physical activities that you did in the **last 7 days** solely for recreation, sport, exercise or leisure. Please do not include any activities you have already mentioned.

20. Not counting any walking you have already mentioned, during the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time **in your leisure time**?

_____ **days per week**

☐ No walking in leisure time → ***Skip to question 22***

21. How much time did you usually spend on one of those days **walking** in your leisure time?

_____ **hours per day**

_____ **minutes per day**

22. Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like aerobics, running, fast bicycling, or fast swimming **in your leisure time**?

_____ **days per week**

☐ No vigorous activity in leisure time → ***Skip to question 24***

23. How much time did you usually spend on one of those days doing **vigorous** physical activities in your leisure time?

_____ **hours per day**

_____ **minutes per day**

24. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles tennis **in your leisure time**?

_____ **days per week**

☐ No moderate activity in leisure time → ***Skip to PART 5: TIME SPENT SITTING***

25. How much time did you usually spend on one of those days doing **moderate** physical activities in your leisure time?

_____ **hours per day**

_____ **minutes per day**

PART 5: TIME SPENT SITTING

The last questions are about the time you spend sitting while at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading or sitting or lying down to watch television. Do not include any time spent sitting in a motor vehicle that you have already told me about.

26. During the **last 7 days**, how much time did you usually spend **sitting** on a **weekday**?

_____ **hours per day**

_____ **minutes per day**

27. During the **last 7 days**, how much time did you usually spend **sitting** on a **weekend day**?

_____ **hours per day**

_____ **minutes per day**

This is the end of the questionnaire, thank you for participating.

Demographics

1. Age _____
2. Gender Male Female Transgender
3. Race/Ethnicity

   African American

   Asian/Pacific Islander

   European American

   Latino/Hispanic

   Native American

   Multiracial

   Other: _____
4. Marital status:

   Never married/Single

   Married

   Divorced/Separated

   Widowed

   Civil Union
5. Graduation year: _____
6. Collegiate Sport Played

   Baseball

   Basketball

   Football

   Golf

   Gymnastics

   Soccer

   Softball

   Swimming & Diving

   Tennis

   Track & Field

   Volleyball

   Wrestling

Other: _____

7. Highest level of competition

   Collegiate

   Semi-Professional

   Professional

   Olympic

   Other: _____

8. If played post-collegiate, how long involved: _____
9. In terms of your collegiate sport:
   a. Are you still involved?
   b. If yes, on what level?
      i. Recreationally
      ii. Locally Competitive
      iii. Regionally Competitive
      iv. Nationally Competitive
      v. Internationally Competitive
   c. If no, how long been inactive from your collegiate sport: _____
   d. If no, Why I stopped playing: _____
10. Other than your collegiate sport, are you still physically active? Yes

    No

    a. If yes, what sports/activities do you participate in _____
    b. If yes, on what level?
       i. Recreationally
       ii. Locally Competitive
       iii. Regionally Competitive
       iv. Nationally Competitive
       v. Internationally Competitive

11. Outside of physical activity, are you involved in athletics in any other way (i.e. Profession, coaching, judging, managing, etc.) Yes No
    a. If yes, in what capacity? _____

12. Profession: _____

13. Do you consider yourself to be an “athlete” today? Yes No

VITA

Jennifer Shannon was born in Phoenix, Arizona on December 25, 1982. She graduated from Paradise Valley High School in 2001. She earned a Bachelor of Arts in Psychology from the University of Arizona in 2005, graduating with Honors, Magna Cum Laude. She began the APA-accredited Counseling Psychology doctoral program at the University of Missouri in the fall of 2005. She completed her Master of Education in Counseling Psychology in May 2007, and continued her doctoral work. She will begin her APA-accredited predoctoral internship at the University of California-Davis Counseling and Psychological Services in August 2010. She will complete her internship and thus fulfill all requirements for her Doctorate of Philosophy in August 2011.