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FORMER INTERCOLLEGIATE ATHLETES

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MERCEDES E. CARSWELL

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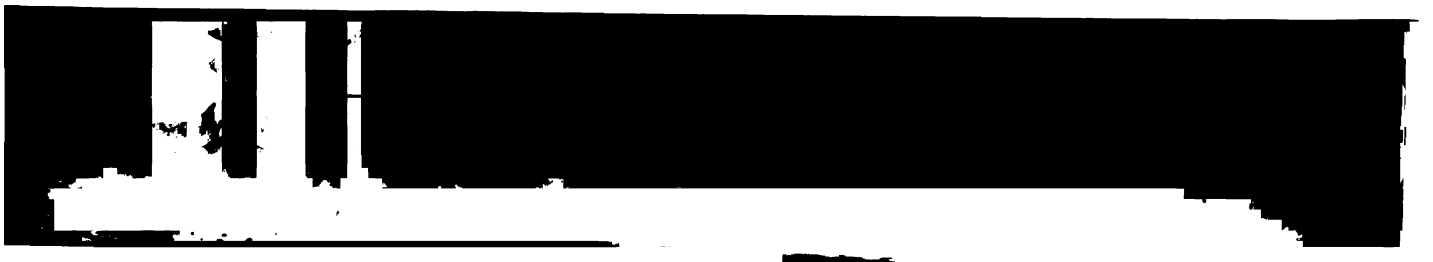

# PREDICTORS OF RETIREMENT DISTRESS AMONG MALE FORMER INTERCOLLEGIATE ATHLETES

By

Mercedes E. Carswell

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ABSTRACT

PREDICTORS OF RETIREMENT DISTRESS AMONG MALE FORMER INTERCOLLEGIATE ATHLETES

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Utilizing Taylor and Ogilvie's (1994) model of adaptation to career transition, this study identified predictors of maladaptive transitions out of sports (i.e., the presence of psychological distress) among male intercollegiate athletes who retired due to deselection. Former student-athletes ($N$ = 140) from revenue-producing sports completed an online retrospective questionnaire. Structural equation modeling analyses revealed that current levels of psychological distress were associated with lower career decision-making self-efficacy, the use of maladaptive coping strategies, greater losses in participation motivation factors, and lower levels of perceived social support at the time of retirement. There was not a significant relationship between athletic identity at the time of retirement and current distress. Additionally, no support was found for the hypotheses that identity foreclosure and masculinity predicted psychological distress. Overall, 46% of the variance in psychological distress was accounted for by the predictor variables in the final model. Multiple regression analyses indicated that racial identity was not a significant predictor of distress among athletes of color. Furthermore, social support was not a moderator of distress for any of the predictor variables. Implications in the areas of student-athlete development and student-athlete support services are discussed.

Dedicated to any other graduate students who ever questioned if they were good enough – the answer is YES!

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

# CHAPTER I

## INTRODUCTION

Inevitably, every elite sport career will end. All athletes will arrive at a point where age, injury, or ability requires their transition out of competitive sport. Careers may end at any point, from high school, college, or professional athletic programs. Transitions out of intercollegiate athletics are of special interest due to the number of student-athletes who invest more than 20 hours a week to their sport before leaving the collegiate ranks (Brown & Glastetter-Fender, 2000). By the time many college student-athletes reach the end of their eligibility, they have dedicated 10 or more years to their sport (McPherson, 1980). Dedication of this magnitude to a single aspect of an individual's life could easily result in a desire for a greater return for the significant time and physical investment. This desire is apparent in the number of student-athletes who covet a position on a professional team. The estimated percentage of intercollegiate athletes who aspire to play at a professional level ranges from 17% to 66% (ARI, 1989; Blann, 1985; Brown & Glastetter-Fender, 2000; Curry, 1993; Kennedy & Dimick, 1987; Smallman & Sowa, 1996). Despite players' aspirations, the majority of intercollegiate athletes will never play in the professional arena. The NCAA (2004) estimated that 1.3% of men's basketball, 2.0% of football and 4.1% of ice hockey student-athletes will move from a NCAA institution to professional sports. Inherent in these statistics is the idea of deselection, the inability to further one's career by failing to successfully compete at a higher level of competition. Deselection is the leading source of athlete attrition (Ogilvie & Howe, 1986). Given that the majority of intercollegiate athletes will face retirement from elite level sports due to deselection, athletes' transition out of sport is of interest to

psychologists because of the end of the financial, emotional, and social benefits derived from elite-level sports.

Retirement experiences among athletes have been examined at the collegiate and professional level of play. Several studies were completed with contradictory results. For instance, a number of researchers suggest that athletes frequently experience some form of psychological complications when transitioning out of sports, including symptoms of depression, anxiety, isolation, decreased self-esteem and substance abuse (Allison & Meyer, 1988; Blinde & Stratta, 1992; Haerle, 1975; Kleiber & Brock, 1992; Messner, 1992; Mihovilovic, 1968; Murphy, 1995; Svoboda & Vanek, 1982; Webb et al., 1998; Werthner & Orlick, 1986). Other researchers argue that the majority of athletes experience minimal to no psychological distress or decrease in life satisfaction during their retirement process (Curtis & Ennis, 1988; Greendorfer & Blinde, 1985; Kleiber et al., 1987; Perna, Zaichkowsky, & Bocknek, 1996). However, the researchers who propose that athletic retirement is a transitional period with relatively minor disturbances also generally report that a small portion of their participants do report some level of distress at the point of retirement. Even researchers who suggest that retirement is a generally positive process acknowledge that up to 20% of retired athletes experience significant difficulty when retiring from their sports (Lavallee et al., 2000). Therefore, whether or not the majority of athletes experience a healthy transition from sport may not be the most significant issue. There appears to be a number of athletes who face transition difficulties when they retire. Clarification is required to understand what factors contribute to difficulties in adapting to athletic retirement.

Although the consequences of retirement have been examined extensively, few studies address the assortment of individual factors that may contribute to the quality of an athlete's transition. Individual differences may assist in identifying reasons behind the contradictory findings. In an attempt to reconcile the inconsistent research findings in the athletic retirement literature while incorporating potential individual differences, Taylor and Ogilvie (1994) constructed a conceptual model of athletic retirement that presents trajectories towards healthy and maladaptive transitions. Based on their review of earlier theoretical work and empirical research, the authors theorize that the cause of retirement (age, deselection, injury, or free choice) influences individual factors related to adaptation as well as the available resources the athletes have to address their retirement difficulties. Individual factors include developmental experiences, self-identity, perception of control, social identity, and tertiary contributors such as socioeconomic class and minority status. Available resources incorporate the retiring athlete's coping skills, social support and pre-retirement planning (Figure 1).

Taylor and Ogilvie (1994) suggested that individual factors interact with the athlete's available resources to determine the quality of retirement from sport. The authors noted that retirement may be a healthy transition or a maladaptive process inclusive of psychopathology, substance abuse, occupational problems, and family/social concerns. Although their model identifies multiple contributors to adaptation, the authors did not empirically test the model and it is not clear how these components interact with one another or what configuration of factors could encourage a positive transition from sport. Likewise, the model does not provide detail about a pattern of variables that may serve as risk factors for retirement crises. Additional research is needed to explain how

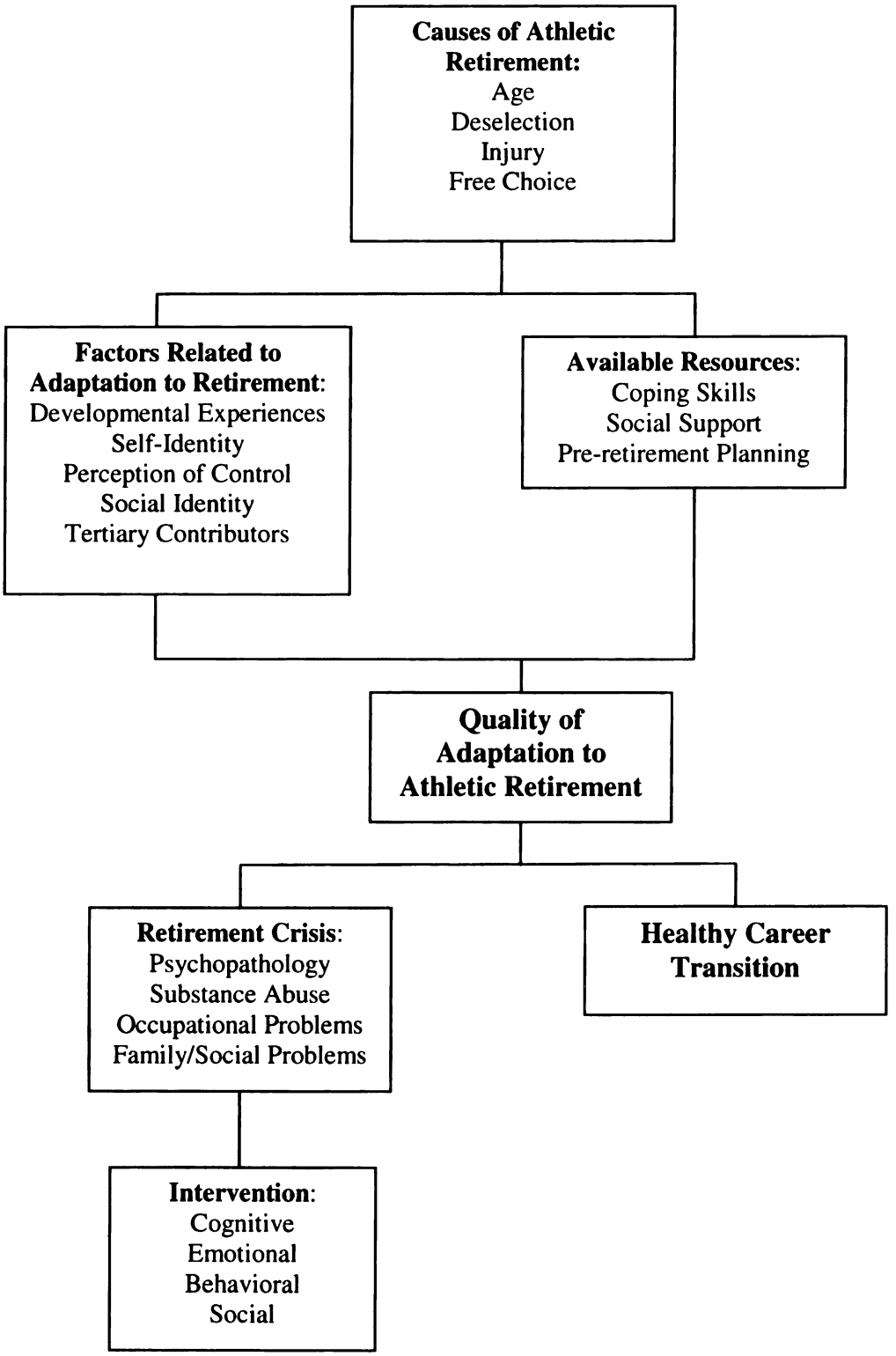


Figure 1. Conceptual model of adaptation to retirement among athletes (Taylor & Ogilvie, 1994).

the variables identified in the adaptation model relate to maladaptive retirement experiences.

As noted earlier, deselection is the most common reason for retirement among intercollegiate athletes. Thus, the population of intercollegiate athletes leaving sport due to deselection (compared to injury or free choice) provides a sizable potential sample to investigate a specific segment of the conceptual model of athletes adaptation to retirement. Additionally, findings in this area may have far reaching applicability in the area of student-athlete development given the over 16,000 student-athletes in basketball, football, and hockey who do not move to the next level each year (NCAA, 2004).

How these former athletes adjust to their life without elite sports will vary based on individual and environmental factors. Identity, the manner in which people define themselves, is one potential individual factor that could predict which deselected athletes adjust poorly to retirement. Research suggests that athletic identity may play a role in adaptation to retirement (Brewer, Van Raalte, & Linder, 1993). Higher athletic identification is associated with difficult retirements (Lavellee, Gordon, & Grove, 1997; Webb et al., 1998). However, researchers note that a strong and exclusive athletic identity is required to see the detrimental affects on adaptation to retirement (Blinde & Greendorfer, 1985). Few studies include measures of one aspect of athletic identity, identity foreclosure, which is a commitment to an identity without exploring alternative options (Marcia, 1966) and could address the issue of identity exclusivity. Therefore, research on athletic identity and retirement can be strengthened by the incorporation of measures assessing the athlete's level of foreclosure.

Masculinity, conceptualized as an aspect of athletic identity for males for purposes of this work, is another factor that could potentially influence transition out of sports. Masculinity has been highly associated with athletic participation (Caron, Carter, & Brightman, 1985). If a male athlete is no longer able to participate at an elite level, the loss of sports may pose a threat to masculinity, thereby increasing the chances of psychological distress.

Self-complexity, the number of identities and level independence among them, may influence the athletes' level of distress after retirement. Individuals with a greater number of identities report lower levels of psychological distress than individuals with fewer identity alternatives (Thoits, 1983). One potential alternative identity for athletes of color is racial identity, which could also influence the retirement process. A strong racial identity might hinder the group processes on interracial athletic teams. However, a strong racial identity has been found to be protective in other domains against symptoms of depression and anxiety (Cross, 1991; Helms, 1990; Sellers et al., 1998). High athletic identity appears to have a diminishing effect on the strength of an athlete's racial identity (Jackson et al., 2002). Therefore, low racial identity, while potentially adaptive in sport, may hinder transition when the faced with the loss of the athlete role.

Intercollegiate athletes, when compared to their non-athlete peers, are less mature in their ability to make career decisions (Kennedy & Dimick, 1988; Martens & Cox, 2000; Sowa & Gressard, 1983). Although Taylor and Ogilvie (1994) identify pre-retirement planning as a contributor to the quality of adaptation, they do not address how the student-athletes' beliefs in their ability to use their limited pre-retirement knowledge could influence the model. Career decision-making self-efficacy is a strong predictor of

future career exploratory behaviors and vocational decisiveness (Betz, 2001). Research investigating transitions into a new career may consider career decision-making self-efficacy as a potential contributor the adaptation process.

The stressors facing deselected athletes are addressed with some form of coping mechanisms, whether the strategies are adaptive or maladaptive. Limited research in the area of coping with athletic retirement suggests that athletes will generally use coping strategies that are associated with healthy transitions from sport (Sinclair & Orlick, 1994). However, athletes with strong athletic identities may have more maladaptive coping strategies (Grove, LaVallee, & Gordon, 1997). Studies have failed to examine the specific coping skills used by former college student-athletes who do not have a positive transitional experience. There may be specific coping skills that are predictive of a poor transition from elite sports.

One's loss of participation in intercollegiate athletics may also result in the loss of many of the benefits gained from sport participation. Often, the incentives for participating in sports are non-tangible reinforcers such as achievement or a sense of belonging. Gould, Feltz and Weiss (1981, 1985) identified seven athletic participation motivation factors: achievement/status, team atmosphere, excitement/challenge, fitness, energy release, skill development, and friendship. The factors are supported by the findings in other sport-related participation motivation research (Dwyer, 1992; Gill, Gross, & Huddleson, 1983). According to self-determination theory, the factors that motivate behaviors (such as playing sports) also fulfill the basic psychological needs of competence, autonomy, and relatedness (Deci & Ryan, 1985). It is unclear what occurs when athletes are faced with the loss of intercollegiate sports and the athletic

participation motives as well as how this loss may contribute to retirement distress. It is conceivable that former athletes who have not found a new career or life situation that provides the motivating factors once derived from sports will have a difficult transition out of sports.

Social support appears to decrease the probability that a person will experience depression and anxiety when faced with life stressors (Swift & Wright, 2000). However, studies of athletes in transition show that strong athletic identity is related to inadequate social support networks after retirement (Baillie & Danish, 1992; Brewer et al., 1993; Messner, 1992). There is also evidence of a general deficiency in social support among intercollegiate athletes (Storch et al., 2005). Although athletes tend to have large social networks, they often are not receiving the social support they desire (Pearson & Petitas, 1990; Rosenfeld, Richman & Hardy, 1989). This discrepancy may be explained by perceived social support. Athletes may not perceive that their social supports are truly supportive. The physical availability of a particular social support does not necessarily mean that the support person will provide the emotional support required to counter the potential distress of retirement. Few studies have examined how the perceived social support that athletes receive during retirement may influence their adaptation to leaving sports. Perceived social support may be a more appropriate way of evaluating the influence of social support on athletes' adaptation to retirement.

*Purpose*

The primary aim of this study was to determine whether there are certain variables that serve as risk factors for psychological distress among male former student-athletes who played in revenue-producing college sports and were unable to play at a

professional level due to deselection. Utilizing Taylor and Ogilvie's (1994) conceptual model of adaptation to career transition, the study examined if and how these variables are associated with a maladaptive transition from sport for student-athletes whose careers ended due to deselection. More specifically, the study examined the main effects and potential interactions between identity factors (athletic identity, identity foreclosure, masculinity, and racial identity), career decision-making self-efficacy, maladaptive coping strategies, the loss of participation motivation factors, and perceived social support as predictors of psychological distress. Social support was also evaluated as a potential moderator of distress.

*Hypotheses*

The hypotheses that were tested are represented in Figure 2 and are stated as follows:

1. Identity risk factors at time of departure from sport are correlated to current psychological distress:
    a. Athletic identity positively and directly predicts distress.
    b. Identity foreclosure positively and directly predicts distress.
    c. Masculinity positively and directly predicts distress.
    d. For student-athletes of color, racial identity negatively and directly predicts distress.
2. Career decision-making self-efficacy (CDMSE) negatively and directly predicts distress.
3. Maladaptive coping strategies positively and directly predicts distress.
4. The loss of participation motivation factors positively and directly predicts distress.
5. Perceived social support negatively and directly predicts distress.
6. (Not modeled) Perceived social support moderates the relationship between maladaptive coping strategies and distress, identity risk factors and distress, CDMSE and distress, and loss of participation motivation factors and distress.

7. Athletic identity is positively correlated with maladaptive coping strategies.
8. Athletic identity is negatively correlated with social support.

*Definitions*

Variables and terms relevant to the current study are defined and/or operationalized as follows:

**Athletic identity** is defined as the degree with which student-athletes associate themselves with the athlete role and is represented by the total score on the Athletic Identity Measurement Scale (Brewer, Van Raalte, & Linder, 1993).

**Career decision-making self-efficacy (CDMSE)** is the degree of the belief that one can successfully complete the task of making career decisions (Betz, 2001). It is measured defined by the total score on select items from the CDMSE-SF (Betz et al., 2003).

**Deselection** is the inability to further one's athletic career and play at a higher level of competition for reasons unrelated to age, injury, or free choice (Ogilvie & Howe, 1986).

**Identity foreclosure** is a commitment to an identity, such as athlete, without exploring alternative options (Marcia, 1966). Foreclosure is measured defined by a combination of the interpersonal and ideological foreclosure subscales of the EOMEIS-2 (Bennion & Adams, 1986).

**Maladaptive coping strategies** are problematic coping strategies identified by Carver (1997) that include self-distraction, behavioral disengagement, denial, self-blame, and venting.

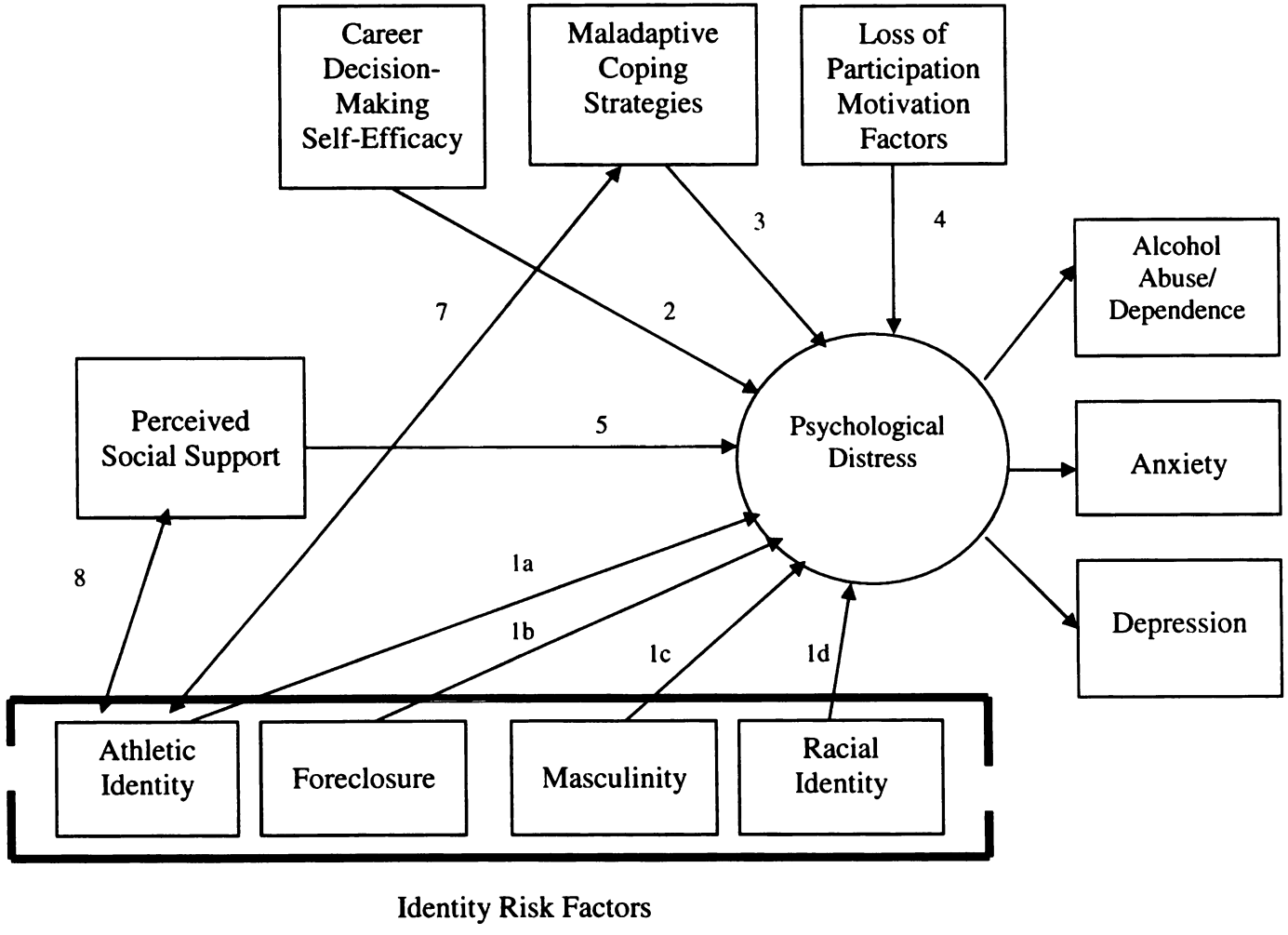


Figure 2. Model of hypothesized relationships.

**Masculinity** is a set of culturally ascribed characteristics that are expected from men (Craig, 1992). Masculinity is measured by the BSRI masculinity subscale score (Bem, 1981).

**Participation motivation factors** are the seven factors identified by Gould, Feltz and Weiss (1981, 1985): achievement/status, team atmosphere, excitement/challenge, fitness, energy release, skill development, and friendship.

**Perceived social support** is individuals' perceptions of how well their need for support, information, and feedback is being fulfilled by members of their social network (Procidano & Heller, 1983). Social support is measured by the total score on Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988).

**Psychological distress** is defined as clinical symptoms of depression, anxiety, and alcohol abuse/dependence as measured by the Personality Assessment Inventory subscales (Morey, 1991).

**Racial identity**, conceptualized as racial centrality, is the extent to which being of a certain race is central to an individual's definition of self and is measured by a total score on MIBI centrality scale (Sellers et al., 1997).

**Revenue-producing sports** are football, basketball, baseball, and hockey.

# CHAPTER II

## REVIEW OF LITERATURE

The current study considers predictors of retirement distress among deselected intercollegiate male athletes in revenue-producing sports. An extensive review of relevant retirement literature introduces the concept of retirement as a transition and then provides an outline of current research on athletic retirement. This is followed by an overview of various models of athletic retirement and the presentation of the model that serves as the basis for the proposed research. The literature review continues with an examination of potential predictors of retirement distress. Research in the areas of athletic identity, identity foreclosure, masculinity and racial identity is discussed and potential interactions among these variables are proposed. The career decision-making self-efficacy literature follows. After reviewing research findings in the areas of pre-retirement planning and career maturity, the concept of career decision-making self-efficacy is discussed as a potential predictor of retirement problems. Coping strategies associated with retirement are reviewed and maladaptive coping strategies are proposed as a predictor of distress. Participation motivation literature is outlined and the loss of the incentives gained from sports participation is proposed as a contributor to distress. Research studies on the utility of social support are examined and a case is made for perceived social support as a protective factor during retirement. Finally, literature focusing on athletes and psychological distress is reviewed. An argument is presented for clinical symptoms to be used as potential markers of retirement distress among former athletes.

## *Retirement*

### *Retirement as a Transition*[1]

Life is a process of continual change. Individuals experience countless transitions across the lifespan. A transition is a "sharp discontinuity with previous life events" (Brammer, 1992, pp 239). Schlossberg (1981) added that transitions are accompanied by a change in self-concept, individual behavior and relationships. Retirement requires a distinctive break from previous work experiences, changes in daily behavior, and social relationships. Therefore, retirement is a significant transition in one's lifetime.

Baillie (1993) noted that retirement marks the end of a pursuit in which an individual has invested a substantial amount of time, energy, and role identification. This conceptualization may be applied to sports as well. Greendorfer and Blinde (1985) observed that sport retirement, specifically from intercollegiate play, is better conceptualized as a transition process than a complete retirement given that many former athletes may stay active in their sport (e.g., coaching, playing recreationally, and working with athletes). For example, 75% of former athletes in their study were still participating in sport at some level and retirement from the role of intercollegiate athlete did not mark the end of their involvement with sports.

Brammer (1992) remarked that the majority of life transitions are associated with an experience of loss. This loss may have adverse consequences. Moos and Tsu (1976) noted that transitions have two contrasting psychological paths, an opportunity for individual growth or a chance for individual deterioration. Retirement, as a transition, can

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[1] Given that the current study dealt exclusively with athletes leaving intercollegiate sports due to deselection, the rather extensive literature in the area of athletic termination as a result of injury is not covered. The reader is referred to Brewer (1994) and Wiese-Bjornstal and colleagues (1998) for additional information.

be associated with some level of individual decline in well-being and may lead to serious psychological concerns. Hopson (1981) suggested that a period of self-doubt and feelings of depression are typical in a transitional period. Avery and Jablin (1988) surveyed more than 40 Fortune 100 companies and found that retired employees noted difficulties dealing with the loss of their peers, problems communicating with their spouses, and a significant reduction in self-esteem. Similar findings can be found in the sport retirement literature.

*Retirement from athletics*

In one of earliest and the most cited studies on adjustment to athletic retirement Mihovilovic (1968) found that in his sample of 44 former Yugoslavian soccer players, 53% missed the popularity being a team member gave them and 16% began drinking more after leaving their team. Retirement was described as a traumatic experience among those athletes who did not have a new profession to transition into after leaving their team. Haerle (1975) surveyed former professional baseball players and learned that 50% of participants were more oriented to their past sport experiences than to their future. Past-oriented athletes reported that they experienced regret, sadness, and shock during the transition process. In another study of reactions to athletic retirement with former athletes who played at the high school, college, or professional level, 46% of the participants indicated that a difficult retirement was "quite characteristic" or "very characteristic" of their overall experience (Webb, Nasco, Riley, & Headrick, 1998).

Research conducted with elite Olympic athletes has shown comparable results. Ungerleider (1997) interviewed 57 former U.S. Olympians and found that 42% of participants retrospectively reported minor difficulties when transitioning from sport to

the workplace. Another 21% reported having serious problems with the transition and 19% endorsed having very serious problems. The former Olympians experiencing very serious problems indicated that they were unable to make the adjustment from sport to the workplace. The former athletes also noted that they were unable to relinquish their identity as an elite athlete, suggesting that inappropriately holding onto an exclusive athletic identity may play a role in poor transitions. Notably, the ages of the participants ranged from 24 to 83 with a mean age of 45 years old. Therefore, these results may differ with a younger, intercollegiate sample.

International research with elite athletes also notes difficulties with athletic retirement. Svoboda and Vanek (1982) found that 83% of Czech Olympic athletes reported a variety of psychological, social, and vocational conflicts upon retirement from sport. Former elite French and Swedish athletes also indicated that they experienced a moderate level of negative emotions including emptiness, sadness, and uncertainty upon retirement (Stambulova, Stephan, & Jäphag, 2007). Werthner and Orlick (1986) evaluated former Canadian Olympians and found that 78.5% of the former athletes experienced a moderately to very difficult time with the termination process as well as an immediate drop in life satisfaction post-retirement. Additionally, the majority of the athletes in the study who stated that they had no real problems in adjustment also reported having a job in their sport after retirement, suggesting that they did not have to fully transition out of the athlete role. Particularly, 95% of the sample subsequently reported reaching increased or similar levels of satisfaction when compared to their satisfaction level during their athletic careers, signifying that the distress during the transition may be time-limited. Stephan and colleagues (2003) completed a study that

supports a time-limited distress period. The researchers completed semi-structured interviews with 16 French former Olympic athletes over the first 12 months following career termination and found that after an initial decrease in subjective well-being, athletes reported an increase, stabilization, and a final increase in well-being after retirement.

Investigations of transitions from intercollegiate sport also show that college athletes may be susceptible to distress in the retirement process. Blinde and Stratta (1992) found that 80% of the collegiate athletes who experienced unanticipated departures from their sport careers related the experience to that of death and dying. The athletes in this study were cut from the team or experienced their entire sports program being eliminated. There were also no participants from revenue-producing sports. Therefore, it is unclear how these results may generalize to former collegiate athletes who completed eligibility or who played in a revenue-sport.

In his 1993 publication, Baillie discussed a study with more than 200 retired elite athletes. Former Olympians, college football players, professional baseball players and professional hockey players were questioned about their emotional and functional adjustment to retirement from their sport. The majority of the former athletes indicated that they had adequately adjusted to retirement by the time the study was conducted. The participants noted that their adjustment took an average of 2 years, although some continued to report difficulties after 10 years. Baillie's results were supported by a later retrospective survey of former high school, college, and professional athletes. Webb and colleagues (1998) found that approximately 46% of their sample reported difficult retirements.

While there are a number of studies suggesting that athletes frequently experience some form of psychological complications when transitioning out of sports, a considerable amount of work supports the argument that athletic retirement is generally experienced with minimal discomfort. Lavallee and his research team (2000) suggested that no more than 20% of retired athletes experience significant difficulty when retiring from their sports career while the majority of athletes report a healthy transition out of sport. In a study of elite female tennis players, half of the sample expressed relief at the end of their sport careers (Allison & Meyer, 1988). In a study of former elite Slovan athletes, the majority of participants perceived their transition from sports as unproblematic with a minimal degree of difficulty (Erpić, Wylleman, & Zupančić, 2004). Only 8% of the Slovan former athletes described the career termination process as negative. However, the sizable majority (82%) of participants in the study described the end of their athletic career as voluntary and the research results indicated that former athletes who ended their athletic career involuntarily experienced more frequent and severe psychological concerns.

Curtis and Ennis (1988) surveyed former Canadian junior hockey players about their experience of leaving sport. When compared to same-aged peers in the general population, the former athletes did not significantly differ on measures of life satisfaction. Notably, some of former athletes in the study had difficulty adjusting to retirement. Over 50% of participants noted that retirement was a difficult event, 15% said they experienced "quite a feeling of loss," and 19% reported that they missed playing hockey "a lot." Another study using a Canadian sample found similar results. Sinclair and Orlick (1993) found that the majority (74%) of the former elite athletes in their sample were

generally satisfied with life after retirement and believed they handled their transition well (60%). Yet 11% of the former athletes were not satisfied with life and 15% thought they had handled the transition poorly. Additionally, 20% thought their time on the national team was more important than their current activities. Interestingly, 32% of participants reported taking 6 months to a year to adjust while another 22% said they needed more than 2 years to adapt to retirement. Overall, while the majority of the participants appear to have made a positive transition from sport, there are still a noteworthy number who experienced some difficulties.

While the body of research on retirement from professional sports is broad, there is limited research examining the effects of retirement from intercollegiate sports. In an early study of adjustment among athletes and non-athletes, former intercollegiate athletes had comparable levels of life satisfaction as non-athletes (Snyder & Baer, 1979). In later research, Greendorfer and Blinde (1985) conducted a retrospective study of Big Ten starting and non-starting athletes and found that 90% of their sample looked forward to life after college, and 57% noted that they were "quite satisfied" or "extremely satisfied" with their lives after retirement. However, as in other studies, a portion of participants reported difficulties with the retirement transition. Approximately 17% of participants noted some or extreme dissatisfaction with self upon retirement and 38% indicated that they "very much" or "extremely" missed sport involvement.

Attempting to identify results specific to intercollegiate revenue-sports, Kleiber and colleagues (1987) surveyed 426 former college basketball and football players and found that there were no significant differences in life satisfaction, regardless of the amount of recognition they received in their last year of play or how many games they

played. Only those athletes who had sustained a career ending injury were significantly less satisfied with life. However, the study was limited by the lack of a non-athletic peer comparison group. There is a possibility that while there were minimal within group differences in life satisfaction, the former athletes may have been less satisfied when compared to same-aged non-athletic peers.

Crook and Robertson (1991) reviewed the athletic retirement literature and noted that studies examining professional and elite former athletes shortly after their retirement tended to show support for difficult transitions. Additionally, studies designed to assess the adjustment of high school and college athletes several years after leaving their sport appeared to offer support for relatively easy transitions. The authors concluded that identifying the participation level of the athletes and the number of years after retirement is important when making inference from the athletic retirement research. It is possible that examining former college athletes shortly after their retirement could provide evidence for difficulty with the transition out of sports. Few studies have looked at former college athletes within a few years after retirement. Baillie (1993) noted that it took an average of 2 years for former athletes (Olympians, college football players, MLB and NHL players) in his study to adjust to retirement from sport. When completing retrospective work with former intercollegiate athletes, surveys assessing problems within or shortly after 2 years post-retirement may provide results supporting the notion of a difficult transition.

In summary, the literature provides evidence for and against the notion that athletic retirement is a difficult process. The time since retirement and whether or not the retirement was voluntary seems to affect the level of distress. Studies that normalize the

adjustment process and report that the majority of their sample have an uncomplicated adjustment period also have a significant, albeit smaller, number of athletes who did not transition well. Baillie (1993) noted that "although many athletes make successful and satisfactory transitions from sport to retirement, there are, at the high school, college, elite, and professional levels, significant numbers of athletes for whom the adjustment is difficult, incomplete, and traumatic (pp. 403)." Additionally, studies have discussed emotional adjustment in terms of life satisfaction measures and feeling word lists. Further research is needed to determine the presence of psychological disorders symptoms during former athletes' transition from sport. Regardless of how psychological distress in defined, there are athletes who find retirement highly distressing.

*Models of Athletic Retirement*

Blinde and Greendorfer (1985) noted that many of the early researchers in athletic retirement utilized theories from outside of sport: frequently thanatology and gerontology. Rosenberg (1981, 1982) discussed the two theories at length in two reviews of the theories' application to sport retirement. Thanatology theory relates retirement to a social death by social isolation or ostracism from former coworkers. The gerontology view of retirement associates retirement with old age in one of four underlying theories: disengagement theory – the working society and retiree withdraw each other for mutual benefits, activity theory – the retiree replaces the employee role with another role and keeps the same level of activity to prevent poor adjustment, and social break-down theory – the retiree internalizes a negative label from an external source upon retirement which leads to social withdrawal, and continuity theory – the retiree redistributes his/her energy among other roles after the loss of the employee role. Blinde and Greendorfer (1985)

observed that thanatology and gerontology theories are narrow approaches to retirement that conceptualized retirement as an abrupt event and not a transition. They argued that, without a transitional component, these theories are inappropriate for use with former athletes, especially intercollegiate athletes who generally neither completely withdraw from sports nor retire due to old age.

Research from the transition literature may be more applicable when conceptualizing athletic retirement. Schlossberg (1981) created a universal model to address the ways in which individuals adapt to transitions. She suggested that three factors influence an individual's adaptation to transition: the transition itself (role change, affect, source, timing, duration, degree of stress), available supports before and after the transition, and the individual (psychosocial competence, sex-role identification, age, health, race ethnicity, SES, values, and previous experience with transitions). Many of these factors are apt to be similar among former college student-athletes transitioning out of elite competition. There is probably minimal variance in the athletes' source of their retirement (injury or deselection), duration of the change (permanent), timing of the change ($4^{th}$ or $5^{th}$ year in college), age, and health. The remaining factors in the Schlossberg model of retirement suggests that former college student-athletes with a difficult role change, negative affect, inadequate social support, lack of prior transition experience, and minimal coping resources will have the most difficulty transitioning out of sport. Additional research is needed to determine if these factors are related to problems with transitioning out of athletics.

Similar to Schlossberg, Coakley (1983) theorized that transitions have multiple factors that impact an individual's well-being. He noted that retirement from sport is best

conceptualized in the context of many other variables of life circumstance. Coakley argued that retirement has individual (age, race) and external (support systems, resources) components. The reasons for termination (e.g., deselection, injury), will also affect the transitional process. He suggested that researchers must appreciate and evaluate the complexity of these factors in order to properly grasp the individual and group differences in the retirement process.

Building from the work of Schlossberg and Coakely, Taylor and Ogilvie (1994) constructed a conceptual model of athletic retirement. The model identifies factors contributing to the transitional process and presents trajectories towards healthy and maladaptive transitions. The cause of retirement is theorized as the first component in the model. Age, deselection, injury, and free choice are thought to have different affects on athletes' views of their retirement. The cause of retirement interacts with individual factors and available resources related to adaptation in the second section of the model. The authors noted that individual factors include developmental experiences, self-identity, perception of control, social identity, as well as tertiary contributors (other personal, social, and environmental factors). The available resources are assets athletes possess including coping skills, social support, and pre-retirement planning that can be used to address retirement difficulties. The individual factors and available resources interact to shape the quality of an athlete's retirement from sport. The model implies that retirement may then take one of two paths. Some former athletes make a healthy transition out of sport while others may have a more maladaptive process. Problems may include psychopathology, substance abuse, occupational problems, and family/social

concerns. In the final section of the model, the authors identified potential interventions for athletes experiencing a retirement crises.

While the Taylor and Ogilvie model identifies multiple contributors to adaptation, it remains somewhat vague on the way in which the components interact with one another. The lack of specificity appears purposeful. The authors remarked on the ease in which the model can be operationalized so that research can be conducted at each segment of the model. Additional research is needed to identify configurations of factors that could advance a poor transition from sport or serve as risk factors for retirement crises.

Based on the literature reviewed on models and theories of retirement from sport, the Taylor and Ogilvie model appears to be an appropriate and inclusive way to conceptualize athletic retirement and therefore serves as the theoretical basis for the present study. However, there are factors identified in the model that are not likely to vary among the sample of interest in this study, deselected former intercollegiate athletes. First, the cause of retirement, deselection, was identical across participants. Developmental experiences - the athlete's personal history in sport - are probably more similar than not among intercollegiate athletes. By the time they reach college, student-athletes have played a considerable number of games beginning in high school if not earlier. Presumably, the numerous years of practice and competition have socialized the players into their sport to a point that is relatively similar across the team members. Second, perception of control over retirement would seemingly not vary a great deal among deselected athletes. Taylor and Ogilvie (1994) noted that in cases in which athletes are deselected, the departure from sport is predominantly outside the control of

the retiring athlete. Athletes who leave sport due to deselection are more likely to believe they have little control in life's outcomes (Webb et al., 1998).

Using the model based on the work of Taylor and Ogilvie (Figure 2), the present study examined the predictive abilities of the remaining factors: self-identity, social identity, tertiary contributors (participation motivation), coping skills, social support, and pre-retirement planning (in terms of career decision-making self-efficacy).

*Identity*

The concept of identity can be defined using the theory of symbolic interactionalism, which posits that individuals define themselves socially and "self" emerges from everyday social interactions (Stryker, 1980). Further, self-definitions consist of social identities. Stryker (1980) noted that identities answer the question "who am I?" and that people answer this question in terms of their positions in various social relationships and the social roles that are attached to these positions. A football player may have an athlete identity based on his position on the football team and his role responsibilities that are attached to being a member of the team. Identity also determines how people behave in social situations (Stryker & Serpe, 1982; Thoits, 1983). Identity provides a behavioral script for day to day activities.

Stryker and Serpe (1982) suggested that each identity has a level of salience and commitment. Salience is the importance that individuals place on a particular identity and determines the likelihood that it will be invoked in any given situation. A student-athlete with a highly salient athlete identity might use that identity to direct his behaviors in the classroom, at home, and with family members. Commitment is the degree to which individuals' interpersonal relationships depend on them behaving in accordance with the

identity, occupying a particular position and playing a specific role. A male basketball player whose team and athletic future depend on him behaving as an athlete will likely commit to the role of athlete. Identity salience and commitment may also influence well-being. Stryker and Serpe (1982) hypothesized that the greater the commitment, the more salient the identity, and the greater the impact of role performance on role-specific self-esteem and general self-esteem. An athlete with a committed athletic identity has a more salient athletic identity and may become distressed when faced with mediocre performance on the playing field or no longer being able to perform in the role of an athlete.

Identity formation is a gradual process. Erikson (1968) proposed an eight-stage life cycle in which the fifth crisis, Identity versus Identity confusion, occurs during adolescence. During this stage, the organizing theme is finding a sense of self. Without prior commitment to a life role, individuals experiment with assorted personality characteristics before ultimately coming to some resolution about their self-definition. Although the identity crisis is associated with adolescence, Erikson hypothesized that identity development as a life-long task in that the identity crisis is never fully resolved. However, Erikson (1959) noted that obtaining an occupational status, such as "working" as an athlete at a university, can aid individuals in reaching a successful resolution. The period of personal identity instability may be disturbing for some adolescents and young adults, with potentially serious psychological implications. Erikson (1968) theorized that "in the social jungle of human existence there is no feeling of being alive without a sense of identity (p. 130)."

College is a time of exploration and experimentation. The majority of college students intend to make some type of "self-change" during their college years (Kiecolt & Mabry, 2000). However, some research has shown that student-athletes appear to be at risk for unresolved identity statuses. Nelson (1983) noted that college students who were not involved in collegiate athletics were more likely to resolve their identity crises than student-athletes. Some of the discrepancy may be associated with the way in which student-athletes incorporate athletics into their self-concept.

*Athletic Identity*

Many individuals define themselves by their type of work and friends they have (Brammer, 1991), implying that many student-athletes will define themselves as athletes. Athletic identity is "the degree to which an individual identifies with the athletic role" (Brewer, Van Raalte, & Linder, 1993, p. 237). Athletes on average have considerably higher athletic identity scores on the Athletic Identity Measurement Scale than non-athletes (AIMS; Brewer et al., 1993; Good et al., 1993). The athlete identity is thought to develop over time. McPherson (1980) proposed that athletes experience positive reinforcement from significant others early in their athletic career. Young athletes are also reinforced by the personal successes they experience in their sport which encourages them to further define themselves as athletes and increase their ego-involvement in the athlete role. Webb and colleagues (1998) noted that an athlete's public reputation also contributes to the formation of athletic identity. They argued that athletes may receive a high degree of social status and esteem by their community from athletic participation which could strengthen their identification with the athlete role.

Brammer and Abrego (1981) suggested that all transitions are associated with some form of loss, including the loss of important roles and self-identity. Years of intensifying their athletic identity may have negative consequences for elite athletes if sports participation is no longer available. Brewer (1993) reported that athletes who define their self-worth primarily based on their athletic performance are vulnerable to depression when faced with threats to their athletic performance. Although his results were based on his work with injured athletes, Brewer suggested that athletic identity would have the same association with depression following other identity-disrupting events (e.g., athletic career termination). Ogilvie and Howe (1982) agreed, noting that athletes who possess greater identification with their sport have an increased chance of experiencing a traumatic identity crisis when they must transition from elite athlete to former athlete.

The research generally supports the significance of athletic identity in the quality of athletic retirement. Webb and colleagues (1998) surveyed college students and alumni with a background in organized sports. There was a strong positive correlation between athletic identity and retirement difficulty with high levels of athletic identity associated with higher endorsement of retirement difficulty. However, although the correlation was significant for the full sample, it was not significant for the subsample of participants who retired because they were unable to compete at the next level. Yet the generalizability of the subsample finding is limited in that the subsample included athletes who retired after high school as well as athletes who retired after college and former professional athletes. It is possible that due to the increase in tangible and social rewards (e.g. scholarships, salary, media coverage) at higher levels of play, high school

athletes who were unable to play at the college level had less difficulty retiring from sports than college athletes who were unable to play at the professional level, or professional players who were cut from a team, thereby confounding the results.

Athletes with stronger athletic identities also take longer to adjust socially and emotionally to retirement (Grove, Lavellee, & Gordon, 1997). In a study of retirement among male and female former elite athletes, Lavellee and colleagues (1997) found that changes in athletic identity after retirement were associated with current negative affect. Decreases in athletic identity after retirement were associated with greater success in coping with retirement. Similar results were found in a longitudinal qualitative study of college student-athletes. Lally (2007) conducted interviews with six athletes at three time points - during their last season of competition, one month after retirement, and one year after retirement. The athletes who started to intentionally diminish the importance of their identification with the athlete role and began to explore their interest and identities outside of intercollegiate athletics prior to retirement reported smooth transitions out of college sports at the one year follow-up. The sole participant who reported transition difficulties was the only one who chose not to diminish his athletic identity before he retired. Notably, the study was limited by a small sample size as well as the use of Canadian athletes limiting the generalizability of the findings to U.S. student-athletes.

Alfermann (2004) assessed the retirement process among more than 250 former elite athletes with national and international competition experience from Germany, Lithuania, and Russia. High athletic identity was associated with a longer adaptation period, more negative emotions after career termination, and less life satisfaction. Another study with an international sample showed similar findings. Erpić, Wylleman,

and Zupančić (2004) assessed former elite Slovene athletes and found that the participants who reported a high athletic identity at the time of sport participation experienced more severe and frequent psychological difficulties during retirement than participants who identified less with the athlete role.

Overall, research suggests that student-athletes tend to strongly identify with the athlete role. This intense athletic identification appears to have a negative impact on transition from sport. Athletes endorsing strong athletic identities are more likely to experience a threat to their psychological well-being upon retirement and require a longer period to adjust to the loss of intercollegiate sports. Therefore, retirement crises may be highly prevalent among former intercollegiate athletes with strong athletic identifications.

High athletic identity alone does not foretell which former athletes will face poor retirement transitions. Most athletes strongly identify with the athlete role, but as discussed in the athletic retirement literature section, the majority of athletes do not have problematic transitions from elite sports. If strong athletic identity were the only predictor of significant distress, most athletes would experience some period of major difficulty in their adaptation to retirement. There must be additional factors related to the athletic identity construct that serve as risk factors to retirement distress.

*Athletic Identity-Related Attributes*

*Foreclosed Identity.* One attribute of athletic identity is the amount of identity exploration and level of commitment an individual makes to the athletic identity. Framed in Erikson's identity theory, Marcia (1966) constructed a general identity model consisting of four identity statuses: achievement, moratorium, diffusion and foreclosure. Each status is defined by the extent to which individuals actively search for their identity

and the degree of their commitment to that identity. Identity achievement, the hypothesized ideal state, is reached after a period of exploration followed by commitment to an identity. The moratorium stage is characterized by active exploration and a lack of commitment to an identity. Individuals in the moratorium stage are thought to be in a crisis due to their instability in self-definition. Individuals in identity diffusion tend to be indifferent to identity issues, neither exploring nor committing themselves to a consistent identity. Finally, foreclosure occurs when an individual has settled on an identity without exploration. Often, individuals do not explore other identities because their chosen identity was exceedingly encouraged by significant others and acceptance of the identity provided some type of benefit (e.g., esteem and awards). Additionally, each of the four identity statuses is theorized to incorporate two domains, interpersonal and ideological identity (Adams, 1998). Interpersonal identity reflects the influence of peer, familial, and romantic relationships while ideological identity concerns one's exploration and commitment to core values such as religion and politics.

Athletic identity and identity foreclosure are discrete yet correlated concepts (Good et al., 1993). Although most athletes place a great deal of importance on their athletic identity, they do not all have a foreclosed identity status. It appears to be those athletes who have a strong athletic identity and a foreclosed identity status that experience problematic transitions from sport. Brewer, Van Raalte, and Linder (1993) noted that individuals must identify as athletes, both highly and exclusively, for athletic identity to lead to difficult athletic retirements. A strong and exclusive athletic identity heightens stress and anxiety responses among retiring athletes (Grove et al., 1997). Marcia (1966) indicated that individuals with a foreclosed identity tend to become

extremely anxious in the face of threats to their careers. The loss of college athletics will likely force former athletes with foreclosed identities into at state of identity moratorium marked by instability and an incomplete sense of self. Therefore, athletes facing an identity threat due to deselection may experience anxiety during their transition from sport as they attempt to redefine themselves.

Student-athletes are at an increased risk for identity foreclosure due to their general lack of exploration of alternative identities (Nelson, 1983; Petitpas & Champagne, 1988). Good and colleagues (1993) found that intercollegiate athletes were significantly more foreclosed than non-athletes. The authors concluded that some college student-athletes identify with the athlete role to a point that they neglect the exploration of other identities. The lack of exploration could be explained by minimal interest in other identities, but could be due to a lack of time. Student-athletes' schedules are filled with practices, team meeting, work-outs and other sport-related requirements. As a significant amount of student-athletes' time is dedicated to sport, the time available to engage in identity development outside of their sport is limited (Petitpas & Champagne, 1988). Alder and Alder (1991) followed a college basketball team over 4 years assessing each team members' self-concept and identity roles. The student-athletes in the study experienced conflict among three central roles: student, athlete, and social being. The authors noticed that as the seasons progressed, the majority of the athletes had to redefine the salience of each role. Most of the athletes chose to concentrate on their athletic role/identity, a decision termed "role engulfment" (p. 176). Role engulfment occurred despite differences in ethnicity, class, academic success and career aspirations.

The type of sport an athlete plays also appears to be related to the probability of identity foreclosure. One study found that athletes in revenue-producing sports (defined as basketball, football, and ice hockey) have significantly higher foreclosure scores than athletes in other sports (Murphy et al., 1996). Therefore, athletes in revenue-producing sports tend to lack exploration into other identities, such as their "student" identity.

The lack of exploration into other identities that defines identity foreclosure might also tap into a lack of self-complexity. Self-complexity, the number of identities and level of independence among those identities, may influence the athletes' level of distress after retirement. Linville (1985) proposed that self-complexity, in terms of social roles (e.g., athlete, student, son, friend) or interpersonal relationships (e.g., teammate, competitor), can have serious consequences on psychological well-being. The lowest degree of complexity occurs when an individual has a small number of identities that are highly correlated; such as a student-athlete who has an athlete role, a teammate role, and a friend role that are particularly interrelated. Without self-complexity, negative feelings about the self in one domain will lead to the same poor evaluation of self in the other domains. Linville's research proposes that individuals with less self-complexity will show more extreme affect and that individuals who have distinct identities are buffered against negative affect (depression, sadness and anxiety) related to failure experiences.

Harris and Eitzen (1978) stated that the majority of athletes in their late teens or early 20s, who have dedicated themselves to their sport, are prone to derive their identity almost exclusively from sport participation. When this occurs, removal from sport may be detrimental. The harm seems contingent on retirement. Athletes who primarily base their identity on athletic participation may not face major psychological distress until they

are no longer able to participate in sport (Heyman, 1986). Without athletic identity or alternative identities to provide a script for everyday life, foreclosed athletes are without a way in which to organize their self-concept and more likely to experience an identity crisis.

To summarize, identity foreclosure is thought to reflect a lack of self-complexity in this study and appears to be a contributor to poor retirement adjustment among former athletes. When faced with retirement, individuals with a foreclosed identity may face moratorium and an identity crisis that often results in intense anxiety (Marcia, 1966). Athletes who are strongly identified with the athlete role and did not explore other identities before committing to an exclusive athlete identity are seemingly at risk for retirement distress.

*Masculinity.* Identifying with the role of athlete generally entails identifying with the qualities often associated with athletes. Identities may have certain attributes (i.e., personality traits or behaviors) that can provide additional meaning to a specific identity (Deaux, 1993). For example, the identity of mother may be associated with the attributes of compassion and resourcefulness. Athletic identity also has attributes. One such quality is masculinity; a set of culturally ascribed characteristics that are expected from men (Craig, 1992). The concept of masculinity seems embedded in the athlete role; sports and masculinity are socially intertwined. Sabo and Runford (1980) suggested that athletic and masculine are almost synonymous in American culture. Acknowledging that sports teams frequently serve as a school for the traditional male roles, Stein and Hoffman (1980) reported that society deems that "the development of athletic ability is an essential element in becoming a man (pp. 53)." The societal expectations of masculinity and

athletes were revealed in a study by Martin and Martin (1985), who surveyed undergraduate students regarding their beliefs about male athletes. The majority of the students perceived the ideal athlete as significantly more masculine than the ideal person.

Research suggests that male athletes integrate masculinity into their self-evaluation more than non-athletes. Stein and Hoffman (1980) examined the importance of the athlete role among male college students who either had extensive sports experience or no sports beyond a high school or college requirement. Non-athletes viewed the athletic role as an important component of the definition of manhood. The researchers suggested that the inability to meet the role of athlete limited non-athletes from membership in the male peer group and the opportunity to be "one of the guys."

Colley, Roberts and Chipps (1985) interviewed male and female college students. The students varied on their level of sport participation: no participation, individual sport or team sport. Data analysis revealed that sport participants had significantly higher scores on the Bem Sex Role Inventory (BSRI; Bem, 1980) masculinity subscale than non-athletes. There were no significant differences between individual and team sport participants. Similar results were discovered when Caron, Carter, and Brightman (1985) assessed sex-roles among male non-athletes and male student-athletes playing individual and team sports. Athletes in team sports scored significantly higher on the BSRI masculinity scale than athletes in individual sports or non-athletes.

Lantz and Schroeder (1999) also examined the relationship between the athlete role and masculintiy. Using the AIMS and BSRI, they assessed 301 college students and 113 student-athletes, male and female, and found that participants who identified highly with the athlete role also reported stronger masculine sex-role orientations. Further

analysis revealed that student-athletes endorsed higher levels of masculinity than non-athletes. Another study with a small, monoracial (only Caucasian) sample found similar results with athletes scoring higher in masculinity than non-athletes; however the results were not statistically significant (Houseworth, Peplow, & Thirer, 1989).

Thus, research suggests that masculinity and athletic identity are strongly interconnected. When the athlete role is lost, it is highly likely that masculinity will be affected as well. Given that high athletic identity appears to relate to poorer retirement transitions, a high level of masculinity may also be a risk factor for distress. Further research is needed to examine this potential relationship.

*Alternate Identities*

The lack of independent identities may be problematic for athletes in transition. For example, although classified as "student-athletes," intercollegiate athletes vary in how they conceptualize the student and athlete domains of their identity. Settles, Sellers, and Damas (2002) found that college student-athletes with high athletic identity scores were more likely to view "athlete" and "student" as a single role identity. The combination of roles allows student-athletes to focus their energies into one domain. However, it is unclear if the distribution of effort would be the same for "athlete" as it would be for "student." The authors found that students-athletes with a strong athletic identity tended to place less importance on academics. The lack of a separate student role identity among student-athletes with stronger athletic identity may be a barrier to career exploration. Directing energy to developing a student identity would likely include acquiring a skill set for future employment and exploration into careers congruent with

their academic major. Student-athletes with strong athletic identification may have a more foreclosed identity status.

Self-complexity theory suggest that athletes with high athletic identification and do not separate their "athlete" and "student" role are more likely to show affective extremity to a failure experience such as deselection. The theory also suggests that student-athletes with foreclosed identities and no alternative identities will experience distress upon retirement. Indeed, athletes who have a low number of alternative social roles are less likely to consider their options outside of the athlete role and are less apt to make a successful transition out of the intercollegiate athletics (Blinde & Greendorfer, 1985). Therefore, alternate identities may serve as a protective factor for athletes transitioning out of sport.

*Racial Identity.* One possible alternate identity for student-athletes of color (i.e., members of racial and ethnic minority groups) is racial identity. Racial identity is based on the social construct of a race and refers to an individual's identification with a particular racial group founded on a sense of common heritage (Helms, 1993). Strong racial identity is theoretically associated with life satisfaction and psychological well-being; individuals who have explored their racial distinctiveness and committed to their racial identity are more likely to report better psychological health (Cross, 1991; Helms, 1990). Racial identity centrality, the level of self-definition based on race, may also play a role in well-being (Sellers et al., 1998). Rowley and colleagues (1998) found a positive relationship between racial centrality and self-esteem among African American high school and college students. Using solely college students, Sellers and colleagues (2003) assessed over 500 African American college students on measures of racial identity,

discrimination and psychological distress. Results showed that racial centrality was negatively associated with psychological distress; students with stronger centrality were more likely to report lower levels of anxiety and depression symptoms. Racial centrality also served as a buffer, moderating the main effect of discrimination on psychological distress. These studies suggest that racial identity centrality promotes well-being and may serve as a protective factor for African American college students experiencing racial stressors.

Despite the benefits of racial identity, student-athletes of color do not appear to significantly incorporate this alternate identity. Jackson and colleagues (2002) surveyed over 500 incoming intercollegiate scholarship athletes at 24 universities. They found that high athletic identity tended to diminish the strength of racial centrality. This relationship was distinct among African American male student-athletes. African Americans who scored high on a scale of athletic identity were less likely to identify with their racial group. Racial identity appears to be low in centrality because the alternate identity, athlete identity, is highly central. The authors concluded that African American student-athletes reported low racial centrality due to the greater needs of their team. They suggested that strong racial centrality may hinder team cohesion and group processes on a multiracial team, a premise that would be in line with the theory of superordinate goals in sport (McClendon, 1974). McClendon argued that the pursuit of a common team goal reduces potential race conflict on the team. Therefore, viewing the self primarily as an athlete instead of by race is advantageous to the team. African American student-athletes, as members of an elite team, may not need the protective benefits of racial centrality. Their needs may be met with a strong athletic identity. Additionally, the athlete identity

may be more continuously rewarding on a larger scale than racial identity. The prestige of college athletics, admiration from peers, attention from the media, and tangible benefits (e.g. scholarships, clothing and accessories) could positively reinforce the importance of the athlete role over the racial role for an athlete of color.

Low racial centrality, while adaptive in sport, may hinder transition when student-athletes of color are faced with the loss of the athlete role. By minimizing racial identity during their time in college athletics, these former athletes may not have an alternative identity to protect against the negative consequence of identity loss. Athletes of color may face discrimination and racial stressors in college, but not truly experience the related distress until they lose their protective athlete role. While still in college, African American student-athletes report low levels of racial isolation and find their college experience relatively rewarding (Sellers, Kuperminc, & Waddell, 1991; Sellers & Damas, 1996). However, their positive viewpoint appears to change after leaving intercollegiate sport. For example, Parham (1993) noted that college student-athletes of color may feel used or forgotten by their athletic program after completing their eligibility. Perna and colleagues (1999) surveyed 33 graduating students and 43 graduating student-athletes from high-revenue sports (e.g. football, basketball, and hockey) and found that African American students were significantly less satisfied with their lives than Caucasian students regardless of injury history, occupational planning, and family socioeconomic status. Racial identity centrality, which was not assessed in the study, may have a role in these racial differences in adjustment.

Racial identity centrality has not been investigated as a potential contributor to maladaptive retirement transition for former student-athletes of color, but there is indirect

evidence that it could be a significant predictor of quality of adjustment. As noted earlier, racial centrality – while negatively correlated with athletic identity – may have some protective qualities against distress. Therefore, athletes of color with low racial centrality and high athletic identity may be at risk for distress when the athlete role is threatened by retirement. Athletes with low racial centrality would not have a strong alternate identity, racial identity, to help protect them from or alleviate retirement distress.

*Conclusions*

The identity research reviewed in this section indicates that athletic identity, masculinity, identity foreclosure, and racial identity may contribute to the quality of adjustment athletes experience after retirement. These four factors are highly interdependent. Athletic identity is positively correlated with identity foreclosure and masculinity. Athletic identity is also negative correlated with racial identity. Given that high athletic identity and foreclosure are related to problematic retirement as well as the interconnectedness of athletic identity, racial identity, and masculinity. It follows that athletes with high athletic identity, identity foreclosure, and high masculinity may be most prone to face difficulty transitioning out of sport. Low racial identity centrality may also be a risk factor for former student-athletes of color.

## *Career Decision-Making*

*Post-retirement Planning*

Svoboda and Vanek (1982) noted that there is a tendency among elite athletes to delay planning for post-retirement. Werthner and Orlick (1986) found a similar trend among Olympic athletes. The delay in post-retirement planning insinuates a delay in career exploration. Danish (1983) proposed that some athletes do not explore activities

outside of their sport and instead concentrate on athletic success while excluding other non-sport activities, a process termed selective optimization. Student-athletes are apt to remain confined to athletic activities. Participation in intercollegiate athletics is negatively related to participation in other campus activities (Stone & Strange, 1989).

One reason for the lack of exploration may be a desire to maintain the hope of a professional athletic career. If athletes consider career plans beyond sports, they must acknowledge that continuing in sports may not be possible (Pinkerton, Hinz, & Barrow 1989). Spady (1970) noted that athletes who recognize that playing professionally is not a likely option may remain reluctant to give up the athletic identity because of the benefits of being an athlete (such as praise from others). Alternatively, Parham (1993) suggested that career termination is not seriously considered among active intercollegiate athletes because it is overshadowed by the intensity that surrounds their current participation in sports. Athletes may view considering any activity outside of sport as a distraction from their focus on their sport goals.

Student-athletes often lack the time to complete exploratory activities. Most student-athletes have time constraints that prevent involvement in other extra-curricular activities (Ferrante & Etzel, 1991). Harris and Eitzen (1978) noted that coaches and sport organizations tend to socialize players into devoting the majority, if not all, of their energy into sports. Brown, Glastetter-Fender, and Sheldon (2000) noted that 56% of their sample of college student-athletes spent 30 or more hours a week participating in their sport while 42% reported 20 – 29 hours. Not surprising, athletic identity is positively correlated with the number of hours spent participating in sport (Cornelius, 1995).

Another contributor to athletes' lack of exploration is the vocational foreclosure many student-athletes appear to undergo. Kennedy and Dimick (1987) found that 66% of African American and 39% of Caucasian college football and basketball players in their study expected to play sports professionally. Other researchers have found lower estimates within the range of 17% to 19% (Brown, Glastetter-Fender, & Sheldon, 2000; Brown & Hartley, 1998; Curry, 1993). There also is a difference in expectations based on the competitive level of the athletes' institution. Blann (1985) found that 28% of Division I athletes planned to play professionally compared to 10% of Division III athletes.

Smallman and Sowa (1996) discovered that 34% of the college student-athletes in their sample expected to become professional athletes, although 24% of those said they had a poor chance of being successful. These findings imply that a portion of student-athletes who do not expect to succeed at the professional level still intend to make the attempt. Their persistence despite discouraging prospects could be due to a lack of exploration in other career domains; these athletes may believe that they do not know anything other than sport. It is also unclear how the opportunities in semi-professional teams (e.g., arena football leagues, the NBA's D-league) and established international leagues may change these expectations. There may be a significant number of intercollegiate athletes whose career goals are to play at the semi-professional level.

Wotten (1994) noted that the athletic milieu fosters player dependence (e.g., depending upon others to choose majors and schedule classes) so that many student-athletes do not develop adequate career problem-solving skills required for the transition out of sports. Similarly, Wittmer and colleagues (1981) indicated that upperclassmen

athletes can become distressed by vocational and career concerns, wondering who will assist them when they leave college athletics.

Pre-retirement preparation appears to be positively associated with post-retirement emotional and functional adjustment (Baillie & Danish, 1992). Perna and colleagues (1999) found that athletes who were able to state a post-collegiate occupational plan were significantly more satisfied with life after retirement than those unable to state such a goal. Harris and Eitzen (1978) noted that most athletes who do not explore alternative career options and are unable to move to the next level of play may experience disappointment, underemployment, anxiety, or mental health concerns.

Torregrosa, Boixadós, Valiente, and Cruz (2004) interviewed 18 active Spanish Olympians to investigate their views of retirement. The researchers learned that the athletes who gradually considered retirement as their careers progressed decreased their uncertainty about the future and their potential for adjustment problems. However, the majority of the athletes interviewed by the researchers indicated "relocation" retirement plans (e.g., coaching, managing, media commentary, graduate education in sports). These options may not be available for some intercollegiate athletes.

Post-retirement planning is associated with healthier retirement transitions, yet many athletes do not prepare for life after sports. The paucity of planning likely decreases their ability to make decisions about future career options and increases the risk of retirement distress.

*Career maturity*

Career maturity is the readiness of an individual to make informed, age appropriate career decisions and to cope with developmental tasks (Savickas, 1984).

Intercollegiate student-athletes are less likely to formulate mature career plans than their non-athlete peers (Blann, 1985; Martens & Cox, 2000; Sowa & Gressard, 1983). Muczko (1993) surveyed 73 senior football players who recently finished their last year of football eligibility and found that, as a whole, the athletes were relatively indecisive about their career choice. Nelson (1983) noted that college students who were not involved in collegiate athletics were more likely to develop realistic vocational identities than student-athletes. Student-athletes participating in revenue-producing sports tend to score significantly lower than non-athletes on measures of career maturity and in one study had a mean career maturity score equivalent to ninth-graders (Kennedy & Dimick, 1987). Smallman and Sowa (1996) compared the median scores of their sample of student-athletes with career maturity norms and discovered that the college athletes consistently fell in the bottom 25% percentile.

This lower level of career maturity remains steady across NCAA division. Brown and Hartley (1998) examined student-athletes in football and basketball and found no significant differences between Division I and Division II athletes. However, the influence of another intragroup factor, revenue-producing sports, is less clear. Smallman and Sowa (1996) found no significant difference in overall career maturity of the student-athletes based on race or type of sport (revenue or non-revenue). Yet Murphy and his research team (1996) surveyed intercollegiate athletes and found that athletes in revenue-producing sports had significantly lower career maturity scores than athletes in non-revenue producing sports.

Some researchers believe that a portion of the variance in career immaturity among athletes can be explained by athletic identity and have found that athletic identity

is inversely related to career maturity (Greenspan & Anderson, 1995; Murphy et al., 1996). Athletic identity is also inversely related to post-career planning (Lavallee, Gordon, & Grove, 1997). Grove, Lavellee, and Gordon (1997) found that high athletic identity was associated with high anxiety about career decision-making. Athletic identity was also negatively correlated with the amount of pre-retirement career planning; student with stronger athletic identities were less likely to plan for their vocational future.

As noted earlier, athletic identity and foreclosure are interrelated. Not surprisingly, identity foreclosure is also related to career maturity. Identity foreclosure is positively related to a dependent decision-making style that is considered maladaptive in the career development process (Blustein & Phillips, 1990). Those who strongly commit themselves to the athlete role may be less likely to plan for post-athletic career opportunities prior to their retirement from sport (Gordon, 1995; Pearson & Petitpas, 1990).

There are some contradictory findings in the research literature regarding athletic identity and career maturity. Despite the researchers' hypothesis to the contrary, the results of Brown and Hartley's (1998) study of male student-athletes failed to demonstrate a relationship between athletic identity and career maturity. Another study with similar findings examined the differences in "career development" between college athletes and non-athletes. Martens and Cox (2000) concluded that career development was not associated with the participants' level of athletic identity. However, secondary analyses showed that while athletic identity was not associated with vocational identity and occupational information gathering, it was related to vocational barriers. Participants in the study who endorsed higher levels of athletic identity were more likely to perceive

greater obstacles in choosing a career. Increased vocational barriers could affect how much student–athletes believe in their ability to choose a career; which in turn has implications for career-decision-making self-efficacy which is discussed later in this section.

Overall, research tends to indicate that student-athletes display less career maturity than their non-athlete peers. Career maturity is influenced by athletic identity and identity foreclosure, with athletes who maintain high athletic identification and identity foreclosure showing more career immaturity. However, it is unclear how athletes' career maturity influences the career decisions they make and their beliefs about their ability to choose a suitable career. These decisions could have a significant impact on the athletes' adaptation to retirement.

*Career Decision-Making Self-Efficacy*

Self-efficacy refers to the level of confidence individuals have in themselves that they can accomplish a specific task. Self-efficacy is a future-oriented cognitive appraisal of how well a person can perform a behavior (Bandura, 1977). Perceived self-efficacy influences whether or not a behavior will be initiated, affects people's choice of activities, influences how much effort people will expend, and how long they will persist in the face of barriers and aversive experiences (Bandura, 1977; Bandura & Adams, 1977). Behavioral consequences depend on an individual's level of perceived self-efficacy for a certain task. Stronger perceived self-efficacy is associated with more active coping efforts. People who have high self-efficacy about an activity, such as making a decision about a career, are more likely to enter situations where the activity may occur and will also attempt more difficult variations of the tasks (Bandura, 1981). Low self-

efficacy for an activity is associated with avoidance of that activity, poor performance in the domain, and a lack of persistence when faced with difficulties (Betz, 2000).

Career decision-making self-efficacy (CDMSE) is the degree of the belief that one can successfully complete the task of making career decisions (Betz, 2001). Taylor and Pompa (1990) found that CDMSE was the only significant predictor of vocational decisiveness among their undergraduate sample. CDMSE among college students is positively correlated with exploratory behaviors and career decision-making attitudes and skills (Blustein et al., 1989; Luzzo, 1993, 1995). Kornspan and Etzel (2001) surveyed over 250 Midwest junior college student-athletes and found that career maturity and CDMSE were positively correlated; higher career decision making self-efficacy was associated with increased career maturity. Student-athletes who had more confidence in their ability to make career decisions were more likely to have mature attitudes about making a career choice. However, it is unclear how these results would generalize to student-athletes at 4-year universities.

CDMSE may help explain differences in career maturity. Student-athletes who are less confident about making career decisions may be more likely to avoid exploratory behavior leading to a decrease in career maturity (Kornspan & Etzel, 2001). Additionally, college students reporting high CDMSE also have lower trait anxiety (Gloria & Hird, 1999). Therefore, student-athletes endorsing low CDMSE may be at risk for vocational foreclosure and high anxiety.

Student-athletes tend to have lower CDMSE when compared to the general college student population. Brown and colleagues (2000) surveyed Division I student-athletes and regardless of gender, the student-athletes' mean score on the CDMSE was

significantly lower than the mean score of the sample of undergraduates on which the measure was standardized. Notably, 42% of their sample reported being uncertain about their career plans. There was no information regarding potential differences among athletes in revenue-producing sports.

*Conclusions*

Many intercollegiate athletes do not to explore their career options outside of athletics and do not adequately prepare for life after sports. These athletes tend to score low on measures of career maturity and career decision-making self-efficacy (CDSME). Poor pre-retirement planning increases the risk of distress after retirement. Consistent with general self-efficacy theory, student-athletes with low CDMSE are unlikely to start the career decision-making process and or complete pre-retirement career planning if faced with barriers. Potentially, athletes with low CDMSE could fail to decide and plan on a career after retirement which would increase their likelihood of distress. Additional research is needed to clarify the potential relationship between CDMSE and difficulty transitioning out of sports.

## *Coping Strategies*

Lazarus (1974) theorized that "coping" occurs when individuals are faced with a threatening stressor and must make efforts to solve their problems with their adaptive resources. Folkman and Lazarus (1980, 1985) described two main ways in which people manage stress, problem-focused and emotion-focused coping. Problem-focused coping occurs when individuals utilize their problem-solving skills, usually when they feel that something may be done about the stressor. Emotion-focused coping involves reducing or managing the emotional distress brought on by the stressor and is generally used when an

individual thinks that the stressor cannot be changed and must be endured. The authors noted that individuals tend to use a mixture of problem- and emotion-focused coping skills during stressful periods.

Building on the work of Folkman and Lazarus, Carver and colleagues (1989) identified 15 common strategies for coping: acceptance, active coping, alcohol/drug use, behavioral disengagement, denial, focusing on and venting of emotions, humor, mental disengagement, planning, positive reinterpretation and growth, restraint coping, seeking social support for instrumental reasons, suppression of competing activities, and turning to religion. The authors' conceptualization of coping was later operationalized into a widely-used scale of coping strategies, the COPE (Carver et al., 1989).

Coping mechanisms are critical in determining the outcome of transitional periods. The availability and use of coping resources will impact the overall quality of adaptation to retirement (Gordon, 1995). Brammer (1991) noted that individuals' coping skills will determine the amount of distress they experience and their ability to work through a transition.

Specific coping mechanisms are associated with a positive transition out of sport. Sinclair and Orlick (1994) found that having interests outside of sport, remaining busy, and maintaining physical activity levels were related to a healthy adjustment from sport. Grove, Lavellee, and Gordon (1997) assessed the coping strategies used by retired male and female Australian elite athletes who had been retired for an average of 3 years at the time of the study. Most participants used acceptance, positive reinterpretation, planning and active coping as their primary coping strategies. Participants also reported seeking instrumental and emotional social support. The least used coping strategies were turning

to religion, alcohol and drug use, and denial. A strong and exclusive athletic identity at the time of retirement was positively related to avoidance-oriented coping strategies such as venting of emotions, mental disengagement, behavioral disengagement, and reliance on denial. Notably, these coping strategies are similar to the strategies labeled maladaptive by Carver (1997): self-distraction, behavioral disengagement, denial, substance use, self-blame, and venting. Crook and Robertson (1991) also noticed a trend in coping among athletes and determined that athletes with a strong athletic identity may fail to develop appropriate (healthy) coping resources to handle major transitions. Therefore, it is plausible that student-athletes may be more likely to use maladaptive coping strategies and experience a greater level of retirement distress.

While research indicates that certain coping skills are related to adaptive transitions out of sport, more information is needed to clarify which coping skills are used by student-athletes who do not adjust well to retirement. Additionally, athletes with a high athletic identification may be more likely to use more maladaptive coping mechanisms because they have not developed the more adaptive strategies. Maladaptive coping mechanisms are a potential predictor of distress.

### *Participation Motivation*

Athletes are motivated to participate in sports for multiple reasons and retirement from sports may result in the loss of many of the incentives that motivate athletic participation. Before discussing participation motivators and athletic retirement, a brief review of motivation theory is provided.

Motivation is the drive toward a behavior which may involve personal and social factors; these factors provide a valuable incentive or reward to complete the behavior

(Clews & Gross, 1995). One of the more recognized conceptualizations of motivated behavior is self-determination theory. The theory suggests that the basis of motivation comes from an inherent tendency toward personal growth and three innate psychological needs – competence, relatedness, and autonomy (Deci & Ryan, 1985; Ryan & Deci, 2000). The theory posits that motivation falls on a continuum of self-determination with the highest level of motivation being intrinsic in nature. Intrinsic motivators are based in an evolved propensity to seek challenges, explore, and learn; they will lead an individual to participate in an activity due to the enjoyment and satisfaction from participation (Ryan & Deci, 2000). In the context of sports, intrinsic motives may include a sense of personal achievement and skill development. Lower on the self-determination continuum are motivators that satisfy an external demand or provide an external award. Extrinsic motivators in intercollegiate athletics may include the social status of being an athlete, rewards (e.g., scholarships), and winning championships. At the low end of the continuum is the complete absence of motivation and self-determination, or amotivation, in which individuals act without intent and just go through the motions (Ryan & Deci, 2000).

Given the theorized need for competence, relatedness, and autonomy, how do athletes go about meeting these needs in the athletic domain, both intrinsically and extrinsically? Research findings in youth sports begin to answer this question. An early study of youth athletes assessing the reasons youth participate in sport found that the strongest motivators included affiliation, excellence, and arousal. A study conducted by Gill, Gross and Huddleston (1983) also examined the specific motivators for participating in sports among young athletes. The authors developed the Participation Motivation

Questionnaire (PMQ) and surveyed over 1,000 youth involved in a summer sports skills development program. Respondents' answers were examined at a descriptive level and then factor analyzed to identify categories of participation motivation. At the item level, boys in the sample most frequently endorsed skill improvement as the most important reason for participation followed by fun, desire to go to a higher level in their sport, the opportunity to compete, and the challenge. Males also highly endorsed achievement/status reasons for participation more so than female youth athletes. Eight main motivation factors were identified from all the reasons for participation: achievement/status, team, fitness, energy release, others (miscellaneous reasons), skill, friends, and fun.

Gould, Feltz, and Weiss (1985) extended on the previous research by examining participation motivation among youth athletes in a more competitive context. The research sample included over 300 young athletes (age 8 to 19) actively involved in competitive swimming. Item endorsement analysis indicated that "I like to have fun" ranked as the most important reason for participating in swimming. A factor analysis of the items led to seven major factors underlying participation motivation in youth sports: achievement/status, team atmosphere, excitement/challenge, fitness, energy release, skill development and friendship. The findings were generally consistent with results reported by Gill and colleagues. In addition, both studies indicated that important participation motivators come from internal initiative (e.g., excitement) and well as external factors (e.g., status). However, the motivators important in youth sports may differ than the primary motivators among college athletes.

Later research provided more information about sources of sport participation motivation in the intercollegiate population. Dwyer (1992) used the PMQ with a sample of undergraduate students and found general support for the factor structure identified by Gould and colleagues (1985) although energy release was not identified as a separate factor. Fitness, excitement/challenge, and skill development proved to be the most important motives for participation in this population. The sample consisted of undergraduate students at a Canadian university who were not in high profile intercollegiate sports thereby limiting generalizability. However, a study with intercollegiate athletes found similar results. Flood and Hellstedt (1991) assessed motivation for sport participation among U.S. college athletes using an adapted version of the PMQ and found that competition was ranked as the most important motivator. The researchers also added an Affiliation (with the university community) factor that proved to be more important to female athletes than male athletes. Notably, male athletes who competed in team sports reported that winning was their primary motivation for participating in intercollegiate athletics.

Despite what is known about the incentives that motivate college athletes to play sports, there is little information about what occurs when the athletes are faced with the loss of intercollegiate sports and the source of these incentives to participate. Ryan and Deci (2000) theorized that the basic needs of competence, autonomy, and relatedness must be satisfied throughout the life span in order for people to experience and maintain psychological well-being. Therefore, the loss of athletics could mean the loss of the intrinsic and extrinsic rewards that fulfill the need for competence, autonomy, and relatedness. Svoboda and Vanek (1982) noted that in order to reach the final stage of

transitioning out of sport, acceptance of the end of a sports career, athletes must be able to redirect their focus and energy into other domains and activities which become as fulfilling as sport. Danish and colleagues (1987) also discussed the concept of motivation from a developmental stance and noted that retiring athletes must find activities to replace sport; activities that are as equally challenging and that lead to feelings of competence and satisfaction. A retired football player who is derived his fun, release of energy and sense of achievement from intercollegiate sports and is unable to find a new setting from which to obtain these rewards may become distressed. It is conceivable that former athletes who have not found a new career or life situation that provides the incentives (and source of competency, autonomy, and relatedness needs) once derived from sport are more likely to have a difficult retirement process. Additional research is needed to clarify how the loss of participation motivation factors may contribute to retirement distress.

### *Social Support*

Social support is an exchange of resources between individuals in which one participant enhances the well-being of the other (Shumaker & Brownell, 1984). Procidano and Heller (1983) noted that the social support construct is often vague in the social support literature and that social support research may evaluate the dimensions of a social support network or the perceived impact of the network on an individual. For example, social support may be measured by the number of people an individual can identify as supportive or by the amount of support an individual reports receiving from any number of people.

There has been some controversy regarding whether or not social support works as a buffer, moderating the path from a stressor to feelings of distress. In a comprehensive literature review on the functions of social support, Cohen and Wills (1985) found that a buffering effect is present in studies that measure the participants' perception of the accessibility of social support. The majority of research documenting a relationship between social support and good health do so by assessing the respondents' perceptions of being supported (Turner, 1983). Therefore, there is general agreement in the literature that perceived social support can buffer distress. Perceived social support appears to have a distinct buffering effect on psychological distress including depression and anxiety (Dean, Lin, & Ensel, 1981; Swift & Wright, 2000; Turner, 1983). Additionally, greater perceived social support is associated with greater psychological well-being, among college students (Jay & D'Augelli, 1991).

Social support also appears to facilitate adjustment to retirement. Kessler, Turner, and House (1988) examined the effects of unemployment on a sample of blue-collar workers. They assessed a sizable sample of currently unemployed, previously unemployed, and stably employed participants and found that the workers who were involuntarily unemployed displayed more symptoms of depression, anxiety, somatization, and self-reported physical illness. Turner et al. (1991) analyzed the same data further and found that perceived social support modified the relationship between unemployment and distress. Therefore, social support appears to be a moderating factor which provides evidence for the buffering hypothesis in retirement.

Bolton and Oatley (1987) found that unemployed individuals, who maintained frequent contact with family and friends during the month prior to being laid-off, did not

experience major distress after job loss. It can be argued that social support buffered depression related to job loss. The authors concluded that the workplace provided a reliable arena for social interactions and without an alternative source of social contact, former employees were more likely to experience symptoms of depression 6 to 8 months later. Kasl, Gore, and Cobb (1975) also noted that perceived social support served as a modifier in their study of unemployment and depression. Significant levels of depression were only seen among participants who did not experience high levels of social support. The benefits of social support have been identified in athletic retirement research as well. Athletes who are able to talk with others about their career termination have a decreased chance for career termination distress (Lavallee, Gordon & Grove, 1997).

A potential risk factor for poor transitions out of sports is a deficiency of available social supports. Unfortunately, a number of athletes do not have others to provide the critical support needed to decrease distress. Rosenfeld and colleagues (1989) questioned college student-athletes at a Division I university about their social support network. The participants reported that teammates did not provide emotional support. Additionally, social support did not seem to buffer stress for athletes in the study. However, the authors primarily evaluated the effects of the social network and did not analyze the amount of perceived social support. The results may differ if the amount of perceived support is taken into account.

Although most athletes identify their teammates as a primary source of general support, they report a general lack of social support in athletics (Pearson & Petitas, 1990). Approximately 65% of male college student-athletes surveyed by Humphrey, Yow, and Bowden (2000) endorsed talking things over with others as a strategy they used to

alleviate stress. However, the authors noted that coaches and fellow athletes could not adequately provide this support. Research suggests that teammates are not strong sources of emotional support (Rosenfeld, Richman & Hardy, 1989). Storch and his co-investigators (2005) found that approximately 15% of male student-athletes reported significantly deficient social support. Only 1 in 7 student-athletes in Baille's (1993) study were able to identify sources of emotional support.

Athletic identity could impact the amount of available social support possessed by as athlete. Athletes with a foreclosed athletic identity tend to develop social supports that promote and maintain their confined identity (Heyman, 1986). These supports will no longer be effective or adaptive while transitioning out of elite sport. Athletes with a strong athletic identity may lack the essential social support network needed for encouragement after retirement (Baillie & Danish, 1992; Messner, 1992).

In sum, the retirement literature suggests that low levels of perceived social support may contribute to depression and other forms of psychological distress after job loss. Few studies have examined how perceived social support during the athletic retirement process might influence former student-athletes' well-being when leaving sports. High levels of perceived social support will likely decrease the probability of psychological distress after athletic career termination. Athletes with high athletic identification may be at risk for inadequate support which in turn may increase the risk of retirement distress. Further research is needed to understand the potential protective effects of social support against retirement distress.

*Athletes and Psychological Distress*

The greater part of the literature reviewed above did not use clinical measures to evaluate the distress experienced during the transition from elite sport. As in the general population, athletes may experience clinically significant symptoms of psychological distress after a major stressor (Brewer, 1993). The following section aims to substantiate the rate of psychopathology among athletes in order to support the use of clinical measure when measuring retirement distress.

The extent to which athletes experience clinically significant concerns are difficult to assess given that athletes underutilize mental health services (Bergandi & Wittig, 1984; Pinkerton, Hinz, & Barrow, 1989). However, in a roundtable discussion on psychopathology, Ogilvie and associates (1981) concluded that the most common psychological concerns among athletes are depression followed by substance (drug or alcohol) use. Anxiety reactions are also of significant concern.

Research suggests that athletes are more susceptible to psychological distress. In an early study of mental health among college athletes, Carmen and his research team (1968) found that of all students presenting for services at a college counseling center, athletes tended to have more psychological concerns than non-athletes. However, the study was limited by sample size (26 athletes and 26 controls). Wittmer and his collaborators (1981) also found that athletes endorsed more adjustment problems than non-athletes, including academic, social, and vocation difficulties. Academic and athletic pressures may lead to depression, anxiety or burnout (Heyman, 1986). In a more recent study examining the prevalence of depression among college athletes, 21% of college athletes at a Division I university reported significant symptoms of depression with

freshmen and female athletes showing increased odds of experiencing depression (Yang et al., 2007).

Storch and colleagues (2005) assessed symptoms of social anxiety, depression and alcohol use disorders among intercollegiate athletes and their non-athletic peers. The researchers discovered that female athletes had higher depression and anxiety scores when compared to male athletes and male and female non-athletes. Although male athletes tended to report the least amount psychopathology, there was still a number of athletes reporting clinically significant levels of alcohol pathology (5.6%), depression (3.7%), and social anxiety (22.2%). Notably, the sample of male student-athletes assessed in this study included representatives from one revenue-producing sport (football). However, separate analyses were not completed for this sub-sample. Therefore it is unclear how self-reported psychopathology may vary amongst student-athletes based on sport.

Alcohol is the most regularly used drug among college students (Nicholi, 1983). Substance use shows systematic age-related trends. There is a significant increase in consumption and abuse or dependence diagnoses during young adulthood, peaking between the ages of 18 and 25 (Chen & Kandel, 1995). Trajectories of heavy drinking are most frequently found among youths who are male, low in self-efficacy, and who drink in order to get drunk (Schulenberg et al., 1996).

Athletes appear to be at risk for more alcohol-related problems than their non-athlete peers. Rates of alcohol abuse tend to increase as involvement with athletics increases (Leichliter et al., 1998). Athletes consume more alcohol, have heavier episodic drinking, and consume considerably larger amounts of alcohol when they drink when

compared to the general student population (Martens, Dams-O'Connor, & Beck, 2006; Nattive & Puffer, 1991; Weschler et al., 1997). In a survey of Big Ten college athletes, 20% of student athletes reported behaviors consistent with alcohol misuse or abuse (Murphy et al., 1985 as cited in Marcello et al., 1989). Hildebrand, Johnson and Bogle (2001) examined the drinking behaviors among college students with varying degrees of athletic participation. They found that former high school athletes and current college athletes consumed more alcohol during a semester, binge drank more often, began drinking alcohol at an earlier age and were involved in more alcohol-related high risk situations than college students who had never been athletes. Additionally, the researchers discovered that current college athletes engaged in more alcohol-related high risk behaviors, such as driving a car or engaging in sexual intercourse while under the influence, than former high school athletes. Another study had similar findings with college athletes reporting significantly more alcohol-related harms (e.g., doing something they related regretted, arguments with friends, unplanned sexual activity, damaged property, and police involvement) than nonathletes (Nelson & Wechsler, 2001).

Further, team-sport participation appears to influence the level of alcohol consumption among athletes. College athletes who participate in team sports consume more alcohol, consumer a greater quantity of alcohol, and engaged in binge drinking more frequently than college athletes involved in individual sports and those classified as exercisers (Rockafellow & Saules, 2006).

There are some studies that find negligible to no differences in the drinking pattern of student-athletes and non-athletes. Overman and Terry (1991) assessed the drinking behaviors of college students and the results showed minimal differences in the

drinking behavior of athletes and non-athletes; male non-athletes were inclined to drink more during the week than male athletes who tended to drink mainly on special occasions. Anderson and colleagues (1991) surveyed over 3,000 college student-athletes and noted that athletes drank alcohol at a slightly rate lower than that of their college student peers. Storch and his collaborators (2005) also found that male and female student-athletes had a lowered frequency of alcohol problems than their non-athletic peers. Given the discrepancies found in the alcohol use studies, there is a need for additional research in order to clarify the individual factors that may increase the risk for alcohol abuse.

Multiple factors may contribute to maladaptive alcohol use among athletes. Tricker, Cook, and McGuire (1989) suggest that substance abuse may provide an easy way to resolve the boredom and nostalgia. Alcohol use may also provide a temporary solution to the some student-athletes' problems (Chappell, 1987). High academic pressure, athletic pressures and psychological numbing may lead some college students to consume alcohol as a way to cope with stress and to relax (Ogilvie et al., 1981; Roberts-Wilbur, Wilbur, & Morris, 1987). Roberts-Wilbur and colleagues (1987) noted that collegiate athletes often suffer from low self-esteem and may turn to alcohol to cope. Coping research notes that coping skills utilized in the past during past stressors are frequently activated during future transitions (Brammer, 1992; Parham, 1993). Alcohol, if used as a coping mechanism prior to retirement, may be used during the transition process and potentially turn into a problem later when faced with the stress of athletic retirement.

Evans and colleagues (1992) investigated psychological factors related to substance use among Division I athletes and non-athletes. Male and female athletes were questioned about their reasons for consuming alcohol. The athletes endorsed recreational/social use (78%), drinking to feel good (46%), and drinking to deal with life stressors (28%) as the main reasons for consuming alcohol. Humphrey, Yow, and Bowden (2000) noted that over half the male athletes in their study used alcohol as a means for coping with stress. McGuire (1990) suggests that the sport environment can threaten an athlete's self-esteem and leave athletes susceptible to alcohol use. Alcohol may also reduce self-awareness and self-doubts that might arise in the sporting environment (Hull & Bond, 1986).

Taken as a whole, athletes appear to be more susceptible to clinical symptoms of psychological distress (e.g., depression, anxiety, and alcohol use) than their non-athlete peers. Therefore, using clinical measures are a reasonable method to assess psychological distress after retirement from sport.

### *Overall Summary*

To review, current retirement literature provides contradictory evidence regarding the frequency of athletic retirement difficulties among former athletes. Still, there is evidence that a number of former athletes experience a significant level of distress when transitioning out of sport. Retirement models indicate that individual variables (i.e., identity) and the retiree's available resources (i.e., pre-retirement planning, coping strategies, and social support) influence the quality of retirement. Specifically, Taylor and Ogilvie's (1994) theoretical model of athletic retirement presents trajectories towards healthy and maladaptive transitions based on multiple factors. The authors theorized that

the cause of retirement (e.g., deselection) interacts with individual factors related to adaptation as well as the athlete's available resources determine the quality of retirement from sport. They noted that retirement can be a maladaptive process inclusive of psychopathology, substance abuse, occupational problems, and family/social concerns. While the model identifies multiple contributors to adaptation, it is not clear how these components interact with one another or what configuration of components might serve as risk factors for retirement crises. Additional research is needed to understand how the variables identified in the adaptation model relate to maladaptive retirement experiences.

Identity, the manner in which people define themselves, is one potential individual factor that could predict which deselected student-athletes adjust poorly to retirement (Brewer, Van Raalte, & Linder, 1993). Higher athletic identification is associated with difficult retirements (Lavellee, Gordon, & Grove, 1997; Webb et al., 1998). However, researchers note that a strong and exclusive athletic identity is required to see the detrimental affects on adaptation to retirement (Blinde & Greendorfer, 1985). Few studies include measures of one aspect of general identity, identity foreclosure, which could be related to the concept of low self-complexity and address the issue of identity exclusivity. Therefore, research on athletic identity and retirement should also assess the level of identity foreclosure.

Masculinity, conceptualized in this study as an aspect of athletic identity, is another factor that could potentially influence transition out of sport. Masculinity is highly associated with athletic participation and athletic identity (Caron, Carter, & Brightman, 1985; Lantz & Schroeder, 1999). If an athlete is no longer able to participate

at an elite level, the loss of sports may pose a threat to masculinity, thereby increasing anxiety and distress.

Another aspect of identity among student-athletes that has not been researched extensively is racial identity. A strong racial identity has proven to be protective in domains outside of sports (Cross, 1991; Helms, 1990; Sellers et al., 1998). However, high athletic identity appears to have a diminishing effect on the strength of an athlete's racial identity (Jackson et al., 2002). It is unclear how lowered racial identity may contribute to retirement crises among former student-athletes of color.

In sum, athletic identity, identity foreclosure, racial identity and masculinity are highly correlated and appear to contribute to retirement adjustment. Based on the research to date, athletes with high athletic identity, identity foreclosure, and high masculinity appear to be more at risk for difficulties when transitioning out of sport. Low racial identity centrality may also be a risk factor for retirement distress among former student-athletes of color.

Intercollegiate athletes, when compared to their non-athlete peers, tend to be less mature in their ability to make career decisions, a profile consistent with low career decision-making self-efficacy (Kennedy & Dimick, 1988; Martens & Cox, 2000; Sowa & Gressard, 1983). Following the logic of self-efficacy theory, individuals with low CDMSE are less likely to begin and complete the career decision process. Therefore, student-athletes with low CDMSE may be less likely to make career plans which could lead to significant distress upon retirement from college sports. Additional research is needed to clarify how CDMSE may affect the adaptation process.

The stressors facing deselected athletes are addressed with some form of coping mechanisms, and the strategies may be adaptive or maladaptive. Limited research in the area of coping with athletic retirement suggests that most athletes will use coping strategies that are associated with healthy transitions from sport (Sinclair & Orlick, 1994). Studies have failed to examine the specific coping skills used by former college student-athletes who do not transition well. A consistent pattern of coping skills used by those who do not adjust well has not been identified. There may be particular coping skills that are predictive of a poor transition from college sports. Additionally, high athletic identification could be associated with maladaptive coping responses. Maladaptive coping skills, such as avoidant strategies, are a likely potential predictor of retirement distress.

Athletes are motivated to participate in sports for various reasons; reasons which provide athletes with some form of internal or external reward. Often, the rewards are non-tangible reinforcers such as excitement or achievement. The loss of intercollegiate athletics may also result in the loss of many of the incentives that motivate athletes to participate in sports. The rewards of participation may fulfill the needs of competence, autonomy, and relatedness as described in self-determination theory (Deci & Ryan, 1985). Little is known about what occurs when student-athletes are faced with the loss of intercollegiate sports (the source of these incentives that fulfill their psychological needs) and if the loss influences chance of retirement distress.

Social support appears to decrease the risk of depression and anxiety (Swift & Wright, 2000). Unfortunately there is evidence of a general deficiency in social support among collegiate athletes (Storch et al., 2005). Further, studies of athletes in transition

show that strong athletic identity is related to inadequate social support networks after retirement (Baillie & Danish, 1992; Brewer et al., 1993; Messner, 1992). It is unclear how the perceived social support student-athletes receive during their retirement process may help or hinder their adaptation to leaving sports, but it appears that perceived social support may decrease the likelihood of psychological distress upon retirement.

Athletes appear to be more susceptible to psychological distress and alcohol use when compared to non-athletes (Martens, Dams-O'Connor, & Beck, 2006; Nattive & Puffer, 1991; Weschler et al., 1997; Wittmer et al., 1981; Yang et al., 2007). Despite the probability of serious psychological concerns among athletes, few researchers have used clinical scales of psychological distress which seem appropriate for use in the athletic population. Using clinical measures to assess athletic retirement distress could significantly add to the current literature and knowledge of sports career termination.

Employing the Taylor and Ogilvie model of adaptation to athletic retirement, the current study examined the hypothesized relationships between identity factors (athletic identity, identity foreclosure, masculinity, and racial identity), coping strategies, CDMSE, loss of participation motivator factors, and social support as well as their influences on maladaptive retirement experiences among former college student-athletes.

# CHAPTER III

# METHODS

*Participants*

Participants were 140 male former student-athletes who participated in a high-profile revenue sport (i.e., football, basketball, baseball, or hockey). Graduation from a university was not a requirement for participation although 87% of participants reported completing their college degree. Participants ranged in age from 21 to 29 with a mean age of 24 years old. Participants were identified as deselected athletes if they indicated that their college athletic career did not end due to injury or free choice although allowances were made if they reported that they expected to play professionally or attempted to play professionally (i.e., participated in a professional draft). Participants were required to have played their last intercollegiate game within the last 5 years due to research suggesting that the majority of retirement distress reported is within 2 years after leaving the sport (Baillie, 1993). Although a 2 year cut-off was preferable, a 5 year cut-off was used in order to increase the size of the participant pool due to a low response rate. The average length of time between participants' last college game and completion of the study questionnaire was 27 months.

The majority of participants played football (92.1%) and attended a NCAA Division I university (87.7%). The participants attended 105 different schools representing 24 Division I, 8 Division II, 5 Division III, and 2 NAIA conferences. Regarding expectations of furthering their athletic careers, 75.7% of the participants indicated that they attempted to play professionally while 41.3% reported that they

attempted to play at the semiprofessional level (e.g., minor, developmental, international, and arena leagues). Of the 107 former college football players in the sample who provided information about their NFL draft participation, 91.6% indicated that they were involved in the NFL draft.

In terms of race and ethnicity, 53.6% of the sample self-identified as Caucasian and 41.4% identified themselves as African American. There was an overrepresentation of African Americans in the sample when compared to the current intercollegiate football statistics. The NCAA (2007) reported that during the 2005-2006 school year, 33% of student-athletes playing football were African American while 62% were Caucasian. Familial status was assessed and 19.3% of the participants were married and 14.4% were fathers. Participants were asked about their employment status and 32 participants (22.8%) indicated that they were in athletic-related occupations: 4 worked in fitness, 13 coached a sport at the high school or college level, and 15 played semiprofessional sports. Additionally, 12 participants indicated that they were completing an undergraduate or professional degree. More detailed demographic information for the study sample is presented in Table 1.

Table 1

Demographic Data: Means, Standard Deviations, and Frequencies of Participant Characteristics

| Variable | M (SD) | Frequency |
|---|---|---|
| Age (years) | 24.95 (1.27) | |
| Last game (months) | 27.31 (12.15) | |
| College GPA | 2.87 (0.45) | |
| Sport | | |
| Football | | 129 (92.1%) |
| Basketball | | 7 (5.0%) |
| Baseball | | 3 (2.1%) |
| Hockey | | 1 (0.7%) |
| NCAA Division | | |
| Division I | | 122 (87.1%) |
| Division II | | 10 (7.1%) |
| Division III | | 5 (3.6%) |
| NAIA | | 3 (2.1%) |
| Race/Ethnicity | | |
| Caucasian | | 75 (53.6%) |
| African American | | 58 (41.4%) |
| Hispanic/Latino | | 4 (2.9%) |
| Native Hawaiian | | 1 (0.7%) |
| Biracial | | 2 (1.4%) |
| Marital Status | | |
| Single | | 100 (74.4%) |
| Living with significant other | | 13 (9.3%) |
| Married | | 27 (19.3%) |

Table 1 (Cont.)

| Variable | M (SD) | Frequency |
|---|---|---|
| Yearly Income | | |
| Under $15,000 | | 9 (6.4%) |
| $15,000 - $19,999 | | 5 (3.6%) |
| $20,000 - $29,999 | | 15 (10.7%) |
| $30,000 - $39,999 | | 9 (6.4) |
| $40,000 - $49,999 | | 19 (13.6%) |
| $50,000 - $59,999 | | 16 (11.4%) |
| $60,000 - $69,999 | | 13 (9.3%) |
| $70,000 - $79,999 | | 10 (7.1%) |
| $80,000 - $89,999 | | 10 (7.1%) |
| $90,000 - $99,999 | | 3 (2.1%) |
| $100,000 - $124,999 | | 9 (6.4%) |
| $125,000 - $149,999 | | 4 (2.9%) |
| $150,000 - $174,999 | | 2 (1.4%) |
| $175,000 - $199,999 | | 3 (2.1%) |
| Over $200,000 | | 9 (6.4%) |
| Missing | | 4 (2.9%) |

*Measures*

*Demographic Questionnaire.* A 22-item scale was created for this study. The questionnaire assessed basic demographic information (e.g., age, race/ethnicity, SES), athlete-specific information (e.g., sport played, name of coach, starting status, playing time, awards, date of last game, and attempts to play at a professional level), as well as expectations of playing professional sports.

*Athletic Identity Measurement Scale (AIMS; Brewer, Van Raalte & Linder, 1993).* The AIMS is a 10-item scale evaluating the strength of the athletic role in an individual's self conceptualization. Due to investigator error, the 7-point Likert scale suggested by the authors was not utilized. Instead, participants responded to items like "Other people saw me mainly as an athlete" and "I needed to participate in sports to feel good about myself" using a 5-point Likert scale (1 = "strongly disagree" and 5 = "strongly agree"). Scores were calculated by summing the values of each item response. Possible scores range from 10 to 50, with higher scores indicative of stronger athletic identity. Brewer and colleagues (1993) noted that the scale is internally consistent and has a reliability estimate of .89 and showed convergent and discriminant validity. The Cronbach's $\alpha$ for the scale with this sample was .81.

*Extended Objective Measure of Ego-Identity Status-2, foreclosure subscale (EOMEIS-2; Bennion & Adams, 1986).* The two foreclosure subscales of the EOMEIS-2 contain 16 items that evaluate individuals' level of commitment to identity without exploration. Participants responded to statements regarding occupation, religion and activities on a scale from 1 (strongly disagree) to 6 (strongly agree). Scores can range from 16 to 96. Higher scores signify greater identity foreclosure. Bennion and Adams

(1986) established validity and reliability for the ideological and interpersonal foreclosure subscales. In the present study, the ideological and interpersonal foreclosure items were combined to create an integrated foreclosure score. The internal consistency of the scale within this sample was .89 and was higher than the Cronbach's α reported in other psychometric research (Bennion & Adams, 1986; Schwartz, 2002).

*Bem Sex-Role Inventory – short form (BSRI; Bem, 1981).* The BSRI was developed by Bem (1981) to measure masculinity and femininity in terms of culturally desirable traits for males and females. The short form of the BSRI contains 30 sex-typed attributes for which subjects rate themselves on a scale from 1 (never or almost never true) to 7 (always or almost always true). The scale includes 10 feminine descriptors (i.e., gentle, compassionate), 10 masculine descriptors (i.e., aggressive, forceful), and 10 neutral/buffer terms (i.e., reliable, conscientious). Only the masculine items were used due to the specific hypothesis regarding masculinity and the efforts to shorten the length of the total protocol. Possible scores range from 10 to 70, with higher scores denoting greater masculinity. The BSRI is a widely recognized measure of femininity and masculinity and it has been used extensively since its development despite some psychometric concerns (Hoffman & Borders, 2001). The internal consistency of the masculinity subscale within this sample was .89 and is better than results reported in previous psychometric research (Campbell, Gillaspy, & Thompson, 1997).

*Multidimensional Inventory of Black Identity – centrality subscale (MIBI; Sellers et al., 1997).* The centrality subscale of the MIBI is an 8-item measure that evaluates the importance of race to one's definition of self. Using a 7-point Likert scale (1 = "strongly disagree" and 7 = "strongly agree"), participants responded to items like "Being Black

was an important reflection of who I was." Items were averaged across all items within the scale, with potential scores ranging from 1 to 7. Higher scores represent stronger racial centrality. The scale was designed for use with an African American population but in this study "Black" was replaced with a blank space in order for participants to use their self-identified race and/or ethnicity. Participants were primed to think of their own race/ethnicity before answering the questions in order to facilitate the fill-in-the-blank method of the adapted measure. The Cronbach's $\alpha$ for the 8-item scale with this sample was .78 which is consistent with the findings from previous psychometric research using the entire scale with larger samples (Cokley & Helm, 2001; Sellers et al., 1997).

*Career Decision-Making Self-Efficacy – short form (CDMSE; Betz, 2003).* The abbreviated form of the CDMSE consists of 25 items measuring respondents' confidence in their ability to complete career decision-making tasks. Scale items cover the areas of self-appraisal, ability to gather occupational information, goals selection, planning for the future, and problem solving. Participants respond to the items such as "prepare a good resume" and "make a plan of your goals for the next five years" using a 5-point Likert scale, from 1 (no confidence at all) to 5 (complete confidence). Items are summed to determine an overall score of career decision-making self-efficacy with higher scores corresponding to higher self-efficacy. The total score has a reliability estimate of .94 and the scale shows convergent validity based on other measures of career behavior (Betz et al., 2003; Betz & Voyten, 1997). Previous factor analyses of the 25-item scale provided varied results and do not support the existence of the five theorized subscales (Betz & Taylor, 2001). Due to the lack of psychometric research supporting the use of the CDSME as described by Betz and colleagues (2003) as well as concerns about the length

of the overall survey, a shorten version of the scale was created for use in this study. Eleven items were drawn from the overall scale and chosen based on content. Each item appeared to assess tasks required at the end of college. A factor analysis was conducted with the 11 items and the factor loadings were relatively consistent with previous research (Chaney, Hammond, Betz, & Multon, 2007). Two questions (items 7 and 9) had significant cross-loadings and were dropped from the final version of the scale. The Cronbach's $\alpha$ for the 9-item scale used in this study was .89. Possible scores range from 9 to 45.

*Brief COPE (Carver, Scheier, & Weintraub, 1989).* Derived from the original 60-item COPE, the Brief COPE is a 28-item inventory with 14 subscale scores that identify various coping responses. Participants responded to statements such as "I made jokes about it" and "I got comfort and understanding from someone" on a 4-point Likert scale ranging from 1 (I have not done this at all) to 4 (I have been doing this a lot). Carver, Scheier, and Weintraub (1989) indicated that five strategies in the original COPE were inversely correlated to theoretically more functional strategies – denial, behavioral disengagement, mental disengagement (renamed self-distraction in the Brief COPE), venting, and alcohol use (renamed substance use in the Brief COPE). Self-blame, found to be a predictor of poor adjustment, was added as an additional strategy in the Brief COPE (Carver, 1997). Carver reported that he does not combine the strategies into aggregate scales, but noted that researchers can create higher order factors using the various strategies. He suggested that researchers use their own data to create the higher order factors. Therefore, a factor analysis of all 28 Brief COPE items was conducted in order to identify a higher order maladaptive factor. Based on the results of the factor

analysis, the two venting questions (items 9 and 21) were removed from the maladaptive scale due to failure to load on the hypothesized maladaptive factor and high cross-loadings. Additionally, the two substance use questions (items 4 and 11) were removed given that substance use is one of the dependent variables in this study. The internal consistency of the 8-item Maladaptive Coping subscale within this sample was .82. Possible scores range from 8 to 32. Higher scores on the scale signify the use of more maladaptive coping strategies.

*Participation Motivation.* A 14-item scale was created for this study to assess the importance and stability of the seven participation motivation factors identified by Gould, Feltz and Weiss (1981, 1985) based on their work with the Participation Motivation Questionnaire (Gill, Gross, & Huddleston, 1981): achievement/status, team atmosphere, excitement/challenge, fitness, energy release, skill development, and friendship. Participants were asked to respond to the items twice. First participants were asked to retrospectively rate how important each of the seven factors was as a motivator for participating in college athletics on a scale from 1 (not important at all) to 5 (very important). Answers were summed to create a Participation Motivation – Then score. Next participants were asked to the rate extent to which the same seven motivators are available in their current daily life on a scale from 1 (not at all) to 5 (very much so) and the scores were summed to create a Participation Motivation – Now score. Possible total scores for each section range from 7 to 35. The magnitude of the loss was determined by the overall difference between the two sections (Then and Now). The internal consistency of the scale within this sample was .75.

*Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet & Farley, 1988).* The MSPSS is a 12-item scale that measures perceived support from family, friends, and a significant other. Participants describe the adequacy of their support using a Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). Possible scores range from 7 to 84, with higher scores indicative of greater perceived social support. Zimet and colleagues (1990) reported strong internal consistency and test-retest reliability. The 3-factor model of the scale is supported by multiple psychometric studies (Canty-Mitchell & Zimet, 2000; Clara, Cox, Enns, Murray, & Torgrudc, 2003; Dahlem, Zimet, & Walker, 1991; Zimet et al., 1990). The Cronbach's $\alpha$ for the scale with the study sample was .92.

*Personality Assessment Inventory (PAI; Morey, 1991).* The PAI is a clinical measure of psychopathology utilized in numerous mental health settings. Morley and Boggs (2003) noted strong content and discriminant validity among the 11 clinical scales in the inventory. Only items from three of the clinical scales (Depression, Anxiety, and Alcohol Problems) were used in the present study. On each scale, items were endorsed utilizing a 4-point Likert scale (0 = "false, not at all true" and 3 = "very true") and summed for a total score. The 24-item Depression scale is designed to evaluate depressive symptoms and phenomenology. Cognitive, affective and physiological symptoms of depression are assessed. Depression scores can range from 0 to 72. The 24-item Anxiety scale addresses the cognitive, affective and physiological symptoms of anxiety. Anxiety scores can range from 0 to 72. The 12 items on the Alcohol Problems scale evaluate features consistent with alcohol dependence and the consequences of problematic alcohol use. Alcohol Problems scores can range from 0 to 36. The scale

reliability analysis of the three clinical scales using the current sample led to the following results: Anxiety $\alpha = .89$, Depression $\alpha = .89$ and Alcohol $\alpha = .77$ which is lower, but generally consistent with the results reported in the scale manual (Morey, 1991).

*Scale Modifications.* With the exception of the Demographic Questionnaire, the second section of the Participation Motivation scale, and the Personality Assessment Inventory scales, the items in each measure were placed in past-tense form. Participants were directed to provide a retrospective evaluation (i.e., mindset at the time of retirement) of the hypothesized predictor variables. Participants were directed to "think of yourself at the end of your college athletic career" when completing the AIMS, EOMEIS-2, BSRI, MIBI, CDMSE, Brief COPE, and MSPSS. Copies of the measures used in this study and described above are located in the appendices with one exception. Due to copyright protection, the Personality Assessment Inventory scale is not included.

*Procedures*

The study questionnaire was placed online using the survey service company SurveyMonkey.com and took approximately 40 min to complete. Informed consent was obtained using the online questionnaire. The consent form was presented as the first webpage of the questionnaire and former student-athletes indicated their voluntary agreement to participate in the study by beginning the online questionnaire. Participants were primarily recruited through internet invitations. The investigator located the NFL and NBA draft list from the years 2005 through 2007 and matched the names of the draft participants to their profiles on social networking websites (i.e., Facebook and Myspace). Potential participants were sent a brief recruitment message describing the study and

provided a hyperlink to the study website. Web-based technical problems prevented proper transmission of the hyperlink and made the 391 invitations sent through MySpace inefficient – only 4 participants completed the survey for a response rate of less than 1%. Invitations sent through the second social networking website, Facebook, were more effective with 131 of the 534 people who were sent the message completing some portion of the survey for a response rate of 24.5%. Participants were also recruited through word of mouth by associates of the investigator. The total number of people informed about the study by the associates is unknown, but 45 individuals who completed the study were recruited in this manner. Staff members of Athletics Departments (e.g., Student-Athlete Support Services, Varsity Clubs, and NCAA Compliance Officers) at over 140 NCAA Division I colleges and universities (including 15 Historically Black Colleges and Universities) were contacted by the investigator requesting assistance with recruitment. With the assistance of 11 schools, 29 participants were recruited for the study. Participants received $10 as compensation for completing the survey and were also entered in a raffle to win one of five $100 gift cards. Due to the participation incentives and NCAA regulations, former student-athletes were required to have no remaining NCAA eligibility in order to participate.

*Data Screening*

Each completed questionnaire was fact-checked using the demographic information collected in order to verify that every participant included in the final sample was a former student-athlete. The investigator ensured that the name of the school, head coach, participation on the team, and in some cases athletic awards reported by participants were consistent with information gathered from the various universities'

Athletics Department website. Of the 209 participants who completed at least the demographic portion of questionnaire, 29 questionnaires were immediately discarded due to indications that the questionnaires were not completed by former student-athletes and invalid. Next, nine participants were removed from the sample because they only completed the demographic section of the entire questionnaire. Another four participants were excluded from analysis because they completed the study questionnaire more than 5 years after their last college game, as were five participants who indicated that they left college sports due to an injury which is not considered deselection for the purposes of this study. Finally, an additional 22 participants were not included in the final sample because more than 25% of the data (including the outcome measure) were missing.

A series of independent t-tests and chi-square tests were conducted to assess demographic differences between the 22 participants removed from the final sample due to missing data and the 140 participant retained for hypotheses testing. There were no significant differences between the demographic profiles of participants removed from the final sample and those retained based on the former student-athletes' age, grade point average, time since last college game, income, race, expectation of playing their sport professionally, past attempts to play professionally, or college degree status.

# CHAPTER IV

# RESULTS

## *Statistical Analyses*

All statistical analyses were performed using SPSS 15.0 (SPSS Inc., 2006) and AMOS 7.0 (Arbuckle, 2006). The majority of the study hypotheses were tested using structural equation modeling (SEM). Two advantages of using SEM are that (1) there is a simultaneous test of the model fit and the individual parameters of the hypothesized relationships and (2) the relationships with latent variables can be examined without contamination from measurement error because the error is estimated explicitly in the model (Kline, 2005). Additionally, SEM allows for analyses with unobserved, latent variables (in this case Psychological Distress) and observed variables making SEM a preferred method for modeling multivariate relationships (Byrne, 2000). Predictor variables, retrospectively endorsed by participants, were expected to be significant in the predicted directions toward the latent concept of Psychological Distress (defined as the shared variance of Anxiety, Depression and Alcohol Problems). The statistical significance of the Beta coefficients was examined to evaluate the primary hypotheses. The hypothesized negative main effect of racial identity was tested using multiple regression analysis due to the smaller number of participants of color ($N = 65$). Regression analysis was also used to test the hypothesized moderation of Social Support.

The SEM analysis involved a two-step procedure – the confirmation of the measurement model followed by the evaluation of the theoretical model. Goodness-of-fit statistics were used to determine how well the hypothesized model fit the collected data.

As recommended by Kline (2005), the model chi-square ($\chi^2$), Root mean square error of approximation (RMSEA), and Comparative Fit Index (CFI) were used to assess model fit in this study. The Tucker-Lewis Index (TLI) is a popular index that is less affected by sample size and was also used to assess model fit (Schreiber et al., 2006). The general rules for acceptable fit using these indices are that $\chi^2/df \leq 2$, RMSEA < .08, CFI $\geq$ .95, and TLI $\geq$ .95 (Hu & Bentler, 1999; Schreiber et al., 2006).

*Preliminary Analyses*

*Normality.* Means, standard deviations, correlation coefficients, kurtosis, and skewness values for the study variables are presented in Table 2. Outliers (cases with standardized scores greater than $z \geq 3.00$) were truncated to reduce the influence of the extreme values on the analyses (Haworth, 1996; Tabachnick & Fidell, 2001). In four cases (1 participation motivation, 2 anxiety, and 1 alcohol problems), the raw scores were adjusted; the cases were assigned a score that was equivalent to the next most extreme score in the distribution. After the truncation of scores, measures of skew and kurtosis (Table 2) were $\leq 2$ for all variables suggesting an adequate distribution of scores (Tabachnick & Fidell, 2001). An examination on the intercorrelations among predictor variables was conducted to assess for multicollinearity. Bivariate correlations between the independent variables (shown in Table 2) were relatively low, ranging from -.23 to .33, minimizing concerns of multicollinearity (Tabachnick & Fidell, 2001). Multivariate normality was assessed by comparing the Mahalanobis distance values against the $\chi^2$ critical value. The maximum value for Mahalanobis distance found in the sample (24.35)

Table 2
Correlations, Means and Standard Deviations

| Observed variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Particip. Motivation | – | | | | | | | | | | |
| 2. Athletic Identity | -.02 | – | | | | | | | | | |
| 3. Identity Foreclosure | .10 | .15 | – | | | | | | | | |
| 4. Masculinity | .14 | .01 | -.01 | – | | | | | | | |
| 5. Racial Centrality | .10 | .05 | .23** | .28** | – | | | | | | |
| 6. Maladaptive Coping | .03 | .36** | .28** | -.01 | .05 | – | | | | | |
| 7. Social Support | .06 | -.10 | -.05 | .23** | .15 | -.06 | – | | | | |
| 8. CDMSE | .02 | -.10 | -.14 | .26** | .03 | -.23** | .33** | – | | | |
| 9. Anxiety | .23** | .31** | .17* | -.06 | .02 | .43** | -.28** | -.26** | – | | |
| 10. Depression | .21* | .32** | .19* | -.17* | .05 | .55** | -.26** | -.41** | .80** | – | |
| 11. Alcohol Problems | .18* | .20* | .21* | .08 | .10 | .25** | .03 | -.15 | .35** | .39** | – |
| M | 5.43 | 37.96 | 45.84 | 55.70 | 3.69 | 17.20 | 66.99 | 36.72 | 13.95 | 13.65 | 7.06 |
| SD | 6.77 | 6.73 | 12.93 | 9.20 | 1.21 | 5.07 | 11.73 | 6.28 | 9.47 | 10.05 | 4.88 |
| Skewness | .52 | -.50 | -.08 | -.56 | .14 | .30 | -.19 | -.59 | 1.05 | .95 | .61 |
| Kurtosis | -.12 | -.41 | -.69 | -.25 | -.12 | -.51 | -.81 | -.21 | .58 | .00 | .35 |

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

was less than the $\chi^2$ critical value for eight dependent variables (26.13) which indicated that there were no substantial multivatiate outliers in the sample.

*Missing Data.* The final sample consisted of 140 participants, 41 of whom left at least one item unanswered in the questionnaire. Notably, 32 of the 41 participants with any missing data only had one or two of the 156 items missing (1% of the total data points missing). Full Information Maximum Likelihood (FIML), which estimates parameter values that are most consistent with the raw data by making use of all available data points was used to handle missing data in the SEM analyses. FIML outperforms more traditional methods for dealing with incomplete data (i.e., listwise deletion, pairwise deletion, and mean imputation) and leads to less biased and more reliable parameter estimates (Allison, 2003; Peters & Enders, 2002). FIML is not available in SPSS and therefore a different missing data approach was used when the regression analyses were conducted. Expectation Maximization (EM), an algorithm technique that identifies the expected value of the log-likelihood given the sample parameter values and then maximizes the expected log-likelihood to produce new estimates of the parameters, was used to impute missing data points (Allison, 2003). The missing values were replaced with the expected values, given the fixed values of the sample parameters. The EM algorithm is highly recommended over the use of the traditional methods of dealing with missing data (Peugh & Enders, 2004).

*Demographic Variables.* A correlation analysis (Table 3) was conducted to assess if demographic factors were related to participants' current level of psychological distress and needed to be included in the analysis of hypotheses. There were no significant relationships between current distress and age, time since last college game, income,

Table 3
Correlations Among Demographic Variables and Psychological Distress

| Observed variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | – | | | | | | | | | | | | |
| 2. Time since last game | .79** | – | | | | | | | | | | | |
| 3. Race[1] | .13 | .20* | – | | | | | | | | | | |
| 4. Starting status in college | -.03 | -.07 | -.02 | – | | | | | | | | | |
| 5. Expectation of playing pro | -.10 | -.14 | -.24** | .42** | – | | | | | | | | |
| 6. NCAA Division[2] | -.06 | .02 | -.06 | .06 | .17* | – | | | | | | | |
| 7. Graduated college | .05 | .03 | .01 | .00 | .04 | -.01 | – | | | | | | |
| 8. Marital Status[3] | -.20* | -.14 | .06 | .06 | .16 | .03 | -.09 | – | | | | | |
| 9. Parental Status | -.16 | -.03 | -.25** | .09 | .20* | -.02 | -.15 | .30** | – | | | | |
| 10. Income | .20* | .16 | -.11 | -.02 | -.06 | -.10 | -.14 | -.02 | .03 | – | | | |
| 11. Attempt to play Pro | -.18* | -.29** | -.16 | .43** | .48** | -.02 | .20* | .02 | .05 | -.05 | – | | |
| 12. Attempt to play Semipro | -.13 | -.22** | -.30** | .07 | .31** | .05 | .00 | -.04 | .10 | .03 | .24** | – | |
| 13. Psychological Distress | .10 | -.02 | -.05 | .02 | -.04 | .00 | .14 | .02 | -.15 | .03 | -.01 | .05 | – |

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

[1] Caucasian or Person of color [2] Division I (yes or no) [3] Married (yes or no)

race/ethnicity, marital status, NCAA division, starting status, expectation of playing their sport professionally, past attempts to play professionally, or college degree status. Therefore, these demographic variables were not considered in the tests of research hypotheses.

In order to test if the time since participants' last college game had a quadratic relationship to their current level of psychological distress, a curvilinear regression analysis was conducted. The variable for the time since the last game and a quadratic term (time since last game squared) were entered into a regression equation. The coefficient associated with the quadratic term was nonsignificant [$\beta = -.11$, $t = -0.33$, $p = .74$], indicating that there was not a curvilinear relationship between time since last game and current distress.

*Clinical Results.* The average participant experienced non-clinical levels of depression ($M = 13.65$, $SD = 10.05$), anxiety ($M = 13.95$, $SD = 9.47$), and alcohol problems ($M = 7.06$, $SD = 4.80$). Frequency analyses showed that 5.7% of anxiety scores, 15.0% of depression scores, and 8.7% of alcohol problems scores could be considered clinically significant (t-score $\geq 65$). Overall, 32 participants (22.9%) scored in the clinically significant range on at least one of the three measures of psychological distress which is lower that the national prevalence rate of 26.2% for a diagnosable mental disorder (Kessler et al., 2005).

*Structural Equation Modeling of the Data*

*Measurement Model.* The measurement model is the portion of the overall model that contains the latent variable and its indicators and is assessed in the same manner as a confirmatory factor analysis. In the current model the latent (unobserved) variable,

Psychological Distress, was measured by three indicator (observed) variables: Depression, Anxiety, and Alcohol Problems. The measurement model has six observations available to estimate the six model parameters making the model a "just-identified" model. In just-identified models, the parameter estimates perfectly reproduce the sample covariance matrix, and model fit cannot be directly tested. Therefore, one of the predictor variables (Athletic Identity) was added to the model for the purposes of providing more observations than parameters and creating an "overidentified" model. The revised measurement model resulted in a good fit of the data to the hypothesized structure: ([$\chi$2 (2) = .75, $p$ = .69], $\chi^2$/df = .37, RMSEA < .01 with a 90% confidence interval of .00 – .13, CFI = 1.00 and TLI = 1.00. All three indicators loaded significantly on the latent variable (see Table 4). The results of the measurement model show that Psychological Distress is adequately represented by its three indicators and that the latent variable is psychometrically sound.

*Full Model.* The initial full structural model (Figure 3) consisting of the latent variable and seven predictors (Participation Motivation, Maladaptive Coping, Career Decision-Making Self-Efficacy, Social Support, Identity Foreclosure, Athletic Identity and Masculinity) was evaluated to determine if the hypothesized relationships in the model were supported by the collected data. The fit statistics for this model indicated poor fit ([$\chi$2 (33) = 73.46, $p$ < .001], $\chi^2$/df = 2.22, RMSEA = .09 with a 90% confidence interval of .07 – .12, CFI = .86 and TLI = .77). The parameters estimates are presented in more detail in Table 5.

Table 4
Distress Factor Loadings in the Measurement Model

| Measured variable | Unstandardized factor loading | SE | Standardized factor loading | *p* |
|---|---|---|---|---|
| Anxiety | 3.98 | < .01 | .86 | < .001 |
| Depression | 4.58 | .95 | .93 | < .001 |
| Alcohol Problems | 3.98 | .81 | .42 | < .001 |

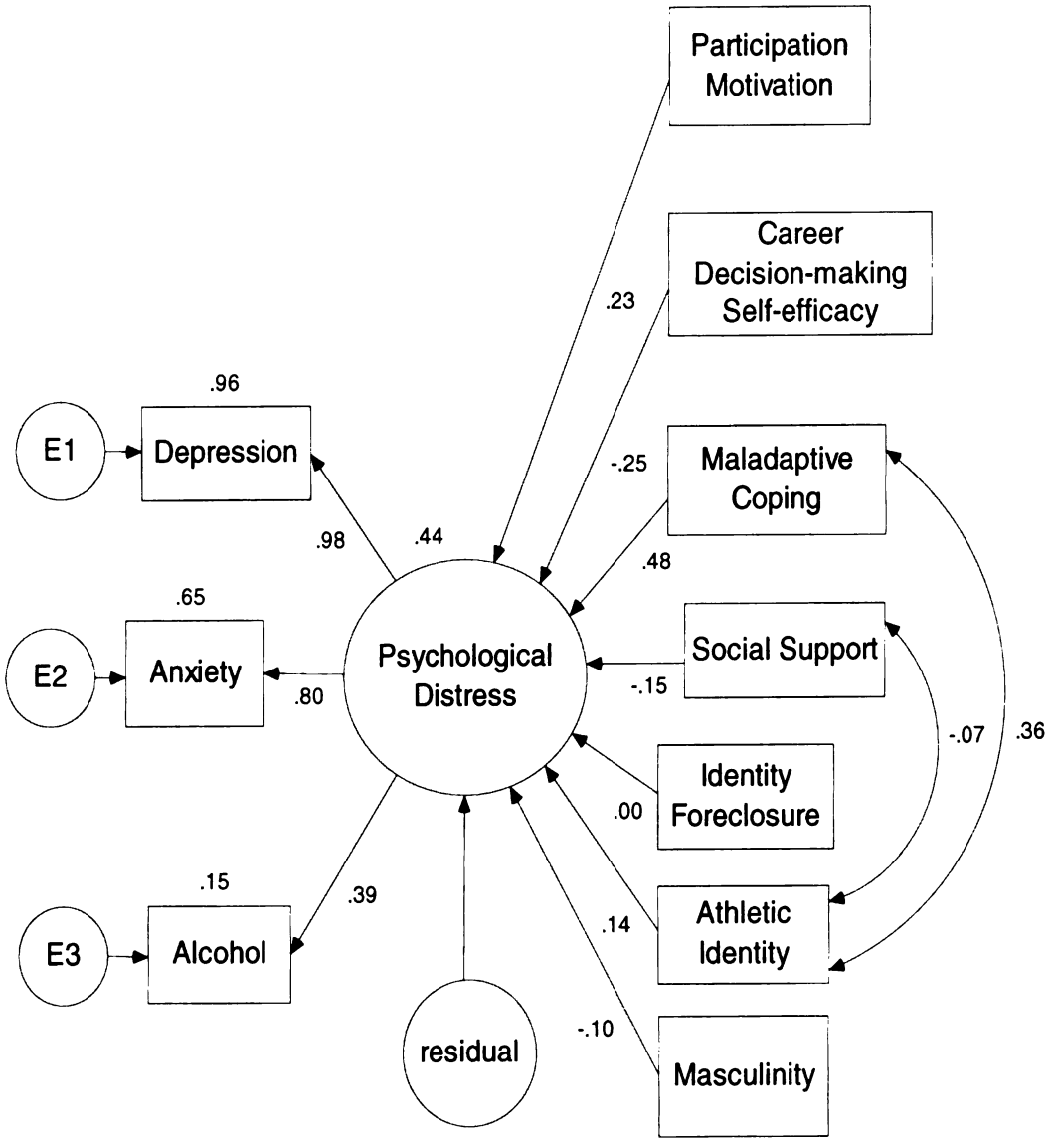


Figure 3. Initial Full Model

Table 5
Parameter Estimates of Predictors of Distress in the Initial Full Model

| Predictor | Unstandardized regression weight | SE | Standardized regression weight | *p* |
|---|---|---|---|---|
| Motivation | .06 | .02 | .23 | .006 |
| CDMSE | -.07 | .02 | -.25 | .004 |
| Mal. Coping | .17 | .05 | .48 | < .001 |
| Social Support | -.02 | .01 | -.15 | .05 |
| Foreclosure | -.001 | .01 | -.004 | .95 |
| Athletic Identity | .04 | .02 | .14 | .07 |
| Masculinity | -.02 | .01 | -.10 | .17 |

$N = 140$, $R^2 = 0.44$

The results of the initial full model suggested the need for modifications to the theoretical model in order to improve of the overall fit to the data. Based on the nonsignificant regression coefficients in the initial model, Masculinity and Identity Foreclosure were eliminated as predictors. This modification is logical in that both constructs were conceptualized as aspects of athletic identity. It is possible that the athletic identity measure adequately captured the concept of masculinity and exclusive identity without the contributions of masculinity and foreclosure scales. The removal of Masculinity and Identity Foreclosure variables were considered theoretically justified and the two variables were not retained for the final model. Additionally, the hypothesized covariance between Social Support and Athletic Identity was not significant so the parameter was removed for the final model. Statistical results suggested a covariance between CDMSE and Social Support. This potential covariance is theoretically defensible; higher perceived social support has been found to predict stronger CDMSE (Quimby & O'Brien, 2004). Therefore, the covariance was added to the model.

The final full model with standardized parameters estimates for the structural paths is illustrated in Figure 4. The fit indices indicate a good fit of the data to the hypothesized structure ([$\chi$2 (18) = 22.29, $p$ = .22], $\chi^2$/df = 1.24, RMSEA = .04 with a 90% confidence interval of .00 – .09, CFI = .98 and TLI = .97). The model accounted for 46% of the variance in Psychological Distress. There were no substantial changes in the regression weights (Table 6) between the initial and the final model and only an additional 2% of the variance in Psychological Distress was explained by the modifications. The parameter changes were made post hoc in order to improve the overall model fit and the changes

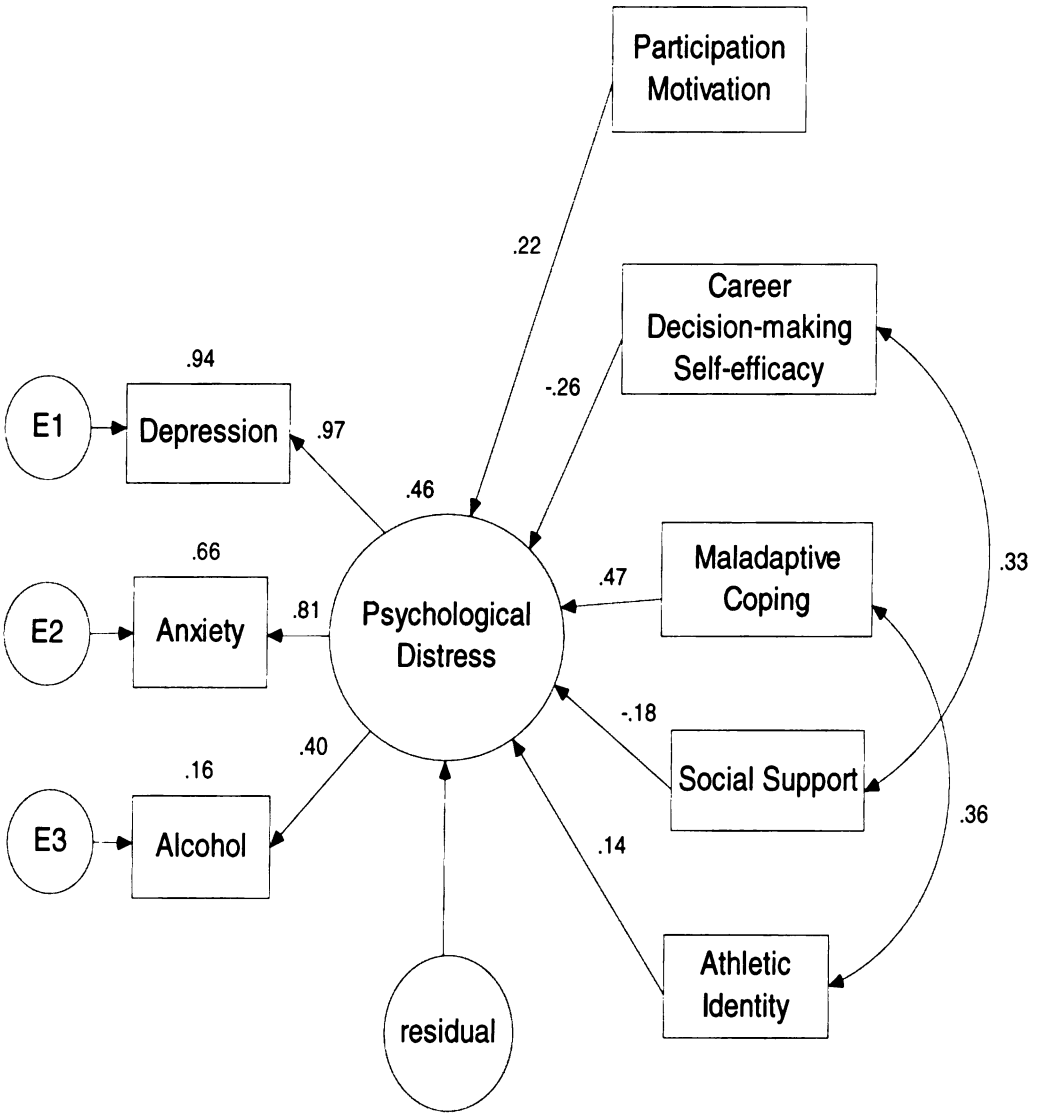


Figure 4. Final Full Model

Table 6
Parameter Estimates of Predictors of Distress in the Final Full Model

| Predictor | Unstandardized regression weight | SE | Standardized regression weight | *p* |
|---|---|---|---|---|
| Motivation | .06 | .02 | .22 | .007 |
| CDMSE | -.08 | .03 | -.26 | .004 |
| Mal. Coping | .17 | .05 | .47 | < .001 |
| Social Support | -.03 | .01 | -.18 | .03 |
| Athletic Identity | .04 | .02 | .14 | .07 |

$N = 140$, $R^2 = 0.46$

were partly empirically driven (although theoretically plausible). Therefore, the final model is tentative and should be cross-validated in future research (Martens, 2005).

*Testing of the Hypotheses*

*Hypotheses 1 – 5.* As indicated in Table 6, conclusive support for Hypothesis 1a was not found, as the relationship between Athletic Identity and Psychological Distress was not significant ($\beta = .14$, $p = .07$). Additionally, no support was found for hypotheses 1b and 1c, as Identity Foreclosure ($\beta = -.004$, $p = .95$) and Masculinity ($\beta = -.10$, $p = .17$) failed to significantly predict Psychological Distress. The regression path between CDMSE and Psychological Distress was significant ($\beta = -.26$, $p = .004$) supporting the Hypothesis 2, lower levels of retrospectively-endorsed self-efficacy regarding career choices at the time of retirement predicted increased current distress. Maladaptive Coping was also a significant predictor of Psychological Distress ($\beta = .47$, $p < .001$), the use of more maladaptive coping strategies at the time of retirement predicted greater current distress (Hypothesis 3). Participation Motivation also contributed to the prediction of Psychological Distress ($\beta = .22$, $p = .01$). Consistent with Hypothesis 4, the results indicated that greater losses in athletic participation motivation factors predicted increased current distress. Hypothesis 5 was also supported. Social Support had a significant regression path toward Psychological Distress ($\beta = -.18$, $p = .03$) signifying that lower levels of perceived social support at retirement predicted increased current distress.

*Hypothesis 1d.* Among student-athletes of color, Racial Identity was hypothesized to negatively predict Psychological Distress. First, in order to validate the need for a separate analysis, an independent-samples t-test was conducted to compare the Racial

Identity scores for Caucasian participants to scores for participants of color. Caucasian participants ($M$=3.25, $SD$=1.17) endorsed having significantly lower levels of Racial Identity at the end of their college careers than participants of color ($M$=4.17, $SD$=0.99), $t(138) = -4.95$, $p < .001$. Of note, the average Racial Identity score among African Americans in this sample was lower than the mean score ($M$=5.23, $SD$=1.08) among African American college students assessed in previous research (Sellers et al., 1997). Next, in order to evaluate how well Racial Identity predicted Psychological Distress among athletes of color (N = 65), a standard multiple regression analysis was conducted in which Psychological Distress was regressed onto Racial Identity and the five predictors that were retained in the final SEM model (Participation Motivation, Maladaptive Coping, CDMSE, Social Support, and Athletic Identity). Psychological Distress was defined by an unweighted composite score using the combined standardized means of the Depression, Anxiety, and Alcohol Problems scales. The summary of the regression analysis is presented in Table 7. There was a lack of support for the hypothesis; Racial Identity at the time of retirement was not a significant predictor of current psychological distress among athletes of color ($\beta = .01$, $t = 0.15$, $p = .88$).

*Hypothesis 6.* Perceived social support was hypothesized to moderate the relationship between each of the predictor variables and Psychological Distress. As noted earlier, Identity Foreclosure and Masculinity were not significant predictors of Psychological Distress and therefore excluded from the interaction analyses. A series of multiple regression analyses were conducted to test if Social Support altered the relationship between the predictor variables (Athletic Identity, Participation Motivation,

Table 7
Multiple Regression Predictors of Distress among Former Student-Athletes of Color

| Predictor | B | SE | β | t | *p* |
|---|---|---|---|---|---|
| Participation Motivation | .13 | .03 | .41 | 4.86 | < .001 |
| CDMSE | -.11 | .03 | -.33 | -3.64 | .001 |
| Maladaptive Coping | .17 | .04 | .37 | 4.07 | < .001 |
| Social Support | -.02 | .02 | -.11 | -1.29 | .201 |
| Athletic Identity | .05 | .03 | .16 | 1.73 | .088 |
| Racial Identity | .03 | .20 | .01 | .15 | .882 |

$N = 65$, $R^2 = 0.61$ $F(6, 58) = 15.24$, $p < .001$

Maladaptive Coping, and CDMSE) and Psychological Distress using the composite distress score described earlier. Variables were centered and the interactions of Social Support with each of the predictors were computed as cross-products. The interaction term and corresponding simple independent variables were then entered into the regression model. The regression analyses resulted in no significant two-way interactions between Social Support and Athletic Identity [$\beta = .001$, $t = 0.10$, $p = .99$], Participation Motivation [$\beta = .08$, $t = 0.95$, $p = .34$], Maladaptive Coping [$\beta = -.01$, $t = -0.07$, $p = .94$], or CDMSE [$\beta = -.05$, $t = -0.56$, $p = .57$]. Perceived social support was not a moderator of distress for any of the predictor variables.

*Hypothesis 7.* The hypothesis that Athletic Identity would be positively correlated with Maladaptive Coping was investigated using the Pearson product-moment coefficient (Table 2). As hypothesized, there was a significant positive correlation [$r = .36$, $p < .001$] between Athletic Identity and Maladaptive Coping. A higher level of athletic identity at the time of retirement was associated with the use of more maladaptive coping strategies at the time of retirement.

*Hypothesis 8.* The hypothesis that Athletic Identity would be negatively correlated with Social Support was also investigated using the Pearson product-moment coefficient (Table 2). The correlation was not statistically significant [$r = -.10$, $p = .27$]. There was not a significant relationship between the participants' athletic identity at their time of retirement and their level of perceived social support at retirement.

# CHAPTER V

# DISCUSSION

## *Interpretation of Results*

The present study was conducted in order to identify risk factors for retirement distress (i.e., psychological distress) among male former student-athletes who were unable to play at a professional level due to deselection. The study examined how well identity factors (athletic identity, identity foreclosure, masculinity, and racial identity), career decision-making self-efficacy, maladaptive coping strategies, the loss of participation motivation factors, and perceived social support predicted current psychological distress. Perceived social support was also evaluated as a potential moderator of distress.

A number of interesting results emerged from this study. First, career decision-making self-efficacy was associated with problems adjusting to life after sports. Participants who noted lower levels of self-efficacy regarding career choices at the time of retirement reported higher levels of psychological distress. While previous research has shown that student-athletes tend to have lower CDMSE when compared to the general college student population (Brown, Glastetter-Fender & Shelton, 2000), little is known about the longer-term implications of this difference. These research findings support the argument that low CDMSE at the time of retirement could contribute to problems adjusting to life after sports. Since student-athletes are less mature in their ability to make career decisions than their non-athlete peers (Kennedy & Dimick, 1988; Martens & Cox, 2000; Sowa & Gressard, 1983), it follows that some student-athletes will

not be confident in their ability to decide on a career after leaving college sports. Consistent with the general self-efficacy theory, student-athletes with low CDMSE are less likely to begin the career decision-making process and participate in pre-retirement career planning when faced with barriers (Betz, 2000). Therefore, it is possible that the former student-athletes with low CDMSE failed to decide and plan on a career after sports and were unprepared for retirement. They may also have chosen a career without fully exploring their options and still had some degree of vocational indecisiveness. Upon leaving college sports, former student-athletes with low CDMSE may have been forced to make initial career decisions in order to meet their financial needs. Undertaking career development tasks after leaving their university without the assistance of the university-based support services and career counselors may have become overwhelming and could have led to distress.

Maladaptive coping strategies were also associated with current psychological distress. Former student-athletes who indicated that they used more maladaptive coping strategies such as denial, behavioral disengagement, and self-blame at the time of their retirement reported experiencing higher levels of current distress. The findings are consistent with the coping literature that notes coping skills affect the quality of retirement and can determine the amount of distress a retiree experiences (Brammer, 1991; Gordon, 1995). Former student-athletes using maladaptive coping strategies as they were ending their athletic careers may have not obtained healthier coping skills during their transition out of college sports and continued to rely on the maladaptive coping skills when faced with stressors during retirement. The maladaptive coping skills may have initially decreased the athletes' level of distress but did not allow for any problem-

focused strategies that may have prevented future acute distress. At some point, the maladaptive strategies were likely no longer effective resulting in an increased and sustained level of retirement distress. The maladaptive strategies may have been effective when dealing with acute stress but prolonged use of those strategies probably interfered with their ability to obtain and employ more productive and healthier coping strategies that would have been more effective - thereby exacerbating distress over time (Carver, Scheier, & Weintraub, 1989).

Another study hypothesis was that the loss of athletics would mean the loss of the intrinsic and extrinsic rewards that motivated athletes to participate in sports and that would lead to increased retirement distress. The study results supported this premise; greater losses in motivation factors were associated with higher levels of current distress. The participants who endorsed a loss of motivation factors were unable to find a job or activity that replaced sports in terms of satisfaction in domains such as fun, energy release, or achievement. Even if the former student-athletes had activities that could be satisfying, they may have been unable redirect their focus and energy from sports to the new area and still felt deprived in some manner (Svoboda & Vanek, 1982). Former student-athletes who reported a significant loss in motivation factors were probably unable to meet the basic needs of competence, autonomy, and relatedness after leaving college sports. These are factors that Ryan and Deci (2000) noted are required to maintain psychological well-being. This study is believed to be one of the first to measure what motivates college athletes to participate in sports as well as what occurs when athletes are faced with the loss of intercollegiate sports and the source of those

incentives to participate. These results will require replication, but may be a worthwhile and productive area for future research.

Social support was also associated with maladjustment to retirement. Lower levels of perceived social support at retirement predicted higher levels of current psychological distress. The findings are consistent with the general retirement literature that indicates that low levels of perceived social support contributes to psychological distress after job loss (Kessler, Turner, & House, 1988; Lavallee, Gordon & Grove, 1997). Participants who perceived that they had an adequate level of social support at the time of retirement probably utilized their supports as they transitioned out of college sports and faced retirement stressors resulting in less psychological distress. Support persons likely served as a sounding board when needed and aided with problem-solving. Perhaps the former student-athletes with solid social support were comforted by the thought that they did not have to "go it alone" and felt more empowered to begin a new direction in their lives. Former student-athletes who did not perceive adequate social support resources may have felt abandoned throughout the retirement process and became overwhelmed and distressed trying to deal with the transition out of college sports by themselves.

Despite the direct effect of social support, no backing was found for the moderation effects of social support on the relationship between the predictor variables and psychological distress. The study sample size may have limited the ability to detect moderation effects if the effect size was small. Therefore, similar studies with larger samples are needed to clarify potential interaction effects. Additionally, there was not a significant relationship between the participants' athletic identity at the time of retirement

and their level of perceived social support at retirement which is not consistent with previous research (Baillie & Danish, 1992; Messner, 1992). The lack of significant findings may indicate that athletes with a strong athletic identity may perceive a strong support system even though they may not have an effective social support network. As noted in the literature review, athletes with a foreclosed athletic identity tend to develop social support systems that promote and maintain their confined identity which may be adequate during college but not beneficial when transitioning out of elite sport (Heyman, 1986).

Another significant study result was based on relationships between predictor variables. Consistent with the findings of Grove and his co-investigators (1997), former student-athletes who endorsed a strong athletic identity at the time of retirement were more likely to use maladaptive coping strategies such as mental disengagement, behavioral disengagement, and denial. It is possible that the one-dimensional identification as an athlete led student-athletes to apply coping skills that were effective in the athletic domain, but maladaptive in general, to other domains of their lives. For example, self-distraction or denial of a problem could be a quick method to handle a problem while on the playing field and allow athletes to perform well under pressure. Yet those same coping strategies would likely prove maladaptive when facing larger, longer-term life stressors such as retirement.

An additional relationship was not initially hypothesized but discovered during the analyses. Higher perceived social support was related to higher CDMSE. Former student-athletes who perceived that they had an adequate level of social support may have believed that they could use their support system to help solve problems related to

choosing a career path and gain assistance with any barriers that they might encounter during their career transition. As noted earlier, individuals with high CDMSE will participate in pre-retirement career planning even when faced with barriers. This willingness to persist in career planning despite barriers may be a function of social support. Support persons might offer suggestions to deal with barriers, provide encouragement that increase former student-athletes' confidence in being able to make career decisions, or help the athletes think through their options which could increase former student-athletes' beliefs in their ability to make satisfactory career decisions.

The remaining study hypotheses were not supported by the results. Despite previous research suggesting that athletic identity significantly predicts retirement distress (Lavellee, Gordon, & Grove, 1997; Webb, et al, 1998), the relationship between athletic identity and psychological distress was not significant in this study. Previous researchers did not use as many additional predictors in their statistical models so it possible that athletic identity had a weaker association with retirement distress when other variables were considered given that the simple correlations with anxiety, depression and alcohol problems were significant.

Identity foreclosure also failed to reach significance in this model and was not significantly related to psychological distress. This finding was surprising, given that identity foreclosure also was correlated to each of the three areas (depression, anxiety, and alcohol problems) used to measure distress. Similar to athletic identity, it is possible that identity foreclosure did not account for a significant amount of the variance once the other predictor variables were entered into the model. Since identity foreclosure was conceptualized as an aspect of athletic identity, it is possible that the athletic identity

construct encompassed some degree of foreclosure leaving the foreclosure construct with little unique variance in the model. It is also plausible that identity foreclosure has a more complex relationship with current distress than found in this study's model.

It is also possible that identity foreclosure did not reached significance in the model due to the way the concept was measured in this study. A general scale of identity foreclosure was utilized with the assumption that general identity foreclosure would also represent foreclosure in athletic identity. A more direct measure of identity foreclosure in the athletic domain might have provided different results. Additionally, identity foreclosure was thought to represent a lack of self-complexity in this study. It is plausible that an absence of self-complexity, more so than athletic identity foreclosure, is a risk factor for retirement distress. An assessment of self-complexity could clarify if former student-athletes have readily available alternative identities when the elite athlete identity is no longer available. Individuals with more self-complexity may be protected from negative affect when faced with failure experiences (Linville, 1985). Future athletic retirement researchers might consider evaluating former student-athletes' self-complexity as a predictor of retirement distress.

There was no support for the hypothesis that masculinity would significantly predict psychological distress. It is possible that the conceptualization of masculinity needed for this study was not adequately captured by the Bem Sex-Role Inventory (BSRI) which was used to measure masculinity. The BSRI has been used extensively in research since the 1970s, but psychometric research over the years has noted problems in validity and poor support for factorially pure masculinity or femininity subscales (Campbell, Gillaspy, & Thompson, 1997; Choi & Fuqua, 2003). Researchers argue that

the masculinity scale may be best used as a measure of instrumentality; traits that are goal oriented, self-assertive, and focused on the external world (Archer & Lloyd, 2002; Hoffman and Borders, 2001). The study hypothesis had to do with a "sense of manhood" not an instrumental approach to life. This misidentification of the masculinity construct could be the basis for the insignificant findings.

A different conceptualization of masculinity, in terms of gender role conflict, may have been more appropriate for this research and led to significant results. Male gender role conflict occurs when the socialized and restrictive role of a man leads to negative consequences and can occur when men are faced with major life transitions such as retirement (O'Neil, 2008). Pleck (1995) noted that it is not masculinity in itself that is problematic but an overadherence to a restrictive stereotypical masculine role that will result in distress when a man cannot meet the stereotypical standards. Gender role conflict is associated with depression and other forms of psychological distress (Hayes & Mahalik, 2000; Mahalik & Cournoyer, 2000). Future research may consider examining the influence of male gender role conflict in the athletic retirement process.

Racial identity (i.e., racial centrality) at the time of retirement was not a significant predictor of current distress among athletes of color. Participants who defined themselves strongly in terms of their race at the time of retirement were no more likely to report current distress than participants who placed less importance on race. It is possible that another dimension of racial identity would be more appropriate in this study. Private racial regard (Sellers et al., 1998), how a person feels about his/her own racial group, seems to address issues of self esteem in terms of racial pride. Indeed, research with African American high school and college students suggests that higher levels of private

regard are associated with higher self-esteem (Rowley et al., 1998). Steinfeldt and Steinfeldt (2008) found that African American student-athletes at a predominantly White institution endorsed high levels of Private Regard despite reporting decreasing levels of racial centrality as their years in college increased. The way student-athletes of color feel about their own race may be more essential and have more implications on their well-being than how central race is in their lives. Racial identity may still serve as a protective factor for student-athletes of color, just in a different manner than initially hypothesized in this study. Future research should reevaluate the relationship between racial identity and retirement distress using the racial identity dimension of private regard.

Racial centrality may also be significantly related to distress in an indirect manner. Discrimination has been found to moderate the relationship between centrality and psychological distress. Among African Americans young adults, racial centrality appears to buffer the negative effects of racial discrimination – racial discrimination appears to result in significant distress among individuals who endorse higher levels of racial centrality (Sellers et al, 2003). Therefore, racial centrality may only be a significant predictor of retirement distress if student-athletes are faced with race-based discrimination during their transition out of college sports. Future researchers may consider questioning former student-athletes about their experiences of discrimination in order to see if the racial identity moderation effect holds true.

*Limitations*

Caution is required when drawing conclusions from the study results due to several limitations. Sample size is an important limitation of the study. Covariances and parameter estimates are sensitive to sample size (Ullman, 2007). It is possible that the

insignificant findings may have been significant with a larger sample that would have provided greater statistical power. Replications studies with larger samples will be needed to verify the study conclusions.

The retrospective design of the study also proved to be a limitation when interpreting the results. The primary statistical procedure utilized in the present research, structural equation modeling, was limited in what it could test because the study design did not support causal inferences. The significant SEM path coefficients in this study were not statistical evidence for causality; they indicated that there was a significant relationship between variables, but not a causal link. Further, researchers cannot test the directionality of a relationship in SEM (Kline, 2005). The direction of the effect of one variable on another in a SEM model is an illustration of the researcher's hypotheses and not the true direction of the statistical relationship. Therefore, despite the theoretical basis for the hypothesized direction of relationships between variables, it is plausible that the direction of the effect could actually be reversed.

Another study design limitation was the length of the questionnaire. It is possible that some potential participants chose not to take part in the study when they observed the length of the survey. Also, participants who did not complete the entire survey due to the length may have differed in some unmeasured manner from those who completed the questionnaire. However, as noted in the Results section, there were no significant differences in the demographics between the participants who were missing less than 25% of the data and those completing less than 75% of the survey.

The study also has limitations due to the questionnaire content. Due to the use of self-report clinical psychopathology measures; the accuracy of the anxiety and depression

symptoms and well as alcohol consumption could not be verified. Also, the predictor variables were endorsed retrospectively likely leading to biased answers and making any strong causal conclusions unfeasible. The bias might be due to generally poor memory or it could be related to the former student-athletes' current mental health. There is a documented negative bias in the recall of autobiographical memories among individuals struggling with depression and anxiety (Burke & Mathews, 1992; Clark & Teasdale, 1982). It is possible that former student-athletes who are currently dealing with symptoms of psychological distress tend to have more negative views when evaluating their lives at the time of retirement (which touches on the issue of directionality discussed above). Future longitudinal research can clarify this matter. By measuring the hypothesized predictor variables at the time of retirement and then asking for a retrospective evaluation of those same variables later into retirement, researchers will be able to determine if former student-athletes who score higher on distress measures have less accurate retrospective evaluations of how they felt as they were retiring. Also, if the predictor variables are measured at the time of retirement and again later into retirement (non-retrospectively), the longitudinal design would allow for analysis of the change in the variables as a predictor of distress.

Additionally, the lack of information regarding previous mental health status makes it impossible to rule-out that the findings are not related to preexisting mental health conditions. Replication studies using a longitudinal design are needed to determine if the study findings hold when there is a more accurate assessment of the variables at the time of retirement as well as knowledge of previous mental health status.

Another study design limitation is the use of a web-based survey. Because participants were unmonitored, it is difficult to know if they were providing accurate demographic information such as age and income or if they were actually completing the questionnaire themselves. However, use of the social networking sites that provide self-reported demographic information for each member allowed for increased assurance that the right people received the study invitations.

People who choose to participate in online research are self-selected – not a random sample of the population (Birnbaum, 2004). It is possible that the former student-athletes who chose to complete the questionnaire felt better about their current position in life than those who did not participate. In the current study, the mean score on the psychological distress scales were well within the non-clinical range – approximately 67% of the sample scored below the clinically significant range on the measures of psychological distress. The former student-athletes who chose to participate in the study were generally not very distressed. Former student-athletes who chose not to participate may have been experiencing a higher level of distress and did not want to disclose their problems. Additionally, since many participants were recruited using social networking websites, it is possible that former students-athletes who use the networking sites differ in experiences than those who do not. For instance, they may be more sociable and have more friends or be considered more academic given their computer skills than student-athletes who do not use social networking sites. Due to the web-based design of the questionnaire, the study sample may also be biased by computer access. Former student-athletes without computer access would not have received nor had the opportunity to respond to the e-mail study participation invitation. Further, potential participants with

limited computer access may have been aware of the study but unable to obtain enough time on a computer to complete the questionnaire. It is unclear how well the study results reflect the experiences of former student-athletes who have limited or no computer access. These limitations reduce the generalizability of the findings to the larger population of former college student-athletes.

Even with the limitations of web-based research, the use of the internet allowed for a more diverse sample (e.g., geographical location, type of university) that would have been more difficult to obtain using traditional mail-based recruiting. Researchers using the web-based research can recruit specialized populations and reach people with special characteristics (Birnbaum, 2004). The study sample was not limited to a traditional convenience sample which allowed for increased diversity in terms of NCAA conferences and geographical location which increases the generalizability of the findings.

The definition and operationalization of deselection could be considered a limitation in the current study. As noted earlier, participants were identified as deselected athletes if they indicated that their college athletic career did not end due to injury or free choice although allowances were made if they reported that they expected to play professionally or attempted to play professionally (i.e., participated in a professional draft). Athletic deselection was defined in this study by omission rather than inclusion – what it is not (i.e., career termination due to age, injury, or free choice) rather than what it is. A better conceptualization of deselection could strengthen the design of future athletic retirement research.

Athletic deselection has been described as a Darwinian process in which athletes who do not meet the performance standards required at the next level of competition do not progress any further (Taylor, Ogilvie, & Lavallee, 2006). Professional league (e.g., NFL, NBA) performance requirements were not assessed nor considered in this study. It may have been beneficial to ask former student-athletes if they took part in training or scouting events (e.g., NFL combines) and the results of their participation. The concept of athletic deselection also assumes that the athletic career termination is involuntary. Deselected athletes desire to play at the next level but are not offered the opportunity to do so. Although 75% of the participants in this study expected to play professionally and 77% attempted to play professionally, it is unclear how many participants truly had the sole desire to be a professional athlete. Future research attempting to operationalize athletic deselection might ask former student-athletes how seriously they aspired to play professionally using a Likert scale and only include the athletes who score at the high end of the scale. Another behavior seemingly indicative of a strong desire to play professionally is obtaining a sports agent. Unfortunately, whether or not former student-athletes had or even sought out an agent was not assessed in this study. By limiting the sample to former student-athletes who reported an intense desire to play professionally, took part in scouting events, and attempted to play professionally by participating in a professional draft and/or acquiring an agent, it is plausible that a more pure sample of deselected athletes could be obtained for future athletic retirement research.

The generalizability of the results is limited in terms of the sport played by former student-athletes. There were a small number of former basketball, baseball, and hockey players in the sample but 92% of the participants played college football. This precluded

separate analyses based on sports. The results may generalize more toward the population of former football players than all male former student-athletes in revenue-producing sports. Replication of this study with significantly more former basketball, baseball, and hockey players is recommended. Further research is also needed to determine if there would be similar finding with female athletes and former student-athletes who did not play in a revenue-producing sport.

The study results may also not be reflective of the experiences of former student-athletes who did not graduate. The 87% graduation rate in the study sample is higher than the national federal graduation rate of 55% for male student-athletes (NCAA, 2007). While degree attainment was not linked to distress in the study's preliminary analyses, it is possible that the results would have been different had there been a larger portion of the sample who did not graduate. More research is needed to determine if these results are replicable with a larger sample of former student-athletes who did not graduate.

*Study Implications*

Despite the limitations discussed above, the present study makes a noteworthy contribution to the understanding of retirement experiences among former intercollegiate athletes. The findings could have considerable implications in the area of student-athlete development and may better inform CHAMPS/Life Skills programming aimed toward student-athletes transitioning out of college as well alumni returning to college to complete their degrees.

The results could be used to create additional tools for the early recognition of student-athletes who are more likely to have difficulties adjusting to life after sports. An assessment tool consisting of measures of participation motivation factors, coping skills,

CDMSE, and social support might be used to identify senior student-athletes at risk and direct them to supportive services such as career counseling workshops, student psychological services, and substance abuse prevention programs.

The study results might also be used to develop a series of workshops for current student-athletes preparing to leave college sports. The intervention might take the form of a college course for credit in which high risk (or even all) senior student-athletes must enroll. There are already life skills programs in place that might be used as a template. For example, Stankovich and colleagues (2001) introduced a program for student-athletes based on a Positive Transition Model that consists of a 10-week college course that allows student-athletes to increase self-awareness, identify transferable skills, and participate in career development tasks. The researchers noted that completion of the program was associated with increased career decision-making skills and decreases in athletic identity, which according to this study's model would decrease the chance of psychological distress after retirement. The findings from this study could be used to enhance this and other similar life skills program. Suggestions on ways to incorporate CDMSE, coping skills, participation motivation factors, and social support are discussed below.

The study results indicated that career decision-making self-efficacy at the time of retirement is associated with current distress. Therefore, while career counseling services are critical during the end of the student-athlete's career, it is not only providing the material that is important. Empowering the student-athletes so that they believe that they can make appropriate career decisions is also necessary for success. Shurts and Shoffner (2004) suggested that career counselors incorporate the Learning Theory of Career

Counseling into their work with student-athletes – using the counseling process as a method of exploration and learning rather than immediate career decision-making. The authors argued that by assisting student-athletes in designing learning experiences that lead to new skill development, counselors can help counter problems related to identity foreclosure and social isolation as well as empower student-athletes in making a satisfying career choice.

Maladaptive coping skills, also associated with current distress, could be addressed in life skills programming. There are numerous coping skills training programs that may be appropriate when working with the student-athlete population. Stress Inoculation Training, a cognitive behavioral intervention for coping with stressors, has been used successfully with athletes (Meichenbaum, 1996). Helping athletes identify their current coping style and working to replace the more maladaptive mechanisms with healthier coping skills would likely reduce the chance of future retirement distress.

Participation motivation factors are another potential area to enhance current programming. Athletics support services staff may consider using a measure of participation motivation like the one used in this study as an assessment tool. The areas that each student-athlete endorses highly could be used to develop a more individualized retirement plan. For instance, if a student-athlete indicates that team atmosphere and skill development are important reasons he participates in college football, then support staff can help him identify and test ways he can obtain these factors in his life after leaving campus.

Social support was also associated with distress. Semi-structured interviews with successful college athletes showed that the athletes viewed social support as

indispensable and the support allowed them to develop coping skills to overcome adversity during their athletic career and facilitated their success (Morgan & Giacobbi, 2006). Yet many student-athletes do not have adequate social support (Baille, 1993). Further, Cockerill (2005) noted that athletes must be prepared to accept the support when it is available. Therefore, skills training on developing healthy support networks and becoming comfortable asking for and accepting support could be a beneficial part of life skills programming. Psychoeducational workshops and support groups could be effective ways to disseminate the information.

The study results also have implication outside of life skills programming. There appears to be a need for more mental health services for senior student-athletes. Given that nearly 23% of the study sample reported clinically significant levels of psychological distress after an average of a little over 2 years following their last college game, Athletics Departments may consider hiring or contracting staff with mental health training in order to provide preventive services for senior student-athletes who have the risk factors for future distress as well as interventions for alumni returning to campus to complete their degrees who are showing signs of distress. Mental health providers who are available to discuss retirement concerns with student-athletes could be an invaluable resource given that athletes who are able to talk with others about their career termination have a decreased likelihood of career termination distress (Lavallee, Gordon & Grove, 1997).

Notably, some student-athletes will not be open to services even when they could benefit most from them. Wolff and Lester (1989) indicated that is important that athletes confronting retirement have the opportunity to try to continue their athletic career

because they must have exhausted every possible avenue before they are good candidates for counseling. Given the numerous avenues to continue toward a goal of playing professional sports (e.g., international, semi-professional, and developmental leagues), some student-athletes may be resistant to supportive counseling services at the time of departure from college sports. Therefore, it may be advantageous if Athletics Departments have professionals on staff to provide services for student-athlete alumni or develop a referral list of providers who are knowledgeable of the psychological implications of sports retirement.

Additionally, there may be a need for psychoeducation and normalizing around obtaining counseling services. Asking for help is often a highly stigmatized issue. Voguel and colleagues (2007) found that among college students the public stigma toward counseling influenced self-stigma which then affected help-seeking attitudes and willingness to seek help. The relationship between perceived public stigma toward counseling and self-stigma was stronger in men than in women. Since public stigma would be difficult to change, addressing individual stigma may be more effective. Therefore, having a series of general well-being seminars as well as requesting that all student-athletes meet once with a mental health professional, endorsed by administrative and coaching staff, who is available to "talk about anything" could increase the usage of counseling services.

*Future Research*

One area that was not considered in this study is the physiological implications of retirement. Some former athletes may have difficulty transitioning from a regular schedule of intense physical training to a self-determined exercise plan that must be

scheduled around their daily responsibilities. It is unlikely that former athletes would be able to invest the same amount of time for physical activity as they did when playing their sport. Elite athletes who have a substantial investment in their body may experience a threat to their self-esteem if they perceive a physical decline after transitioning out of sports (Stephan, Bilard, Niot, & Delignières, 2003). The decrease in physical activity and associated weight gain and the loss of muscle mass might lead to poorer body image and some level of psychological distress. Stephan and colleagues (2007) proposed that physical factors be included in athletic retirement models due to the relationship between body and self-esteem among athletes. Future research in the area of retirement transition may consider assessing the physical activity level of athletes prior to and after retirement as well as measuring potential changes in body image.

Another physiological issue is that the loss of regular physical activity is also the loss of a protective factor against mental health concerns. The U.S. Surgeon General (1996) concluded that "physical activity appears to relieve symptoms of depression and anxiety and improve mood." Regular exercise is thought to reduce symptoms of depression and anxiety in part by increasing endorphins, decreasing muscle tension, and reducing cortisol levels (Mayo Clinic, 2007). It is possible that when faced with the risk factors for maladaptive transitions out of sports, regular physical activity could reduce the chance of retirement distress. Additional research is needed to in order to better understand all of the physiological implications of athletic retirement.

Future research may consider other measures of retirement distress in addition to the assessment of psychopathology and substance abuse. Measures of self-esteem, global well-being, and life satisfaction could provide more detailed information about the mental

health aspects of the transition. It is also possible that some participants would be more willing to endorse problems with life satisfaction than endorse symptoms of clinical psychopathology. Taylor and Ogilvie's (1994) model also theorizes that a retirement crisis may manifest in occupational problems and family/social problems. Therefore, future research can build upon the current findings by assessing job satisfaction, marital/relationship satisfaction, and the quality of interpersonal relationships as outcome measures.

As the athletic retirement literature continues to develop, researchers examining the retirement experience might consider evaluating another cause of career termination – free choice. A number of athletes leave their sport in their own terms. Reasons can include changes in priorities, new interests, new roles in life (e.g., parent, business owner), or the accomplishment of all of their athletic goals. Free choice, unlike athletic deselection and injury, allows athletes to control the decision about whether or not they will continue to participate in their sport. Free choice might have implications for a healthy transition out of sport. For example, athletes who leave due to free choice often have solid post-career goals (Baillee, 1993). It could be interesting to examine how the athletic retirement experiences among athletes who leave sports due to free choice differ from the experiences of athletes who leave due to deselection or injury.

Free choice may also have consequences for athletes who have a strong self-efficacy for playing their sport professionally. Self-efficacy will affect the athletes' choice of activities, influence how much effort athletes expend toward playing professionally, and how long they will persist in the face of barriers and aversive experiences (Bandura, 1977; Bandura, 1997). If a college football player chooses to

persist in his NFL goals despite a lack of ability to play at the professional level and he remains on that career path too long, there could be serious implications for his future well-being. Therefore, athletic retirement researchers may also evaluate free choice in terms of the repercussions when an athlete unwisely chooses not to retire from elite sport.

Factors that contribute to the quality of a student-athlete's transition out of college sports and that may compromise psychological well-being during retirement require further clarification. Undoubtedly, more research is needed to determine the generalizability of this study's finding. However, the study results contribute to the current retirement literature and it is anticipated that the study results can be used to design and enhance student-athlete support services and interventions targeting alumni and at-risk senior athletes. Knowledge of the athletic retirement process may help decrease the prevalence of psychological morbidly during athletic retirement and ensure a more enriching life after college sports for student-athlete alumni.

# APPENDIX A

## DEMOGRAPHIC QUESTIONNAIRE

1. Date of birth _ _ / _ _ / _ _ (dd/mm/yy)

2. Race/Ethnicity
☐ White or Caucasian ☐ Black or African American ☐ Hispanic or Latino ☐ Asian
☐ American Indian or Alaska Native ☐ Native Hawaiian or Other Pacific Islander
☐ Biracial (please specify) _____

3. Sport: ☐ Football ☐ Basketball ☐ Baseball ☐ Hockey

4. Starting status: Did you start for your team on a regular basis (more than 50% of the time)? ☐ Yes ☐ No

5. Please list any athletic awards you received during college.

6. Date of last college game in which you played (mm/yyyy). _____

7. Did you expect to play at the professional level? ☐ Yes ☐ No

8. College/ University _____ 9. Name of your head coach _____

10. College Major _____ 11. College GPA _____

12. Did you graduate? ☐ Yes ☐ No 13. Current Occupation _____

14. Marital Status
☐ Single ☐ Living with Significant Other ☐ Married ☐ Divorced ☐ Widowed

15. How many children do you have? _____

16. If applicable, how many of your children were born before or during you college career? ____

17. Which group describes your annual family income?

| | | |
|---|---|---|
| ☐ Under $15,000 | ☐ $50,000 - $59,999 | ☐ $100,000 - $124,999 |
| ☐ $15,000 - $19,999 | ☐ $60,000 - $69,999 | ☐ $125,000 - $149,999 |
| ☐ $20,000 - $29,999 | ☐ $70,000 - $79,999 | ☐ $150,000 - $174,999 |
| ☐ $30,000 - $39,999 | ☐ $80,000 - $89,999 | ☐ $175,000 - $199,999 |
| ☐ $40,000 - $49,999 | ☐ $90,000 - $99,999 | ☐ over $200,000 |

18. Why did your college athletic career end?
☐ End of eligibility ☐ Injury or medical concerns ☐ Cut from team
☐ Personal choice (e.g., no longer interested, not enough playing time)
☐ Other (Please specify) _____

19. Did you attempt to play at the professional level (NFL, NBA, NHL)? ☐ Yes ☐ No
20. If yes, what happened?
21. Did you attempt to play at the semi-professional level (arena football, NBA D-League, AHL, ECHL)? ☐ Yes ☐ No
22. If yes, what happened?

# APPENDIX B

## ATHLETIC IDENTITY MEASUREMENT SCALE

| | 1 (strongly disagree) | | to | | 5 (strongly agree) |
|---|---|---|---|---|---|
| I considered myself an athlete. | 1 | 2 | 3 | 4 | 5 |
| I had many goals related to my sport. | 1 | 2 | 3 | 4 | 5 |
| Most of my friends were athletes. | 1 | 2 | 3 | 4 | 5 |
| My sport was the most important part of my life. | 1 | 2 | 3 | 4 | 5 |
| I spent more time thinking about my sport than anything else. | 1 | 2 | 3 | 4 | 5 |
| I needed to participate in my sport to feel good about myself. | 1 | 2 | 3 | 4 | 5 |
| Other people saw me mainly as an athlete. | 1 | 2 | 3 | 4 | 5 |
| I felt bad when I did poorly in my sport. | 1 | 2 | 3 | 4 | 5 |
| My sport was the only important thing in my life. | 1 | 2 | 3 | 4 | 5 |
| I would have been very depressed if I were injured and could not compete in my sport. | 1 | 2 | 3 | 4 | 5 |

# APPENDIX C

## EXTENDED OBJECTIVE MEASURE OF EGO IDENTITY STATUS

Directions: Please respond to the following questions using the following scale:

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| strongly disagree | moderately disagree | agree | disagree | moderately agree | strongly agree |

| | |
|---|---|
| My ideas about men's and women's roles were identical to my family's ideas. What worked for them would obliviously work for me. | 1 2 3 4 5 6 |
| I might have thought about a lot of different jobs, but there was never really any question after my family said what they wanted. | 1 2 3 4 5 6 |
| My family knew what was best for me in terms of how to choose my friends. | 1 2 3 4 5 6 |
| I guess I was pretty much like my family when it came to politics. I followed what they wanted to do in terms of voting and such. | 1 2 3 4 5 6 |
| My ideas about men's and women's roles came right from my family. I didn't see any need to question what they taught me. | 1 2 3 4 5 6 |
| My own views on a desirable lifestyle were taught to me by my family and I did not see a need to question what they taught me. | 1 2 3 4 5 6 |
| I only picked friends my family would approve of. | 1 2 3 4 5 6 |
| I always liked doing the same recreational activities my family did and did not ever seriously consider anything else. | 1 2 3 4 5 6 |
| I only went out with the type of people that my family expected me to date. | 1 2 3 4 5 6 |
| My family decided a long time ago what I should go into for employement and I was following through with their plan. | 1 2 3 4 5 6 |
| My family's view on life were good enough for me, I did not need anything else. | 1 2 3 4 5 6 |
| I attended the same church/temple/mosque as my family has always attended. I never really questioned why. | 1 2 3 4 5 6 |
| I never really questioned my religion. If it was right for my family it must have been right for me. | 1 2 3 4 5 6 |
| All of my recreational preferences I got from my family and I did not really try anything else. | 1 2 3 4 5 6 |
| I only dated people my family would approve of. | 1 2 3 4 5 6 |
| My family always had their own political and moral beliefs about issues like abortion and mercy killing and I always went along accepting what they believed. | 1 2 3 4 5 6 |

# APPENDIX D

## BEM SEX-ROLE INVENTORY – SHORT FORM

Using the following scale, mark the answer that best respresents how well each of the following characteristics described you:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| never or or almost never true | usually not true | sometimes but infre-quently true | occasionally true | often true | usually true | always or almost always true |

| | |
|---|---|
| _____ | defended own beliefs |
| _____ | independent |
| _____ | assertive |
| _____ | strong personality |
| _____ | forceful |
| _____ | had leadership abilities |
| _____ | willing to take risks |
| _____ | dominant |
| _____ | willing to take a stand |
| _____ | aggressive |

# APPENDIX E

## MULTIDIMENSIONAL INVENTORY OF BLACK IDENTITY

*Directions:* The following questions have to do with your feelings. Please take your race/ethnicity and mentally place it into the spaces below.

*Example: If you identify as Latino, the first question would be...*
*Overall, being <u>Latino</u> had very little to do with how I felt about myself*

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | | | **Neutral** | | | **Strongly Agree** |

1. Overall, being _____ had very little to do with how I felt about myself.

   1 2 3 4 5 6 7

2. In general, being _____ was an important part of my self-image.

   1 2 3 4 5 6 7

3. My destiny was tied to the destiny of other _____ people.

   1 2 3 4 5 6 7

4. Being _____ was unimportant to my sense of what kind of person I was.

   1 2 3 4 5 6 7

5. I had a strong sense of belonging to _____ people.

   1 2 3 4 5 6 7

6. I had a strong attachment to other _____ people.

   1 2 3 4 5 6 7

7. Being _____ was an important reflection of who I was.

   1 2 3 4 5 6 7

8. Being _____ was not a major factor in my social relationships.

   1 2 3 4 5 6 7

# APPENDIX F

## CAREER DECISION MAKING SELF-EFFICACY – SHORT FORM

INSTRUCTIONS: For each statement below, please read carefully and indicate how much confidence you had that you could accomplish each of these tasks by marking your answer according to the key.

| | (1) No Confidence at all | | | | to (5) Complete Confidence |
|---|---|---|---|---|---|
| Make a plan of your goals for the next five years. | 1 | 2 | 3 | 4 | 5 |
| Accurately assess your abilities. | 1 | 2 | 3 | 4 | 5 |
| Determine the steps you needed to take to successfully complete your chosen major. | 1 | 2 | 3 | 4 | 5 |
| Determine what your ideal job would be. | 1 | 2 | 3 | 4 | 5 |
| Prepare a good resume. | 1 | 2 | 3 | 4 | 5 |
| Decide what you value most in an occupation. | 1 | 2 | 3 | 4 | 5 |
| Figure out what you were and were not ready to sacrifice to achieve your career goals. | 1 | 2 | 3 | 4 | 5 |
| Identify employers, firms, institutions relevant to your career possibilities. | 1 | 2 | 3 | 4 | 5 |
| Define the type of lifestyle you would like to live. | 1 | 2 | 3 | 4 | 5 |
| Successfully manage the job interview process. | 1 | 2 | 3 | 4 | 5 |
| Identitfy some reasonable major or career alternative if you were unable to get your first choice. | 1 | 2 | 3 | 4 | 5 |

# APPENDIX G

# BRIEF COPE

Directions: The following list has a number of common ways people deal with transitions. Using the scale provided below, mark the ways you used to deal with leaving college sports.

| | **1** I didn't do at all | | | **4** I did this a lot |
|---|---|---|---|---|
| I turned to work or other activities to take my mind off things. | 1 | 2 | 3 | 4 |
| I concentrated my efforts on doing something about the situation I was in. | 1 | 2 | 3 | 4 |
| I said to myself "this isn't real. | 1 | 2 | 3 | 4 |
| I used alcohol or other drugs to make myself feel better. | 1 | 2 | 3 | 4 |
| I got emotional support from others. | 1 | 2 | 3 | 4 |
| I gave up trying to deal with it. | 1 | 2 | 3 | 4 |
| I took action to try to make the situation better. | 1 | 2 | 3 | 4 |
| I refused to believe that it had happened. | 1 | 2 | 3 | 4 |
| I said things to let my unpleasant feelings escape. | 1 | 2 | 3 | 4 |
| I got help and advice from other people. | 1 | 2 | 3 | 4 |
| I used alcohol or other drugs to help me get through it. | 1 | 2 | 3 | 4 |
| I tried to see it in a different light, to make it seem more positive. | 1 | 2 | 3 | 4 |
| I critized myself. | 1 | 2 | 3 | 4 |
| I tried to come up with a strategy about what to do. | 1 | 2 | 3 | 4 |
| I got comfort and understanding from someone. | 1 | 2 | 3 | 4 |

| | 1<br>I didn't do at all | | | 4<br>I did this a lot |
|---|---|---|---|---|
| I gave up the attempt to cope. | 1 | 2 | 3 | 4 |
| I looked for something good in what was happening. | 1 | 2 | 3 | 4 |
| I made jokes about it. | 1 | 2 | 3 | 4 |
| I did something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or playing video games. | 1 | 2 | 3 | 4 |
| I accepted the reality of the fact that it had happened. | 1 | 2 | 3 | 4 |
| I expressed my negative feelings. | 1 | 2 | 3 | 4 |
| I tried to find comfort in my religion or spiritual beliefs. | 1 | 2 | 3 | 4 |
| I tried to get advice or help from other people about what to do | 1 | 2 | 3 | 4 |
| I learned to live with it. | 1 | 2 | 3 | 4 |
| I thought hard about what steps to take. | 1 | 2 | 3 | 4 |
| I blamed myself for things that happened. | 1 | 2 | 3 | 4 |
| I prayed or meditated. | 1 | 2 | 3 | 4 |
| I made fun of the situation. | 1 | 2 | 3 | 4 |

# APPENDIX H

## PARTICIPATION MOTIVATION

Please rate if each of these factors was a "very important," "somewhat important," or "not at all important" reason for you to participate in college athletics.

| | not at all important | | somewhat important | | very important |
|---|---|---|---|---|---|
| achievement/status (feeling important, gaining recognition, popularity, winning) | 1 | 2 | 3 | 4 | 5 |
| team atmosphere (teamwork, being on a team) | 1 | 2 | 3 | 4 | 5 |
| excitement/challenge (the challenge, the action, the excitement) | 1 | 2 | 3 | 4 | 5 |
| fitness (staying in shape, physically fit) | 1 | 2 | 3 | 4 | 5 |
| energy release (releasing tension, having something to do) | 1 | 2 | 3 | 4 | 5 |
| skill development (improving skills, learning new skills) | 1 | 2 | 3 | 4 | 5 |
| friendship (spending time with friends, meeting new people) | 1 | 2 | 3 | 4 | 5 |

Relative to college athletics, to what degree have you been able to find these same factors in your current occupation and/or daily activities?

| | not at all | | somewhat | | very much so |
|---|---|---|---|---|---|
| achievement/status (feeling important, gaining recognition, popularity, winning) | 1 | 2 | 3 | 4 | 5 |
| team atmosphere (teamwork, being on a team) | 1 | 2 | 3 | 4 | 5 |
| excitement/challenge (the challenge, the action, the excitement) | 1 | 2 | 3 | 4 | 5 |
| fitness (staying in shape, physically fit) | 1 | 2 | 3 | 4 | 5 |
| energy release (releasing tension, having something to do) | 1 | 2 | 3 | 4 | 5 |
| skill development (improving skills, learning new skills) | 1 | 2 | 3 | 4 | 5 |
| friendship (spending time with friends, meeting new people) | 1 | 2 | 3 | 4 | 5 |

# APPENDIX I

## MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT

Mark the answer on the line to indicate the extent to which each statement was true for you at the end of your college career.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| **Strongly Disagree** | | | **Neutral** | | | **Very Strongly Agree** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. There was a special person who was around when I was in need | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. There was a special person with whom I could share my joys and sorrows. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. My family really tried to help me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I got the emotional help and support I needed from my family. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I had a special person who was a real source of comfort to me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. My friends really tried to help me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I could count on my friends when things went wrong. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I could talk about my problems with my family. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I had friends with whom I could share my joys and sorrows. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. There was a special person in my life who cared about my feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. My family was willing to help me make decisions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I could talk about problems with my friends. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# APPENDIX J

## CONSENT FORM

## CONSENT FORM

Student-Athlete Alumni Study: Predictors of Retirement Distress among Male Former Intercollegiate Athletes in Revenue-Producing Sports

You are being asked to participate in a research study that explores the unique experiences of college student-athletes after leaving college.

**What you will be asked to do:** Should you agree to participate, you will be given a series of questions (taking approximately 35 minutes to complete). Please complete these questions as thoroughly and honestly as possible- there are no right or wrong answers. To compensate participants for their time, all participants will receive $10 and be entered into a random drawing for a $100 gift certificate (from Ticketmaster, Footlocker, Wal-Mart, Target, or a gas card). Odds of winning will depend upon the total number of participants.

**Benefits:** We believe that the research study results will have practical applications for university administrators and athletic departments working with current and former student-athletes. Study findings may also help enhance services provided to student-athletes transitioning out of college. Additionally, the information gained from this study will increase our understanding of the unique experiences of student-athlete alumni.

**Risks:** There are no known physical, legal, or economic risks associated with this research study. There is a risk that you may become fatigued or feel uncomfortable answering some questions about sensitive issues regarding personal beliefs, behaviors, experiences and attitudes. You have the right to skip any questions that you do not feel comfortable answering and are allowed to stop at any point in the survey. Some of the questions ask whether you are feeling distressed or unhappy. We strongly urge you to consult a professional if these feelings are interfering with your well-being. Many measures will be used to protect the confidentiality of your answers. However, in the interest of your well-being, if at any point your responses indicate that you are feeling exceedingly distressed, the secondary investigator will contact you and provide referral information.

**Voluntary participation:** You may choose not to participate at all or decline to participate in certain sections or answer certain questions. At any time during your participation, you have the right to discontinue your participation without penalty. Group-based findings from the study will be distributed to participants requesting such material.

**Confidentiality:** Your participation in this research study will remain private and confidential; no one except the principal investigators will have access to your responses and participation records. All information from completed questionnaires will be stored in a secure location. You will not be identifiable in any report of research findings; research reports will provide group (rather than individual) findings. Your privacy will be protected to the maximum extent allowable by law.

**Whom to contact with questions:** The research study is conducted by a graduate student, Mercedes Carswell, under the supervision of Deborah Feltz, Ph.D. from Michigan State University. If you have any questions or concerns about this study, please contact the investigators, Mercedes Carswell by phone: (517) 974-8901 or e-mail: carswel2@msu.edu, or Dr. Deborah Feltz, by phone: (517) 355-4732 or e-mail: dfeltz@msu.edu. If you have any questions or concern about your rights as a study participants, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish – Peter Vasilenko, Ph.D., Director of Human Research Protections by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: irb@msu.edu, or regular mail: 202 Olds Hall, Michigan State University, East Lansing, MI 48824-1047.

**Agreement:** You indicate your voluntary agreement to participate by beginning the online questionnaire. Please print a copy of this page for your records. You may also request a copy of this consent form by contacting Mercedes Carswell by phone: (517) 974-8901 or e-mail: carswel2@msu.edu.

# REFERENCES

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Adams, G. R. (1998). *Objective measure of ego identity status: A reference manual.* Unpublished manuscript.

Adler, P. A., & Adler, P. (1991). *Backboards and blackboards.* New York: Columbia University.

Alderman, R. B. (1978). Strategies for motivating young athletes. In W.F. Straub (Ed.), *Sport psychology: An analysis of athlete behavior* (pp.136 – 148). Ithaca, New York: Mouvment Publications.

Alfermann, D., Stambulova, N., & Zemaityte, A. (2004). Reactions to sport career termination: A cross-national comparison of German, Lithuanian, and Russian athletes. *Psychology of Sport and Exercise, 5*(1), 61 – 75.

Allison, M. T., & Meyer, C. (1998). Career problems and retirement among elite athletes: The female tennis professional. *Sociology of Sport Journal, 5*, 212 – 222.

Allison, P. D. (2003). Missing data techniques for Structural Equation Modeling. *Journal of Abnormal Psychology, 112*(4), 545 – 557.

American Institute for Research. (1989). *Results from the National Study of Intercollegiate Athletes.* Palo Alto, CA: Center for the Study of Athletics.

Anderson, W. A., Albrecht, R. R., McKeag, D. B., Hough, D. O., & McGrew, C. A. (1991). A national survey of alcohol and drug use by college athletes. *The Physician and Sportmedicine, 19*(2), 91 – 104.

Arbuckle, J. L. (2006). *AMOS 7.0 user's guide.* Chicago, IL: Small Walters Corporation.

Archer, J. & Lloyd, B. (2002). *Sex and gender (2nd ed.).* London: Cambridge University Press.

Avery, C. M., & Jablin, F. M. (1988). Retirement preparation programs and organizational communication. *Communication Education, 1*, 68 – 80.

Baillie, P. H. F. (1993). Understanding retirement from sports: Therapeutic ideas for helping athletes in transition. *The Counseling Psychologist, 21*(3), 399 – 410.

Baillie, P. H. F., & Danish, S. J. (1992). Understanding the career transition of athletes. *The Sport Psychologist, 6*(1), 77 – 98.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191 – 215.

Bandura, A. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 5 –21.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Plenum Press.

Bandura, A., & Adams, N. E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive Therapy and Research, 1*(4), 287 – 310.

Bem, S. L. (1981). *Bem Role Sex Inventory: Manual.* Palo Alto, CA: Consulting Psychologist Press, Inc.

Bennion, L. D., & Adams, G. R. (1986). A revision of the extended version of the Objective Measure of Ego Identity Status: An identity instrument for use with late adolescents. *Journal of Adolescent Research, 1*(2), 183 – 197.

Bergandi, T. A., & Wittig, A. F. (1984). Availability of and attitudes toward counseling services for college athletes. *Journal of College Student Personnel, 25*, 557 – 558.

Betz, N. E. (2000). Self-efficacy theory as a basis for career assessment. *Journal of Career Assessment, 8*(3), 205 – 222.

Betz, N. E. (2001). Career self-efficacy. In F. T. L. Leong & A. Barak (Eds.), *Contemporary models in vocational psychology: A volume in honor of Samuel H. Osipow* (pp. 55 – 77). London: Lawrence Erlbaum Associates.

Betz, N. E., Klein, K., Taylor, K. M., Lopez, S. J., & Snyder, C. R. (2003). Career Decision-Making Self-Efficacy Scale Short Form. In S. J. Lopez and C. R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 109 – 126). Washington, DC: American Psychological Association.

Betz, N. E. & Taylor, K. (2001). *Manual for the Career Decision Self-Efficacy Scale and CDMSE – Short form.* Columbus, OH: Department of Psychology, Ohio State University.

Betz, N. E., & Voyten, K. K. (1997). Efficacy and outcome expectations influence career exploration and decidedness. *The Career Development Quarterly, 46*, 179-189.

Birnbaum, M. H. (2004). Human research and data collection via the internet. *Annual Review of Psychology, 55*, 803 – 832.

Blann, W. (1985). Intercollegiate athletic competition and students' educational and career plans. *Journal of College Student Personnel, 26*, 115 – 118.

Blinde, E. M. & Greendorfer, S. L. (1985). A reconceptualization of the process of leaving the role of competitive athlete. *International Review for Sociology of Sport, 20*, 87 – 93.

Blinde, E. M., & Stratta, T. M. (1992). The "sport career death" of college athletes: Involuntary and unanticipated sport exits. *Journal of Sport Behavior, 15*, 3 – 20.

Blustein, D., & Phillips, S. D. (1990). Relation between ego identity statuses and decision-making styles. *Journal of Counseling Psychology, 37*, 160 – 168.

Blustein, D. L., Devenis, L. E., & Kidney, B. A. (1989). Relationship between the identity formation process and career development. *Journal of Counseling Psychology, 36*(2), 196 – 202.

Bolton, W., & Oatley, K. (1987). A longitudinal study of social support and depression in unemployed men. *Psychological Medicine, 17*(2), 453-460.

Brammer, L. M. (1991). *How to cope with life transitions: The challenge of personal change.* Washington DC: Hemisphere.

Brammer, L. M. (1992). Coping with life transitions. *International Journal for the Advancement of Counseling, 15*, 239 – 253.

Brammer, L. M., & Abrego, P. J. (1981). Interventions strategies for coping with transitions. *The Counseling Psychologist, 9*(2), 19 – 36.

Brewer, B. W. (1993). Self-identity and specific vulnerability to depressed mood. *Journal of Personality, 61*(3), 343 – 364.

Brewer, B. W. (1994). Review and critique of models of psychological adjustment to athletic injury. *Journal of Applied Sport Psychology, 6*(1), 87-100.

Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles' heel? *International Journal of Sport Psychology, 24*, 237 – 254.

Brown, C., Glastetter-Fender, C., & Shelton, M. (2000). Psychological identity and career control in college student-athletes. *Journal of Vocational Behavior, 56*, 53 – 62.

Brown, C., & Hartley, D. L. (1998). Athletic identity and career maturity of male college student-athletes. *International Journal of Sport Psychology, 29*(1), 17 – 26.

Burke, M., & Mathews, A. (1992) Autobiographical memory and clinical anxiety. *Cognition and Emotion, 6* (1), 23 – 35.

Campbell, T., Gillaspy, J. R., & Thompson, B. (1997). The factor structure of the Bem Sex-Role Inventory (BSRI): Confirmation analysis of long and short forms. *Educational and Psychological Measurement, 57*(1), 118 – 124.

Canty-Mitchell, J. & Zimet, G.D. (2000). Psychometric properties of the Multidimensional Scale of Perceived Social Support in urban adolescents. *American Journal of Community Psychology, 28*, 391 – 400.

Carmen, L. R., Zerman, J. L., & Blaine, G. B. (1969). Use of Harvard psychiatric services by athletes and nonathletes. *Mental Hygiene, 52*, 134 – 137.

Caron, S. L., Carter, D. B., & Brightman, L. A. (1985). Sex-role orientation and attitudes towards women: Differences among college athletes and nonathletes. *Perceptual and Motor Skills, 61*(3), 803 – 806.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine, 4*(1), 92 – 100.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personal and Social Psychology, 56*, 267 – 283.

Chaney, D., Hammond, M., Betz, N., & Multon, K. (2007). The reliability and factor structure of the Career Decision Self-efficacy Scale- SF with African Americans. *Journal of Career Assessment, 15*, 194-205.

Chappell, J. N. (1987). Drug use and abuse in the athlete. In J. R. May & M. J. Asken (Eds.), *Sport psychology: The psychological health of the athlete* (pp.187 – 211). New York: PMA.

Chen, K., & Kandel, D. B. (1995). The natural history of drug use from adolescence to the mid-thirties in a general population sample. *American Journal of Public Health, 85*(1), 41 – 47.

Choi, N., & Fuqua, D. R. (2003). The structure of the Bem Sex Role Inventory: A summary report of 23 validation studies. *Educational and Psychological Measurement, 63*, 872–887.

Clara, I. P., Cox, B. J., Enns, M. W., Murray, L. T., Torgrudc, L. J. (2003). Confirmatory factor analysis of the Multidimensional Scale of Perceived Social Support in clinically distressed and student samples. *Journal of Personality Assessment, 81*, 265 – 270.

Clark, D. M., & Teasdale, J. D. (1982). Diurnal variation in clinical depression and accessibility of memories of positive and negative experiences. *Journal of Abnormal Psychology, 91*, 87 – 95.

Clews, G. J., & Gross, J. B. (1995). Individual and social motivation in Australian sport. In T. Morris & J. Summers (Eds.), *Sport psychology: Theory, application and issues* (pp. 90 – 121). New York: John Wiley & Sons.

Coakley, J. J. (1983). Leaving competitive sport: Retirement or rebirth? *Quest, 35*, 1 – 11.

Cockerill, I. M. (2005). They think it's all over, but it may not be! *British Journal of Sports Medicine, 39*, 880 – 882.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310 – 357.

Cokley, K., & Helm, K. (2001). Testing the construct validity of scores on the Multidimensional Inventory of Black Identity. *Measurement and Evaluation in Counseling and Development, 34*, 80 – 95.

Colley, A., Roberts, N., & Chipps, A. (1985). Sex-role identity, personality and participation in team and individual sports by males and female. *International Journal of Sport Psychology, 16*(2), 103 – 112.

Cornelius, A. (1995). The relationship between athletic identity, peer and faculty socialization, and college student development. *Journal of College Student Development, 36*(6), 560 – 573.

Craig, S. (1992). *Men, masculinity, and the media*. Thousand Oaks, CA: Sage Publications, Inc.

Crook, J. M., & Robertson, S. E. (1991). Transitions out of elite sport. *International Journal of Sport Psychology, 22*(2), 115 – 127.

Cross, W. E. (1991). *Shades of black: Diversity in African-American identity.* Philadelphia, PA: Temple University Press.

Curry, T. J. (1993). The effects of receiving a college letter on the sport identity. *Sociology of Sport Journal, 10*, 73 – 87.

Curtis, J., & Ennis, R. (1988). Negative consequences of leaving competitive sport? Comparison findings for former elite-level hockey players. *Sociology of Sport Journal, 5*(2), 87 – 106.

Dahlem, N., Zimet, G., & Walker, R. (1991). The Multidimensional Scale of Perceived Social Support: A confirmation study. *The Journal of Clinical Psychology, 41*, 756-761.

Danish, S. J. (1983). Musings about personal competence: The contributions of sport, health, and fitness. *American Journal of Community Psychology, 11*(3), 221 – 240.

Danish, S. J., Kleiber, D., & Hall, H. (1987). Developmental intervention and motivation enhancement in the context of sport. In M. L. Maehr & D. A. Kleiber (Eds.), *Advances in motivation and achievement: Vol. 5, Enhancing motivation.* (pp. 211 – 238). Greenwich, CT: JAI Press.

Dean, A., Lin, N., & Ensel, W. M. (1981). The epidemiological significance of social support systems in depression. In R. G. Simmons (Ed.), *Research in community and mental health: A research annual, Vol. 2* (pp. 77 – 109). Greenwich, CT: JAI Press.

Deaux, K. (1993). Reconstructing social identity. *Personality and Social Psychology Bulletin, 19*(1), 4-12.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Department of Health and Human Services. (1996). *Physical Activity and Health: A report of the Surgeon General.* Atlanta, Georgia: USDHSS, Centers for Disease Control and Prevention.

Dwyer, J. J. (1992). Internal structure of Participation Motivation Questionnaire completed by undergraduates. *Psychological Reports, 70*(1), 283 – 290.

Erpić, S. C., Wylleman, P., & Zupančić, M. (2004). The effect of athletic and non-athletic factors on the sports career termination process. *Psychology of Sport and Exercise, 5*, 45-59.

Erikson, E. H. (1959). The problem of ego identity. *Psychological Issues, 1*, 101 – 171.

Erikson, E. (1968). *Identity: Youth and crisis.* New York: W. W. Norton & Company.

Evans, M., Weinberg, R., & Jackson, A. (1992). Psychological factors related to drug use in college athletes. *The Sport Psychologist, 6,* 24 – 41.

Ferrante, A. & Etzel, E. (1991). Counseling college student-athletes: The problem, the need. In E. Etzel, A. Ferrante & J. Pinkey (Eds.) *Counseling college student athletes: Issues and interventions* (pp. 8 – 28). Morgantown: WV: Fitness Information Technology.

Flood, S. E., & Hellstedt, J. C. (1991). Gender differences in motivation for intercollegiate athletic participation. *Journal of Sport Behavior, 14*(3), 159 - 167.

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 25*, 372 – 393.

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: A study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology, 48*(1), 150 – 170.

Gill, D. L., Gross, J. B., & Huddleston, S. (1983). Participation motivation in youth sports. *International Journal of Sport Psychology, 14*, 1-14.

Gloria, A. M., & Hird, J. S. (1999). Influences of ethnic and nonethnic variables on the career decision-making self-efficacy of college students, *Career Development Quarterly, 48*(2), 157-174.

Good, A. J., Brewer, B. W., Petitpas, A. J., Van Raalte, J. L., & Mahar, M. T. (1993, Spring). Identity foreclosure, athletic identity, and college sport participation. *The Academic Athletic Journal,* 1 – 12.

Gordon, S. (1995). Career transitions in competitive sport. In T. Morris & J. Summers (Eds.), *Sport psychology: Theory, applications and issues* (pp. 474 – 501). Brisbane: Jacaranda Wiley.

Gould, D., Feltz, D., & Weiss, M. (1981). *Objectives for participating in competitive youth swimming.* Unpublished paper, Michigan Sate University.

Gould, D., Feltz, D., & Weiss, M. (1985). Motives for participating in competitive youth swimming. *International Journal of Sport Psychology, 16*(2), 126-140.

Greendorfer, S. L. & Blinde, E. M. (1985). "Retirement" from intercollegiate sport: Theoretical and empirical considerations. *Sociology of Sport Journal, 2*(2), 101 – 110.

Greenspan, M., & Anderson, M. (1995). Providing psychological services to student-athletes: A developmental psychology model. In S. Murphy (Ed.), *Sport psychology interventions* (pp. 177 – 191). Champaign, IL: Human Kinetics.

Grove, J. R., Lavalle, D., & Gordon, S. (1997). Coping with retirement from sport: The influence of athletic identity. *Journal of Applied Sport Psychology, 9*(2), 191 – 203.

Harris, D. S., & Eitzen, D. S. (1978). The consequences of failure in sport. *Urban Life, 7*(2), 177 – 188.

Haerle, R. (1975). Career patterns and career contingencies of profession baseball players: An occupational analysis. In D. Ball & J. Loy (Eds.), *Sport and social order* (pp. 457 – 511). Reading, MA: Addison-Wesley.

Haworth, J. (Ed.). (1996). *Psychological research: Innovative methods and strategies.* New York: Routledge.

Hayes, J.A., & Mahalik, J.R. (2000). Gender role conflict and psychological distress in male counseling center clients. *Psychology of Men and Masculinity, 1*(2), 116–125.

Helms, J. E. (1990). *Black and White racial identity: Theory, research, and practice.* Westport, CT: Greenwood Press.

Helms, J. E. (1993). Introduction: Review of racial identity terminology. In J. E. Helms (Ed.), *Black and White racial identity: Theory, research and practice* (pp. 3 – 8). Westport, CN: Praeger.

Heyman, S. R. (1986). Psychological problem patterns found with athletes. *The Clinical Psychologist, 39,* 68 – 71.

Hildebrand, K. M., Johnson, D. J., & Bogel, K. (2001). Comparison of patterns of alcohol use between high school and college athletes and non-athletes. *College Student Journal, 35*(3), 358 – 365.

Hoffman, R., & Borders, L. D. (2001). Twenty-five after the Bem Sex-Role Inventory: A reassessment and new issues regarding classification variability. *Measurement and Evaluation in Counseling and Development, 34*, 39 – 55.

Hopson, B. (1981). Response to papers by Schlossberg, Brammer and Abrego. *The Counseling Psychologist, 9*(2), 36 – 39.

Houseworth, S., Peplow, K., & Thirer, J. (1989). Influence of sport participation upon sex role orientation of Caucasian males and their attitudes toward women. *Sex Roles, 20*(5/6), 317 – 325.

Hu, L. T., & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1 – 55.

Hull, J. G., & Bond, C. F. (1986). Social and behavioral consequences of alcohol consumption and expectancy: A meta-analysis. *Psychological Bulletin, 99*(3), 347 – 360.

Humphrey, J. H., Yow, D. A., & Bowden, W. W. (2000). *Stress in college athletics: Causes, consequences, coping.* New York: The Haworth Half-Court Press.

Jackson, J. S., Keiper, S., Brown, K. T., Brown, T. N., & Manuel, W. (2002). Athletic identity, racial attitudes, and aggression in first-year Black and White intercollegiate athletes. In M. Gatz, M. A. Messner, & S. J. Ball-Rokeach (Eds.), *Paradoxes of Youth and Sport* (pp. 159 – 172). New York: State University of New York Press.

Jay, G. M., & D'Augelli, A. R. (1991). Social support and adjustment to university life: A comparison of African-American and White freshmen. *Journal of Community Psychology, 19*(2), 95-108.

Kasl, S. V., Gore, S., & Cobb, S. (1975). The experience of losing a job: Reported changes in health, symptoms and illness behavior. *Psychosomatic Medicine, 37*(2), 106 – 122.

Kennedy, S. R., & Dimick, K. M. (1987). Career maturity and professional sports expectations of college football and basketball players. *Journal of College Sport Personnel, 28*, 293 – 297.

Kessler R. C., Chiu W. T., Demler O., & Walters, E.E. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry, 62*(6), 617 – 627.

Kessler, R. C., Turner, J. B., & House, J. S. (1988). Effects of unemployment on health in a community survey: Main, modifying, and mediating effects. *Journal of Social Issues, 44* (4), 69-85

Kiecolt, K. J., & Mabry, J. B. (2000). Agency in young adulthood: Intentional self-change among college students. In T. J. Owens (Ed.), *Self and identity through the life course in cross-cultural perspective* (pp181 – 205). Stamford, CT: JAI Press.

Kleiber, D. A. & Brock, S.C. (1992). The effect of career-ending injuries on the subsequent well-being of elite college athletes. *Sociology of Sport Journal, 8*, 307 – 325.

Kleiber, D. A., Greendorfer, S., Blinde, E., & Samdahl, D. (1987). Quality of exit from university sports and life satisfaction in early adulthood. *Sociology of Sport Journal, 4*(1), 28 – 36.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guildford Press.

Kornspan, A. S., & Etzel, E. F. (2001). The relationship of demographic and psychological variables to career maturity of junior college student-athletes. *Journal of College Student Development, 42*(2), 122 – 132.

Lally, P. (2007). Identity and athletic retirement: A prospective study. *Psychology of Sport and Exercise, 8*, 85 – 99.

Lantz, C. D., & Schroeder. P. J. (1999). Endorsement of masculine and feminine gender roles: differences between participation in and identification with the athletic role. *Journal of Sport Behavior, 22*(4), 545 – 557.

Lavallee, D., Gordon, S., & Grove, J. R. (1997). Retirement from sport and the loss of athletic identity. *Journal of Personal and Interpersonal Loss, 2*, 129 – 147.

Lavallee, D., Nesti, M., Borkoles, E., Cockerill, I., & Edge, A. (2000). Intervention strategies for athletes in transition. In D. Lavallee & P. Wylleman (Eds.), *Career transition in sport: International perspectives* (pp. 207 – 258). Morgantown, WV: Fitness Information Technology.

Lazarus, R. S. (1974). Psychology of coping: Issues of research and assessment. In G. V. Coelho, D. A. Hamburg, J. E. Hamburg & J. E. Adams (Eds.), *Coping and adaptation* (pp. 47 – 68). New York: Basic Books.

Leichliter, J., Meilman, P., Presley, C., & Cashin, J. (1998). Alcohol use and related consequences among college students with varying levels of involvement in college athletics. *Journal of College Health, 46*, 257 – 262.

Linville, P. W. (1985). Self-complexity and affect extremity: Don't put all your eggs in one cognitive basket. *Social Cognition, 3*(1), 94 – 120.

Luzzo, D. A. (1993). Value of career decision-making self-efficacy in predicting career decision making and skills. *Journal of Counseling Psychology, 40*, 194 – 199.

Luzzo, D. A. (1995). The relative contributions of self-efficacy and locus of control to the prediction of career maturity. *Journal of College Student Development, 36*(1), 61 – 66.

Mahalik, J. R., & Cournoyer, R. J. (2000). Identifying gender role conflict messages that distinguish mildly depressed from nondepressed men. *Psychology of Men & Masculinity, 1*, 109-115.

Marcello, R. J., Danish, S. J., Stolberg, A. L. (1989). An evaluation of strategies developed to prevent substance abuse among student-athletes. *The Sport Psychologist, 3*, 196 – 211.

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*, 551 – 558.

Martens, M. P. (2005). Future directions of structural equation modeling in counseling psychology. *The Counseling Psychologist, 33*(3), 375 – 382.

Martens, M. P., & Cox, R. H. (2000). Career development in college varsity athletes. *Journal of College Student Development, 41*(2), 172 – 180.

Martens, M. P., Dams-O'Connor, K., & Beck, N. C. (2006). A systematic review of college student-athlete drinking: Prevalence rates, sport-related factors, and interventions. *Journal of Substance Abuse Treatment, 31*, 305 – 316.

Martin, B. A., & Martin, J. H. (1995). Comparing perceived sex role orientations of the ideal male and female athlete to the ideal male and female person. *Journal of Sport Behavior, 18*(4), 286 – 301.

Mayo Clinical Staff (2007). *Depression and Anxiety: Exercise Eases Symptoms.* Retrieved August 15, 2008, from www.mayoclinic.com/health/depression-and-exercise/MH00043

McClendon, M. J. (1974). Interracial contact and the reduction of prejudice. *Sociological Focus, 7*, 47 – 65.

McGuire, R. (1990). Athletes at risk. In R. Tricker & D. L Cook (Eds.), *Athletes at risk: Drugs and sport* (pp. 1 – 14). Dubuque, IA: Wm C Brown.

McPherson, B. D. (1980). Retirement from professional sport: The process and problems of occupational and psychological adjustment. *Sociological Symposium, 30*, 126 – 143.

Meichenbaum, D. (1996). Stress inoculation training for coping with stressors. *The Clinical Psychologist, 49*, 4 – 7.

Messner, M. A. (1992). *Power at play: Sports and the problem of masculinity.* Boston: Beacon Press.

Mihovilovic, M. (1968). The status of former sportsmen. *International Review of Sport Sociology, 3*, 73 – 93.

Moos, R. H., & Tsu, V. (1976). Human competence and coping: An overview. In R. H. Moos (Ed.), *Human adaptation: Coping with life crises* (pp. 3 – 16). Lexington, MA: Heath.

Morey, L.C. (1991). *Personality Assessment Inventory - Professional Manual.* Lutz, FL: Psychological Assessment Resources, Inc.

Morgan, T. K., & Giacobbi, P. R. (2006). Toward two grounded theories of the talent development and social support process of highly successful collegiate athletes. *The Sport Psychologist, 20*, 295 – 313.

Muczko, J. P. (1993). Career maturity and professional opportunity of college football seniors. In J. W. Miller (Ed.), *Students at risk: Pitfalls and promising plans* (pp. 145 – 158). Dubuque, Iowa: Wm. C. Brown Communications.

Murphy, G. M., Petitpas, A. J., & Brewer, B. W. (1996). Identity foreclosure, athletic identity, and career maturity in intercollegiate athletics. *The Sport Psychologist, 10*, 239 – 246.

Murphy, S. M. (1995). Transitions in competitive sport: Maximizing individual potential. In S. M. Murphy (Ed.), *Sport psychology interventions* (pp. 331 – 346). Champaign, IL: Human Kinetics.

National Collegiate Athletic Association (2004, August). *A career in professional athletics: A guide for making the transition.* Indianapolis, IN: NCAA Publications.

National Collegiate Athletic Association (2007). *1999-00 – 2005-06 NCAA Student-Athlete Race and Ethnicity Report.* Indianapolis, IN: NCAA Publications.

National Collegiate Athletic Association (2007, October). *NCAA research related to graduation rates of Division I student-athletes 1984 – 2000.* Retrieved August 22, 2008, from http://www2.ncaa.org/portal/academics_and_athletes/education_and_research/academic_reform/grad_rate/2007/d1_summary.pdf

Nattiv, A., & Puffer, J. C. (1991). Lifestyle and health risks of collegiate athletes. *The Journal of Family Practice, 33,* 585 – 590.

Nattiv, A., Puffer, J. C., & Green, G. A. (1997). Lifestyles and health risks of collegiate athletes: A multi-center study. *Clinical Journal of Sport Medicine, 7*, 262 – 272.

Nelson, E. S. (1983). How the myth of the dumb jock becomes fact: A developmental view for counselors. *Counseling and Values, 27*(3), 176 – 185.

Nelson, T. F., & Wechsler, H. (2001). Alcohol and college athletes. *Medicine and Science in Sport and Exercise, 33*(1), 43 – 47.

Nicholi, A. M. (1983). The college student and marijuana: Research finding concerning adverse biological and psychological effects. *College Health, 32*, 73 – 77.

Ogilvie, B. C., & Howe, M. (1982). Career crisis in sport. In T. Orlick, J. T. Partington & J. H. Salmela (Eds.), *Mental training for coaches and athletes.* (pp. 176 – 183). Ottawa, Ontario: Sport in Perspective Inc.

Ogilvie, B. C., & Howe, M. (1986). The trauma of termination from athletics. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (pp. 365 – 382). Palo Alto, CA: Mayfield Publishing Company.

Ogilvie, B. C., Morgan, W. P., Pierce, C. M., Marcotte, D. B., & Ryan, A. J. (1981). The emotionally disturbed athlete: A roundtable. *The Physician and Sportmedicine, 9*(7), 68 – 80.

O'Neil, J.M. (2008). Summarizing 25 years of research on men's gender role conflict using the Gender Role Conflict Scale: New research paradigms and clinical implications. *The Counseling Psychologist, 36*, 358 – 445.

Overman, S. J., & Terry, T. (1991). Alcohol use and attitudes: A comparison of college athletes and non-athletes. *Journal of Alcohol and Drug Education, 21*(2), 107 – 117.

Parham, W. D. (1993). The intercollegiate athlete: A 1990s profile. *The Counseling Psychologist, 21*(3), 411 – 429.

Pearson, R., & Petitpas, A. (1990). Transitions of athletes: Developmental and preventive perspectives. *Journal of Counseling and Development, 69*, 7 – 10.

Perna, F. M., Ahlgren, R. L., & Zaichkowsky, L. (1999). The influence of career planning, race, and athletic injury on life satisfaction among recently retired collegiate male athletes. *The Sport Psychologist, 13*, 144 – 156.

Perna, F. M., Zaichkowsky, L., & Bocknek, G. (1996). The association of mentoring with psychosocial development among male athletes at termination of college career. *Journal of Applied Sport Psychology, 8*(1), 76 – 88.

Peters, C., & Enders, C. (2002). A primer for the estimation of structural equation models in the presence of missing data. *Journal of Targeting, Measurement and Analysis for Marketing, 11*, 81 – 95.

Peugh, J. L., & Enders, C. K. (2004). Missing data in educational research: A review of reporting practices and suggestions for improvement. *Review of Educational Research, 74*(4), 525 – 556.

Petitpas, A. J., & Champagne, D. E. (1988). Developmental programming for intercollegiate athletes. *Journal of College Student Development, 29*(5), 454–460.

Pinkerton, R. S., Hinz, L. D., & Barrow, J. C. (1989). The college student-athlete: Psychological considerations and interventions. *Journal of American College Health, 37*(5), 218 – 226.

Pleck, J. H. (1995). The gender role strain paradigm: An update. In R. F. Levant & W. S. Pollack (Eds.), *A new psychology of men* (pp. 11 – 32). New York: Basic Books.

Procidano, M. E., & Heller, K. (1986). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of Community Psychology, 11*(1), 1-24.

Quimby, J. L., & O'Brien, K. M. (2004). Predictors of student and career decision-making self-efficacy among nontraditional college women. *Career Development Quarterly, 52*(4), 323 – 339.

Roberts-Wilbur, J. R., Wilbur, M., & Morris, J. R. (1987, Spring). The freshman athlete's transition: Athletic and academic stressors. *Academic Athletic Journal*, 23 – 32.

Rockafellow, B. D., & Saules, K. K. (2006). Substance use in college students: The role of intrinsic versus extrinsic motivation for athletic involvement. *Psychology of Addictive Behaviors, 20*(3), 279 – 287.

Rosenberg, E. (1981). Gerontological theory and athletic retirement. In S. L. Greendorfer & A. Yiannakis (Eds.), *Sociology of sport: Diverse perspectives* (pp. 118 – 126). West Pont: NY: Leisure Press.

Rosenberg, E. (1982). Athletic retirement as a social death: concepts and perspectives. In N. Theberge & P. Donnelly (Eds.), *Sport and the sociological imagination.* (pp. 245 – 258). Fort Worth, TX: Texan Christian University Press.

Rosenfeld, L. B., Richman, J. M., & Hardy, C. J. (1989). Examining social support networks among athletes: Descriptions and relationship to stress. *The Sport Psychologist, 3,* 23 – 33.

Rowley, S. J., Sellers, R. M., Chavous, T. S., & Smith, M. A. (1998). The relationship between racial identity and self-esteem in African American college and high school students. *Journal of Personality and Social Psychology, 74*(3), 715 – 724.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Sabo, D. F., & Runfola, R. (1980) *Jock: Sports and male identity.* Englewood Cliffs, NJ: Prentice-Hall, Inc.

Savickas, M. L. (1984). Career maturity: The construct and its measurement. *Vocational Guidance Quarterly, 32*(4), 222 – 231.

Schlossberg, N. K. (1981). A model for analyzing human adaptation to transition. *The Counseling Psychologist, 9*(2), 2 – 18.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323 – 337.

Schulenberg, J., Wadsworth, K., O'Malley, P., Bachman, J., & Johnston, L. (1996). Adolescent risk factors for binge drinking during the transition to young adulthood: Variable- and pattern-centered approaches to change. *Developmental Psychology, 32*, 659 – 674.

Schwartz, S. J. (2002). Convergent validity in objective measures of identity status: Implications for identity status theory. *Adolescence, 37*, 609 – 626.

Sellers, R. M., Caldwell, C. H., Schmeelk-Cone, K. H., & Zimmerman, M. A. (2003). Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. *Journal of Health and Social Behavior, 44*(3), 302 – 317.

Sellers, R. M., & Damas, A. (1996). The African-American student-athlete experience. In E. Etzel, A. Ferrante & J. Pinkey (Eds.), *Counseling college student athletes: Issues and interventions* (pp. 55 – 76). Morgantown: WV: Fitness Information Technology.

Sellers, R. M., Kuperminc, G. P., & Waddell, A. S. (1991). Life experiences of Black student-athletes in revenue producing sports: A descriptive empirical analysis. *Academic Athletic Journal, Fall*, 21 – 38.

Sellers, R. M., Rowley, S. A. J., Chavous, T. M., Shelton, J. N., & Smith, M. A. (1997). Multidimensional Inventory of Black Identity: A preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology, 73*(4), 805-815.

Sellers, R. M., Smith, M. A., Shelton, J. N., Rowley, S. A., & Chavous, T. M. (1998). Multidimensional model of racial identity: A reconceptualization of African American racial identity. *Personality and Social Psychology Review, 2*(1), 18 – 39.

Settles, I. H., Sellers, R. M., & Damas, A. (2002). One role or two? The function of psychological separation in role conflict. *Journal of Applied Psychology, 87*(3), 574 – 582.

Shumaker, S. A., & Brownell, A. (1984). Toward a theory of social support: Closing conceptual gaps. *Journal of Social Issues, 40*, 11 – 36.

Shurts, W. M., & Shoffner, M. F. (2004). Providing career counseling for collegiate student-athletes: A learning theory approach. *Journal of Career Development, 31*(2), 95 – 109.

Sinclair, D. A., & Orlick, T. (1993). Positive transitions from high-performance sport. *The Sport Psychologist, 7*, 138 – 150.

Sinclair, D. A., & Orlick, T. (1994). The effects of transition on high performance sport. In D. Hackfort (Ed.), *Psycho-social issues and interventions in elite sports* (pp. 29 – 55). Frankfurt: Lang.

Smallman, E., & Sowa, C. (1996). Career maturity levels of male intercollegiate varsity athletes. *Career Development Quarterly, 44*(3), 270 – 278.

Snyder, E. E., & Baer, L. L. (1979). A profile of former collegiate athletes and non-athletes: Leisure activities, attitudes toward work, and aspects of satisfaction with life. *Journal of Sport Behavior, 2*(4), 211 – 219.

Sowa, C. J., & Gressard, C. F. (1983). Athletic participation: Its relationship to student development. *Journal of College Student Personnel, 24*(3), 236 – 239.

Spady, W. G. (1970). Lament for the letterman: Effects of peer status and extracurricular activities on goals and achievement. *American Journal of Sociology, 75*(4), 680 – 702.

SPSS Inc. (2006). *SPSS 15.0 Base User's Guide.* Chicago, IL: Prentice Hall.

Stankovich, C. E., Meeker, D. J., & Henderson, J. L. (2001). The Positive Transition Model for sport retirement. *Journal of College Counseling, 4*, 81 – 84.

Stein, P. J., & Hoffman, S. (1980), Sport and male role strain. In D. F. Sabo & R. Runfola (Eds.) *Jock: Sports and male identity* (pp 53 – 74). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Steinfeldt, J., & Steinfeldt. M. C. (2008). *Racial and athletic identity of African American football players at HBCU and PWI.* Manuscript submitted for publication.

Stephan, Y., Bilard, J., Ninot, G., & Delignières, D. (2003). Repercussions of transition out of elite sport on subjective well-being: A one-year study. *Journal of Applied Sport Psychology, 15*, 354-371.

Stephan, Y., Bilard, J., Ninot, G., & Delignières, D. (2003). Bodily transition out of elite sport: A one-year study of physical self and global self-esteem among transitional athletes. *International Journal of Sport and Exercise Psychology, 2*, 192 – 207.

Stephan, Y., Torregrosa, M., & Sanchez, X. (2007). The body matters: Psychophysical impact of retiring from elite sport. *Psychology and Sport and Exercise, 8*, 73 – 83.

Stone, J., & Strange, C., (1989). Quality of student experiences of freshmen intercollegiate football players. *Journal of College Student Personnel, 26*, 124 – 129.

Storch, E. A., Storch, J. B., Killiany, E. M., & Roberti, J. W. (2005). Self-reported psychopathology in athletes: A comparison of intercollegiate student-athletes and non-athletes, *Journal of Sport Behavior, 28*(1), 86 – 98.

Stryker, S. (1980). *Symbolic internationalism: A social structural version*. Menlo Park, CA: Benjamin/Cummings Publishing Company.

Stryker, S. & Serpe, R. T. (1982). Commitment, identity salience, and role behavior: theory and research example. In W. Ickes & E. S. Knowles (Eds.), *Personality, roles, and social behavior* (pp. 199 – 218). New York: Springer-Verlag.

Svoboda, B., & Vanek, M. (1982). Retirement from high level competition. In T. Orlick, J. Parthington, & J. Samela (Eds.), *Mental training for coaches and athletes* (pp. 166 – 175). Ottowa, ON: Coaching Association of Canada and Sport in Perspective, Inc.

Stambulova, N., Stephan, Y., & Jäphag, U. (2007). Athletic retirement: A cross-national comparison of elite French and Swedish athletes. *Psychology of Sport and Exercise, 8*, 101 – 118.

Swift, A., & Wright, M. O. (2000). Does social support buffer stress for college women: When and how? *Journal of College Student Psychotherapy, 14*(4), 23 – 42.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics (5th ed.)*. Boston: Pearson Education, Inc.

Taylor, J. Ogilvie, B. & Lavallee, D. (2006). Career transition among athletes: Is there life after sports? In J. M. Williams (Ed.), *Applied Sport Psychology* (pp.595 – 615). New York: McGraw-Hill.

Taylor, J., & Ogilvie, B. C. (1994). A conceptual model of adaptation to retirement among athletes. *Journal of Applied Sport Psychology, 6*, 1 – 20.

Taylor, K. M., & Pompa, J. (1990). An examination of the relationship among career decision-making self-efficacy, career salience, locus of control, and vocational indecision. *Journal of Vocational Behavior, 37*, 17 – 31.

Thoits, P. A. (1983). Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review, 48*(2), 174 – 187.

Torregrosa, M., Boixadós, M., Valiente, L., & Cruz, J. (2004). Elite athletes' image of retirement: The way to relocation in sport. *Psychology of Sport and Exercise, 5*, 35 – 43.

Tricker, R., Cook, D. L., & McGuire, R. (1989). Issues related to drug abuse in college athletics: Athletes at risk. *Sport Psychologist, 3*(2), 155 – 165.

Turner, J. B., Kessler, R. C., & House, J. S. (1991). Factors facilitating adjustment to unemployment: Implications for intervention. *American Journal of Community Psychology, 19*(4), 521-542.

Turner R. J. (1983). Direct, indirect and moderating effects of social support on psychological distress and associated conditions. In H. B. Kaplan (Ed.), *Psychosocial stress: Trends in theory and research* (pp. 105 – 155). New York: Academic Press.

Ullman, J. B. (2007). Structural Equation Modeling. In B. G. Tabachnick & L. S. Fidell (Eds.), *Using Multivariate Statistics* (5th ed., pp. 676 – 780). Boston: Pearson Education, Inc.

Ungerleider, S. (1997). Olympic athletes' transition from sport to workplace. *Perceptual and Motor Skills, 84*, 1287 – 1295.

Vogel, D.L., Wade, N. G., & Hackler, A. H. (2007). Perceived public stigma and the willingness to seek counseling: The mediating roles of self-stigma and attitudes toward counseling. *Journal of Counseling Psychology, 54*(1), 40 – 50.

Webb, W. M., Nasco, S. A., Riley, S., & Headrick, B. (1998). Athlete identity and reactions to retirement from sports. *Journal of Sport Behavior, 21*(3), 338 – 362.

Wechsler, H., Davenport, A. E., Dowdall, G. W., Grossman, S. J., & Zanakos, S. I. (1997). Binge drinking, tobacco, and illicit drug use and involvement in college athletics. *Journal of American College Health, 45*(5), 195-200.

Werthner, P. & Orlick, T. (1986). Retirement experiences of successful Olympic athletes. *International Journal of Sport Psychology, 17*, 337 – 363.

Wiese-Bjornstal,D. M., Smith, A. M., Shaffer, S. M., & Morrey, M. A. (1998). An integrated model of response to sport injury: Psychological and sociological dynamics. *Journal of Applied Sport Psychology, 10*(1), 46 – 69.

Wittmer, J., Bostic, D., Philips, T., & Waters, W. (1981). The personal, academic, and career problems of college student athletes: Some possible answers. *Personnel and Guidance Journal, 60*(1), 52 – 55.

Wolff, R., & Lester, D. (1989). A theoretical basis for counseling the retired professional athlete. *Psychological Reports, 64,* 1043 – 1046.

Wotten, H. R. (1994). Cutting losses for student-athletes in transition: An integrative transition model. *Journal of Employment Counseling, 31*(1), 2 – 9.

Yang, J., Peek-Asa, C., Corlette, J. D., Cheng, G., Foster, D. T., & Albright, J. (2007). Prevalence of risk factors associated with symptoms of depression in competitive collegiate student athletes. *Clinical Journal of Sport Medicine, 17*(6), 481 – 487.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*, 30 – 41.

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric properties of the multidimensional scale of perceived social support. *Journal of Personality Assessment, 55*, 610–617.