

12-2010

Campus Recreation Program Involvement, Athletic Identity, Transitional Loss and Life Satisfaction in Former High School Athletes

Katie E. Helms

University of Arkansas, Fayetteville

Follow this and additional works at: <http://scholarworks.uark.edu/etd>

 Part of the [Sports Management Commons](#), and the [Sports Studies Commons](#)

Recommended Citation

Helms, Katie E., "Campus Recreation Program Involvement, Athletic Identity, Transitional Loss and Life Satisfaction in Former High School Athletes" (2010). *Theses and Dissertations*. 60.

<http://scholarworks.uark.edu/etd/60>

This Dissertation is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of ScholarWorks@UARK. For more information, please contact scholar@uark.edu, ccmiddle@uark.edu.

CAMPUS RECREATION PROGRAM INVOLVEMENT, ATHLETIC
IDENTITY, TRANSITIONAL LOSS AND LIFE SATISFACTION IN FORMER
HIGH SCHOOL ATHLETES

CAMPUS RECREATION PROGRAM INVOLVEMENT, ATHLETIC
IDENTITY, TRANSITIONAL LOSS AND LIFE SATISFACTION IN FORMER
HIGH SCHOOL ATHLETES

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education in Recreation and Sport Management

By

Katie E. Helms
Hendrix College
Bachelor of Arts in Psychology, 1999
University of Arkansas
Master of Education in Recreation, 2001

December 2010
University of Arkansas

ABSTRACT

Sports participation can result in strong associations with the athlete role for participants. While strong athletic identity can have positive implications, it can also create vulnerability to emotional difficulty following exit from sport (Brewer, 1993). Exit from sport is inevitable, resulting from a wide range of sources such as injury, aging, de-selection, or not qualifying to participate at a certain skill level. Despite a large proportion of high school students who play sports, there is little opportunity for continuation at the college level. This discrepancy often results in significant transitional loss resulting from exhausted athletic eligibility. The current study examines campus recreation programs within college campuses as potential resources for positive adjustment following such role exits.

The current study utilized the Athletic Identity Measurement Scale (AIMS), Loss in Sport Survey (LISS), Recreational Sports Involvement Index, and Satisfaction With Life Scale (SWLS) to examine the instance of transitional loss after termination of high school athletic careers, as well as the roles of athletic identity and transitional loss within the relationship between campus recreation and subjective well-being.

Results of a multiple regression analysis supported previous literature indicating a positive relationship between athletic identity and feelings of loss, and suggested that athletic identity and the wish to continue in the varsity athlete role are the most predictive of transitional loss. A t-test indicated that those with high involvement in competitive recreational sports activities had greater transitional

loss levels than those with low involvement. Finally, factorial ANOVA results suggested a main effect of recreational sports involvement on the outcome variable of life satisfaction, as well as an interaction effect between recreational sports involvement and loss levels on the outcome variable of life satisfaction. Specifically, among those with high loss levels, high recreational sports involvement was associated with greater life satisfaction scores.

Results have implications regarding the identification of methods that can be utilized for positive adjustment following a sport exit. In addition, results provide additional support for the use of campus recreation programs as valuable student development resources that can aid in adjustment and student success in college.

This dissertation is approved for
Recommendation to the
Graduate Council

Dissertation Director:

Dr. Merry L. Moiseichik

Dissertation Committee:

Dr. Stephen W. Dittmore

Dr. Jean Henry

Dr. Daniel B. Kissinger

DISSERTATION DUPLICATION RELEASE

I hereby authorize the University of Arkansas Libraries to duplicate this dissertation when needed for research and/or scholarship.

Agreed

Katie E. Helms

Refused

Katie E. Helms

ACKNOWLEDGEMENTS

A dissertation may reflect the interests of one person, but the work and support of many more. I am humbled and honored to receive such worthy inspiration, help, and encouragement from faculty, co-workers, friends, and family.

I would first like to thank the faculty at the University of Arkansas who helped to foster academic growth during my degree completion, as well as a love of learning and teaching. Particularly, I would like to thank the committee members who took the time and effort to support and refine my ideas and processes. I would like to extend a special thanks to Dr. Merry Moiseichik, my advisor, who has spent many, many hours brainstorming, discussing, editing, and otherwise encouraging my efforts well beyond what is reflected in a faculty workload. Dr. Moiseichik has taught me that while the sum of such efforts is great, the whole of them can be greater.

I would also like to thank my peers, co-workers, and friends in the Intramural/Recreational Sports Department at the University of Arkansas. Your support over the last several years has been invaluable. I have received nothing but the highest praise and encouragement throughout this process, and I am honored to work as a part of this staff. I continue to be truly inspired by the work that we do.

Finally, I would like to thank my family, particularly my parents, Allen and Rhoda. My gratitude, as their love and support through this and so many other things, is never-ending.

TABLE OF CONTENTS

List of Tables	ix
List of Figures	x
Chapter 1: Introduction	1
Statement of the Problem.....	4
Purpose of the Study	4
Statement of Hypotheses.....	5
Significance of the Study	8
Definition of Terms.....	9
Limitations	10
Delimitations.....	11
Chapter 2: Review of Literature	13
Athletic Identity Formation.....	13
Transitional Loss in Sport.....	15
Specific Vulnerability to Difficulty Associated with Loss in Sport	18
Adjustment and Coping with Sport Role Transitions	25
Campus Recreation and Self-Development	29
Campus Recreation as a Potential Sport-Loss Coping Method	32
Chapter 3: Methods.....	36
Sample.....	37
Test Instruments.....	37
Athletic Identity Measurement Scale.....	37
Satisfaction With Life Scale	38
Loss in Sport Survey.....	43
Recreational Sports Involvement Index.....	43
Procedure	44
Data Analysis	45
Chapter 4: Results	49
Response Rate.....	50
Descriptive Analysis of Variables	51
Descriptive Analysis of Test Instruments	56
Hypothesis One.....	60
Hypothesis Two	60
Hypothesis Three	66
Hypothesis Four	67
Chapter 5: Discussion, Conclusions, and Recommendations	74
Summary of Procedures.....	74
Summary of Findings.....	74

Athletic Identity and Transitional Loss.....	80
Recreational Sports Involvement.....	83
Implications for Campus Recreation	86
Recommendations for Further Study.....	90
References.....	94
Appendix A: Athletic Identity Measurement Scale.....	100
Appendix B: Satisfaction With Life Scale.....	101
Appendix C: Loss in Sport Survey	102
Appendix D: Recreational Sports Involvement Index.....	103
Appendix E: Recreational Sports Involvement Index Scoring Scale	105
Appendix F: Demographic Questionnaire	106
Appendix G: IRB Approval Form	107
Appendix H: Survey Notification, Delivery, and Reminder Scripts	108

LIST OF TABLES

Table 1: Mean Scores, Standard Deviations, and Coefficient Alpha Estimates for Loss in Sport Survey Items.....	41
Table 2: Rotated Factor Pattern and Final Community Estimates from Principal Component Analysis of Loss in Sport Survey.....	42
Table 3: Frequency Distribution of Sport Type.....	52
Table 4: Frequency Distribution of Number of Sports Played	53
Table 5: Frequency Distribution of Number of Years Played	53
Table 6: Means and Standard Deviations for Choice and Desire in Playing College Varsity Sports.....	55
Table 7: Means and Standard Deviations for Study Instruments	59
Table 8: Means, Standard Deviations, and Intercorrelations of Predictor Variables.....	62
Table 9: Eigenvalues and Condition Indices for Regression Predictor Variables	64
Table 10: Beta Weights and Uniqueness Indices in Multiple Regression Analysis Predicting Loss.....	65
Table 11: T-Test Summary Table for Loss by Involvement Level	67
Table 12: Least Squares means for Life Satisfaction Scores Within ANOVA Cells	69
Table 13: ANOVA Summary Table for the Relationship Between Recreational Sports Involvement (A), Transitional Loss (B), and Life Satisfaction	71

LIST OF FIGURES

Figure 1: Proposed Relationship Between Study Variables	7
Figure 2: Mean Life Satisfaction Scores as a Function of Recreational Sports Involvement Level and Transitional Loss Level	73
Figure 3: Proposed Relationship Between Study Variables	77

CHAPTER ONE

Introduction

Sports participation is a popular and highly visible component of culture, society, and leisure in the United States. Among selected recreational and sports activities, over 35% of Americans over age 7 participate in running, 38% in hiking, 15% in soccer, and 12% in tennis (National Sporting Goods Association, 2008). Overall participation rates in organized youth sports for children age 7-18 such as football, soccer, and softball have increased over 9% in the last 10 years (National Sporting Goods Association, 2007).

Athletics are one of the most common extracurricular activities offered in school settings. The National Federation of State High School Athletic Associations (2009) estimates that 55% of high school students participate in athletics. There are many positive implications for sport participation within a school setting. Bailey (2006) describes not only direct benefits regarding physical competences, but indirect developmental benefits in the social, cognitive, and affective areas as well.

The recognition of one's self as an athlete is of high importance to many participants in relevant sports, recreation, and fitness activities. In fact, the role of "athlete" can be regarded as a distinct and measurable component of individual identity. Brewer, Van Raalte, and Linder (1993) distinguish athletic identity as a distinct cognitive structure, or self-schema that helps individuals process, contextualize, and interpret information about the self. Here, athletic identity is defined as the extent to which an individual identifies with the athlete role. In considering individual athletic participation as part of a multi-dimensional self-concept, Webb, Nasco, Riley, and Headrick (1998) identify the athlete role as highly visible and acclaimed relevant to other individual roles.

Venues for sports participation are very public, and athletes are often associated with larger community groups such as teams, schools, or hometowns. Likewise, Eldridge (1983) notes the emphasis of sports and athletics early in human development as a way to achieve physical, psychological, and socially desirable skills and traits.

There are several positive characteristics, behaviors, and outcomes associated with high levels of athletic identity. One such benefit includes increased participation in exercise and fitness behaviors. Kendzierski (1988) reports an increased commitment to regular exercise in participants who rated physical activity as highly self-descriptive and important to self-image. Likewise, Anderson (2004) describes athletic self-perception as predictive of exercise behaviors. Other benefits of high levels of association with the athlete role include expanded social networks and perceived competence (Horton & Mack, 2000; Shapiro, 2003).

While there are certain positive implications for high levels of athletic identity in individuals, there are also dangers associated with a strong commitment to the athlete role within personal identity. Most of these dangers are associated with an over-commitment to this role in the case of a threat or disruption. Pearson and Petitpas (1990) note that sports and fitness activities often require a high level of focus, leading to potential neglect of the development of other interests and skills. Brewer et al. (1993) describe emotional distress as resulting when athletes lack other sources of self-worth. Such difficulties can include grief, identity loss, anxiety, and loss of confidence (Pearson & Petitpas, 1990). Levels of distress and adjustment difficulty are related to strength of athletic identity, increasing as levels of athletic identity increase (Grove, Lavalley, & Gordon, 1997).

Negative implications associated with high athletic identity and transitional loss in sport can occur in a variety of ways. Athletes can experience difficulty adjusting to aging, injuries, or illnesses that have detrimental effects on desired performance (Eldridge, 1983). Retirement and de-selection, such as being cut from a team or not qualifying to compete at an advancing level, are other occurrences that can provide a difficult adjustment for athletes (Brown & Potrac, 2009). These sources of transitional loss are common and often inevitable in sports and fitness activity participation, especially in athletes who participate over long-term periods throughout life.

Much attention has been given to the alleviation of negative outcomes associated with a disruption to athletic identity. Numerous coping strategies have been suggested to aid with the often difficult transition from athlete to non-athlete, or to lesser degrees of athletic participation. One such strategy that can be employed to alleviate emotional distress associated with transitional loss involves adjusting athletic identity to reduce the relevance that sport performance holds in self-evaluation (Brewer, Selby, Linder, & Petitpas, 1999). Other mechanisms utilized as coping strategies after sport loss include seeking social support, readjustment of goals, and planning for sport retirement (Grove, et al, 1997). Some athletes, however, use coping mechanisms that are ultimately unhealthy, such as mental or behavioral disengagement (Grove, et al. 1997). A common focus of research in the area of athletic identity and transitional loss in sport involves identifying effective coping strategies that can help athletes adjust to difficult transitions in productive and healthy ways.

Statement of the Problem

Much research regarding athletic identity involves identifying problems associated with the mediating effect that a high athletic identity can have during transitional loss. Individuals with higher athletic identity levels often experience greater emotional distress and have more difficulty adjusting after athletic retirements or disruptions (Grove, et al., 1997). While much of the significance of this research involves ways to divert interests away from the athlete role, one coping strategy of particular interest to this study involves efforts to acknowledge and maintain sport participation during such transition. Adler and Adler (1991) advocate recreational sports participation as a way to remain engaged after a sport role exit. Additionally, Brown and Potrac (2009) describe recreational sports as a way to continue sport participation with a lifetime orientation. Collinson and Hockey (2007) report strategies utilized by injured runners to retain continuity of their athletic identities during periods of prolonged injuries. While other coping mechanisms such as goal re-adjustment also occurred during this time, participants reported positive experiences with efforts involved in general maintenance of their athletic identities. One of the goals of the current study is to further support the use of athlete role continuation through recreational sports programs during a period of sport transitional loss.

Purpose of the Study

The current study investigates participation in campus recreation programs as a possible aid in a positive adjustment process after an athletic career transition. Participation in recreational sports programs is a determinant of satisfaction in college, and is related to college success and retention (National Intramural-Recreational Sports

Association, 2002). Campus recreation programs have been associated with other cognitive, physical, and developmental gains as part of a holistic college experience. In addition to overall college satisfaction, students perceived multiple benefits of recreational sports participation (National Intramural-Recreational Sports Association, 2002). Among these benefits, improved emotional well-being, reduced stress, increased happiness, and increased self-confidence seem to be particularly relevant to the use of recreational sports as a tool to mitigate emotional difficulties resulting from transitional loss. The purpose of this study is to: (a) determine the extent to which high school athletes with no plans to play college athletics experience transitional loss after the termination of their high school athletic careers; (b) determine if participation in campus recreation programs is associated with greater subjective well-being among individuals experiencing transitional loss; and (c) examine the roles of athletic identity and transitional loss within the relationship between campus recreation involvement and subjective well-being.

Statement of Hypotheses

The current study examines campus recreation program participation as a potential aid in a positive adjustment process after the termination of high school athletic careers. Items of particular interest include athletic identity and transitional loss levels. Figure 1 illustrates the nature of the proposed hypotheses regarding the variables mentioned. Specific hypotheses are as follows:

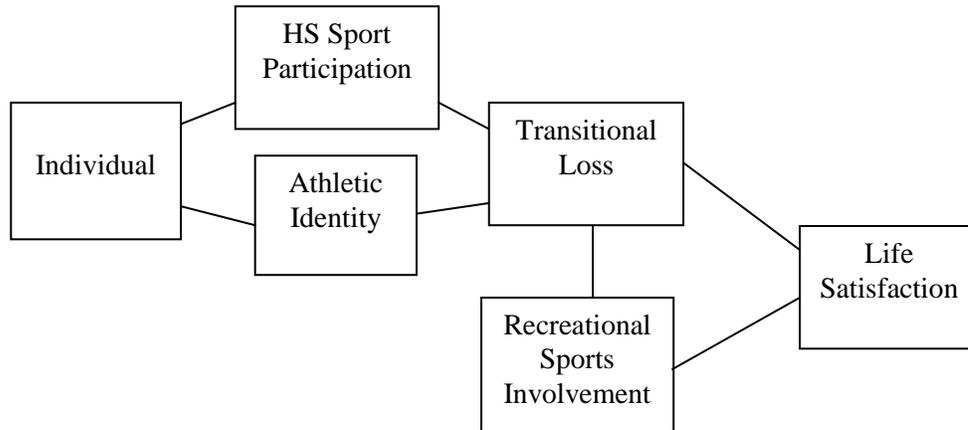
H1: There is a positive relationship between athletic identity and feelings of transitional loss.

H2: Transitional loss among college freshmen can be predicted by athletic identity, number of sports played, number of years played, desire to continue playing varsity sports after high school, and level of choice in not playing varsity sports after high school.

H3: There is less transitional loss among participants at high levels of recreational sports involvement than at low levels of recreational sports involvement.

H4: Among participants with high levels of transitional loss, those with high recreational sports involvement will have greater levels of life satisfaction than those with low recreational sports involvement.

Figure 1. Proposed Relationship Between Study Variables



Significance of the Study

A negative change in the ability or opportunity to participate in sports and fitness activities can be particularly devastating to those with high levels of athletic identity. One such disruption can occur through the ending of a high school athletic career without the opportunity to continue the activity at an increasingly competitive level, namely varsity participation in college. Such disruption can result in increased emotional distress, anxiety, and feelings of loss. Those with higher levels of athletic identity are especially vulnerable to these difficulties (Brewer, 1993). In addition to increased anxiety and depression upon termination or de-selection, those with higher levels of athletic identity are often poorly prepared to engage in life without sports (Pearson & Petitpas, 1990).

Given the popularity of sports and athletic activity participation, especially in youth and high school programs, care should be taken by relevant coaches, teachers, and other development staff to ensure the proper follow-up experiences necessary to mitigate negative experiences associated with the termination of these activities. Pearson and Petitpas (1990) echo the commonality of this problem, referring to “broken hearts and bruised egos” as a seasonal occurrence (p. 7). Here, high school athletes with a high identification with the sport role are particularly vulnerable to problems caused by sport loss due to an increased focus on sport during a critical period when exploration and expansion of other interests are critical to the development of a well-rounded identity. This study serves to examine campus recreation as a possible strategy to aid in the transition of high school athletes upon termination of their athletic careers. Campus recreation programs are associated with multiple benefits within the student experience in

college. In addition to overall college satisfaction and success, campus recreation participation is associated with increased emotional well-being, one of the very items that can be damaged by sport career termination (National Intramural-Recreational Sports Association, 2002).

The results of this study may further the identification and use of campus recreation programs in assisting with transitions from player to non-player in competitive high school athletics. Such results could increase knowledge from previous research identifying educational and developmental benefits of campus recreation, as well as identify effective coping strategies for various forms of transitional sport loss. The benefits of these results could extend not only to athletes facing such loss, but also to campus recreation programs that must justify their value within a holistic college experience, such as competing for funding and resources from administration.

Definition of Terms

Athlete: one who participated in varsity athletics for at least two years in high school.

Athletic Identity: a distinct and measurable component of the overall identity construct. Defined by Brewer et al. (1993) as a “distinct cognitive structure” reflecting the “degree to which an individual identifies with the athlete role” (p. 237).

Athletic Identity Measurement Scale (AIMS): a measure of athletic identity that reflects the strength and exclusivity of identification with the athlete role. The AIMS contains 10 items with which participants indicate their level of agreement on a 7-point scale ranging from “strongly disagree” to “strongly agree” (Brewer, et al., 1993).

Campus Recreation: Structured recreation, sports, fitness, and outdoor programs provided by higher education institutions for the overall purpose of student development and learning enhancement.

Satisfaction With Life Scale (SWLS): A measure of overall life satisfaction as an aspect of overall subjective well-being. The SWLS consists of 5 items with which participants indicate their level of agreement on a 7-point scale ranging from “strongly disagree” to “strongly agree” (Diener, Emmons, Larsen, & Griffin, 1985).

Sport Role Exit: a transition out of sport or from a more competitive to less competitive sport level.

Recreational Sports Involvement: Participation in any of multiple sports activities representing various degrees of organization and competition. Recreational sports involvement is differentiated from varsity athletics participation.

Transitional Loss: feelings of loss resulting from termination of athletic pursuits due to illness, injury, retirement, or de-selection. De-selection is the termination of sports due to being cut from a team or not qualifying to participate at increasingly competitive levels.

Varsity Athletics: Sports played at the most competitive level for a particular school. All sports are inter-school and are outcome-oriented. In the current study, both high school varsity athletics and intercollegiate varsity athletics are referenced.

Limitations

One limitation of the current study involves the inability to isolate recreational sports participation as a primary variable in life satisfaction upon entry into college. One of the primary objectives of higher education institutions is to develop students both

inside and outside of the classroom. This development goal results in a myriad of programs designed to aid in the transition into college and the subsequent journey to degree completion. Recreational sports participation in college may occur in a wider context of activities, any of which may contribute to expected outcomes. It is the goal of the current study, therefore, to identify recreational sports as one component of successful coping methods.

Another limitation of the current study involves the time of year at which the variables were assessed. Here, variables such as loss levels and life satisfaction were assessed towards the end of the freshman year of college. Factors such as social networks or other support systems could have been cultivated during this year that could potentially affect the variables in question.

A third limitation of the current study involves the exclusions of the physically-oriented nature of recreational sports participation. Examining recreational sports participation as an adjustment mechanism for sport-related loss is limited to those who are physically capable of continued competition. Implications for results related to recreational sports participation are only valid for those who are exiting sport due to de-selection or inability to continue playing at an increasingly competitive level. Results might not be as generalizable to those exiting sport because of injury, illness, or physical incapacity.

Delimitations

Because this study was conducted using college-level participants at one specific institution, the results may not be widely applicable to populations that are not as similar. In addition, while there are many situations in which transitional loss in sport may occur,

the current study only examines loss that occurs after a high school sports retirement.

Loss occurring from various other sport situations such as injury or chronic competitive failure may not be as generalizable.

CHAPTER TWO

Review of Literature

The review of literature is organized into the following sections: athletic identity formation, transitional loss in sport, specific vulnerability to difficulty associated with loss in sport, adjustment and coping with sport role transitions, campus recreation and self-development, and campus recreation as a potential sport loss coping method. The initial review sections explain ways in which identity forms through leisure choices, specifically sport-related activities. Consequent sections review personal loss related to transitions in sport roles, as well as the beneficial outcomes of participation in campus recreation programs. The remaining review explores the potential use of campus recreation participation to alleviate difficulties associated with sport role exit.

Athletic Identity Formation

One of the most fundamental characteristics of leisure use involves the individual's ability to freely choose activities. Haggard and Williams (1992) describe how such freedom in leisure activity choice serves to affirm individual identity, as well as the construction of desired selves. They describe "identity images", in which specific activities are associated with certain characteristics of participants (p. 3). Identity is affirmed through participation in activities that project the desired images, and can be a motivating factor for leisure activity participation. Further, Palmer (1981) describes how participants use leisure activities as a method of creating roles by which they organize themselves within society.

One leisure context associated with particularly desirable images of participants involves sports and athletics. Sport-related activities are often emphasized as ways to achieve and project psychologically desirable characteristics such as autonomy and perseverance, as well as socially desirable traits such as teamwork ability and achievement orientation (Eldridge, 1983). Sport participation is highly valued in society, and athletes are seen as fulfilling important roles that have worthy purposes. The extent to which participants relate to and identify with this role is known as athletic identity (Brewer et al., 1993).

Athletic identity is defined as the degree to which an individual identifies with the athlete role, and involves both the strength and exclusivity of identification with this role. Brewer et al. (1993) identifies athletic identity as a distinct cognitive structure that helps individuals process information and interpret events regarding the self. Athletic identity levels can fluctuate among individuals. Those who identify highly with the athlete role are more likely to interpret an event in terms of its effect within that particular context rather than those with weaker athletic identities (Brewer et al., 1993; Lavalley, Grove, Gordon, & Ford, 1998).

High athletic identity levels are associated with several positive personal traits and behavioral outcomes. Kendzierski (1988) describes greater commitment to regular exercise as a positive outcome associated with a greater identification with sports and physical activity. Athletic identity is also associated with greater self-confidence, self-image, and energy level. Horton and Mack (2000) report athletic identity as being associated with enhanced body image, decreased anxiety, and greater self-confidence among runners. In addition, Shapiro (2003) found a relationship between perceived

competence and athletic identity levels among visually-impaired children. Within a school context, sports participation is associated with higher academic achievement and institutional attachment, which in turn affect retention efforts (Melendez, 2006).

While athletic identity has several positive associations as an individual cognitive structure, there are also positive implications when it is considered as a social role (Brewer et al., 1993). Collinson and Hockey (2007) identify social networks as important components of sport activities that can have implications on athletic identity. Runners with high athletic identities reported larger social networks associated with their sport as compared to runners with lower athletic identities (Horton & Mack 2000).

Transitional Loss in Sport

The athlete role is commonly associated with elevated social status and esteem. Sport is an activity performed in public venues in front of spectators, and the athlete role is more visible relative to other life roles (Webb, Nasco, Riley, & Headrick, 1998). Adler and Adler (1991) refer to the “celebrated self-images” of athletes, describing a degree of status “aggrandizement” that can occur (p. 163). Likewise, Brown and Potrac (2009) describe soccer players enjoying others’ responses regarding their sport skills. Here, players described pleasure associated with being recognized as successful athletes by peers and community members.

Loss and role exit.

While there is a degree of pleasure and status associated with the athlete role, there can also be stress associated with threats to the ability to continue this role. The cessation of the ability to participate in sports can occur through a variety of circumstances, and can be particularly stressful. Palmer (1981) describes feelings of loss

and helplessness associated with the inability to continue sports participation as creating a “gnawing vacuum” (p. 27). Additionally, Palmer (1981) describes how the existence of a highly competitive society and widespread opportunity for sport role rejection in the United States creates additional stress related to transition out of sport.

Factors associated with distressful reactions to athletic retirements are similar to those associated with other types of loss (Lavalley, Gordon, & Grove, 1997). Heyman (1986) describes emptiness and incompleteness as components of transitional loss that can occur at any point in an athletic career. Feelings of loss associated with the inability to continue sport participation create the need for help and support for individuals experiencing athlete role cessation. Heyman (1986) likens the need for support in dealing with loss in sport to someone experiencing loss due to death or terminal illness.

Although transitional loss in sport is comparable to other types of loss, it is also associated with specific circumstances that create distinctive difficulties. Pearson and Petitpas (1990) note the uniqueness of developmental issues that can arise during the course of athletic careers, describing an increased likelihood of encountering difficulties associated with sport-related loss relative to those not as involved in athletics. Webb et al. (1998) also describe factors thought to make athletic retirements different from other transitions, including the uniqueness of athletic identity as a distinct identity component as well as special circumstances that can cause early or forced retirements.

Although transitional loss in sport can result from a variety of circumstances, some of the most relevant unique transitions experienced by athletes are being cut from a team, dealing with injury, and retiring from active participation. Lavalley et al. (1998) also identify disappointing performance outcomes, or slumps, as a source of loss. One of

the most common player-to-non-player transitions in sport is de-selection, in which athletes do not qualify to play at increasingly competitive levels. Pearson and Petitpas (1990) note that the “broken hearts and bruised egos” that can occur after de-selection are so common that they are considered to be a seasonal occurrence in the current culture (p. 7).

Elements of transitional loss in sport.

Injury, retirement, de-selection, or chronic competitive failure can result in feelings of loss in athletes, and there are multiple elements that compose this loss. Lavallee et al. (1997) identify one source of loss in sport as interpersonal. Lavallee et al. (1998) also list the loss of social networks associated with sport as a component of sport role exit, along with the abrupt cessation of the positive experiences acquired through sport participation. Other elements such as mobility, independence, sense of control, confidence, routine, status, and attention further contribute to transitional loss. Identity loss is a particularly salient component of sport-related loss, and Lavallee et al. (1998) confirm loss of some aspect of the self as the most common form of symbolic loss suffered by athletes.

There are several components of role exit that are particularly relevant to the feelings of distress experienced by athletes during transitional loss. Webb et al. (1998) describe an important differentiation in athletic retirements as being whether they are chosen or forced by various conditions. These retirement types differ in the amount of control that the individual has over the circumstances of the retirement. Lack of control over the retirement situation can be especially difficult, resulting in feelings of powerlessness and frustration (Adler & Adler, 1991). In addition to powerlessness,

athletes can feel unprepared when retirements are sudden and un-chosen. Permanence and irreversibility of sport role exit are other factors that can contribute to emotional distress, especially in the case of career-ending injuries or the end of school-related athletic eligibility. Furthermore, student-athletes in college described feeling isolated and unsupported upon being removed from competition (Melendez, 2006).

Implications of emotional distress due to sport loss include changes to identity, as well as negative emotions and behaviors. Lavalley et al. (1997) identify fundamental changes in identity as resulting from major loss in sport. In addition to identity loss, negative emotional reactions to athletic transitions can include grief, depression, loneliness, fear, anxiety, and loss of confidence (Pearson & Petitpas, 1990). Negative behaviors can also result from sport role loss, including withdrawal, excessive risk-taking, use of alcohol or drugs, and even suicide (Palmer, 1981).

Athletic identity influences the difficulty associated with transitional loss. Stronger athletic identity is associated with greater distress. Webb et al. (1998) reported increased adjustment difficulty to sport retirement with higher levels of athletic identity. Grove et al. (1997) further describe this association, reporting a positive association between athletic identity levels and the amount of time taken to adjust to retirement from sport, both emotionally and socially. Here, higher athletic identity levels were also associated with lower amounts of post-retirement planning, as well as increased anxiety regarding post-retirement plans.

Specific Vulnerability to Difficulty Associated with Loss in Sport

While physical abilities, playing opportunities, and competition levels can fluctuate throughout athletic careers, certain circumstances create particular vulnerability

to stress when this fluctuation is in a negative direction. A fundamental source of vulnerability to loss in sport involves the status of sport as a basis of self-worth for many individuals. According to Brewer et al. (1993), people make judgments regarding personal worth and competence in the context of specific domains. The physical and athletic domains are areas in which these judgments occur. Here, the more important a self-concept domain is to an individual, the more that perceived competence in that domain can affect self-esteem. In considering that sports participants with higher levels of athletic identity rate the athlete role as more important relative to other roles than participants with lower levels of athletic identity, those with stronger athletic identities are particularly vulnerable to loss related to negative outcomes in sport (Horton & Mack, 2000). Brewer et al. (1993) report that self-esteem of individuals who place greater importance in sport and exercise is more affected by outcomes in this area than those who do not value these activities as highly.

Considering sport participation within a context of serious leisure participation creates additional implications for the propensity of identification with and expression through sports and athletics. In describing serious leisure, Stebbins (1992) mentions how the pursuit of serious leisure activities can contribute to the development of individual self-image. One way in which serious leisure is distinguished from more casual recreation is through the development of a “career”, or longitudinal involvement with a particular leisure pursuit that reflects a “continuum of changing patterns related to knowledge, skills, and abilities” (Gould, Moore, McGuire, & Stebbins, 2008, p. 49). Gould et al. (2008) identify another particular quality of serious leisure as a strong identification that the participant has with the chosen activity.

Role engulfment.

Placing heavy importance on the athlete role can lead to neglect and atrophy in other areas of the self-concept. This over-commitment is known as identity foreclosure, and can create additional vulnerability to distress upon sustaining loss in sport.

According to Brewer et al. (1993), self-concept is a multi-dimensional entity, and should be compromised of multiple and diverse sources of identity and worth. However, participation in sports and exercise activities are commonly accompanied by high levels of commitment. Many athletes find it necessary to devote primary focus on their sport, and see little need to engage in exploratory behaviors that could diversify their identities (Pearson & Petitpas, 1990). Pearson and Petitpas (1990) identify this combination of over-commitment to sports and neglect of other interests as potentially resulting in poor preparation to handle life without sports.

Adler and Adler (1991) describe this identity foreclosure in college basketball players, noting that as the players' athletic identities were "fed and expanded, their other selves tended to atrophy and diminish in salience" (p. 169). Here, Adler and Adler (1991) term this athletic identity immersion as "role engulfment". In addition to role engulfment, role abandonment was also observed in college basketball players, in which the athletes progressively detached from investment in other areas and let go of alternate goals. While identity immersion and alternative-identity abandonment were readily observed in college athletes, they have also been described among younger athletes in youth sport leagues. Brown and Potrac (2009) also observed these processes in youth soccer players, describing a "one-dimensional and un-balanced sense of self" based around the athletic identities of the children (p. 148).

While this role engulfment can be dangerous in that it isolates self-concept within singular identity components, it can be difficult to avoid due to the reward that many athletes feel in this role. According to Brown and Potrac (2009), the experience of success in sport is very reinforcing. This performance outcome reinforcement, along with the public acceptance and acclaim of the athlete role, makes the ability to identify oneself as an athlete very desirable. Adler and Adler (1991) describe the concept of the “gloried self” as it relates to sport. Here, the experience of glory in sport brought about by increased attention is very extrinsically satisfying. The experience can be so gratifying that athletes can become “emotionally riveted” on it, “turning away from other aspects of their lives and selves that did not offer such fulfillment” (p. 155).

Threats to the athlete role.

The development and perceived rewards of high commitment to the athlete role also carries potential risks. The risk of emotional difficulty when this role is impaired is particularly heightened when the athlete lacks other sources of self-worth or self-identification (Brewer et al.,1993). Brewer (1993) describes athletic identity as a specific mode of vulnerability to depression, identifying a “strong, exclusive identification with the athlete role as being related to depressed mood when presented with a negative event related to the athlete role” (p. 360).

The fallibility of the human body provides one type of threat to identity-confirming athlete roles. Athlete roles can change with age, and the aging process itself results in ever-decreasing physical ability. In addition to aging, injury and illness can compound adjustment difficulties related to physical decline. According to Eldridge (1983), athletic injuries can threaten identity confirming roles. Further, injuries can cut

off “pathways for emotional catharsis and stress reduction” (p. 205). Not being able to fulfill the ideal athletic self-image can lead to frustration, fear, and depression (Eldridge, 1983). Brewer (1993) also describes depressed mood in samples of injured athletes, noting that athletic identity levels play a role in the severity of depression perceived after an injury. Here, Brewer (1993) found a positive relationship between athletic identity and depression levels in subjects asked to imagine a career-ending injury.

Retirement from sports competition provides another source of stress associated with athlete role exit. Retirements can vary in their degree of choice for the individual, as well as in the amount of time that the individual has to plan for it. Webb et al. (1998) found that difficulty associated with retirement was related to the degree to which the retirement was planned or forced. Here, a particular difficulty adjusting to retirement involves a sense of vagueness about the future. Likewise, Adler and Adler (1991) noted that a consequence of the “gloried selves” observed in college basketball players was a loss of future orientation. In being absorbed by the present, players deferred long-term planning in favor of the immediate gratification provided by sports (p. 167). As with dealing with injury, the ability to adjust to retirement also has a relationship with athletic identity. Individuals with high levels of athletic identity experience more emotional adjustment difficulties in the face of retirement (Lavalley et al., 1997). Additionally, although the degree of planning for retirement affects adjustment difficulty, even athletes given time to plan for an impending retirement experienced negative emotions associated with the event.

While injury and retirement are sources of transitional loss that can result in adjustment difficulty and emotional distress, de-selection from sports opportunities is a

particularly difficult mode of role exit. De-selection occurs when an individual is removed from a team or not selected to play at a particular level, or when an individual does not qualify to play at increasingly competitive levels. According to Brown and Potrac (2009), de-selection is particularly difficult because it implies a certain degree of failure. The public acclaim that fortifies athletic identity can also make de-selection particularly humiliating. Brown and Potrac (2009) describe youth soccer players as experiencing anxiety in having to tell people that they were cut from a team. In addition to humiliation and anxiety, Brown and Potrac (2009) also describe impact upon sense of self, shock, anger, and despair at not being selected to continue competition in a youth soccer program.

Age and developmental considerations in sport roles.

Athletic identity levels and circumstances surrounding athlete role exit can influence the level of risk for emotional distress and adjustment difficulty associated with this transition. Age provides an additional risk factor in vulnerability to these difficulties, considering the popularity of sports participation in youth and school settings. Eldridge (1983) describes the emphasis of sports participation early in human development as a way to achieve traits and skills that are highly valued in society. As sport participation progresses, activity focus frequently narrows toward skill development, creating a sense of accomplishment that is reinforcing (Pearson & Petitpas, 1990). Children can prioritize sport very early, and can make social and educational sacrifices as early as 10 years old (Brown & Potrac, 2009).

While early and strong emphasis on athletic skill development in children can be rewarding, there are also negative consequences associated with the isolated nature of

this development. Palmer (1981) describes how the athlete role emphasis in children can be stifling to identity development. Further, in high school, the athletics system seems to be in conflict with the exploratory emphasis that is important to development of the whole individual (Pearson & Petitpas, 1990). Brewer et al. (1993) described a negative correlation between athletic identity and age in a sample of college students. In younger athletes, athletic identity may be the basis for other dimensions of the self, and could dominate the self-concept in a dysfunctional manner (Horton & Mack, 2000).

Aside from threats to comprehensive self-concept development, the negative relationship between athletic identity levels and age also leads to unrealistic expectations about future playing opportunities. According to Wiechman and Williams (1997), high school athletes who expected to play sports in college as well as professionally had higher athletic identity levels than those who did not have these expectations. Wiechman and Williams (1997) argue that a particularly dangerous implication of this finding is that the number of high school athletes who have this expectation is unrealistically high. Here, 75% of freshmen and 54% of seniors expected to play college sports, whereas only a fraction of those students will actually be able to compete at that level. This finding indicates that the expectations of high school athletes may be unrealistic. This danger is heightened in individuals with high levels of athletic identity who are more likely to have these expectations. A particular concern regarding these unrealistic expectations is the potential to neglect other roles and future preparation outside of sport, as well as restricted development of skills and interests in other areas (Wiechman & Williams, 1997).

Adjustment and Coping with Sport Role Transitions

Coping strategies of athletes experiencing transitional loss can include a variety of methods. Negative coping mechanisms can include both physical and cognitive methods. Physical coping methods with negative implications include harmful training behaviors or eating habits, drug use, or even suicide (Hughes & Coakley, 1991). Avoidance-oriented coping strategies include denial and mental and behavioral disengagement. High athletic identity levels in particular are associated with an increased reliance on denial as a coping strategy. This particular strategy is not a productive coping mechanism for transitional loss, and may exacerbate distress in the long term (Grove et al., 1997).

Mental and behavioral disengagement are additional avoidance-oriented coping strategies associated with transitional loss. Individuals with strong athletic identities use disengagement more than those with weaker athletic identities (Brewer, et al., 1999). Reduction of identification with the athlete role can have some positive implications such as activity and goal adjustment. However, Brewer, et al. (1999) identify behavioral disengagement as a possible negative result of reducing one's identification with the athlete role. With benefits of high athletic identity and sport involvement including increased likelihood to engage in positive health behaviors, behavioral disengagement is not always desirable. Grove et al. (1997) echo the negative implications of disengagement as a coping mechanism for sport loss, identifying it as effective in the short-term, but ultimately detrimental to positive adjustment.

There are also several positive coping mechanisms used by athletes adjusting to transitions out of competitive sport. Lavalley et al. (1997) identify account-making, or reporting of emotions and feelings, as a beneficial and effective tool in the adjustment

process. Individuals with high athletic identity in particular are more likely to seek social support when faced with transitional loss (Grove et al.,1997). Social support offers potential as a coping mechanism during injury-related loss, as well as a motivational mechanism (Lavalley et al.,1997). However, an unfortunate consequence of support systems and social networks of athletes is that they tend to be homogenous, resulting in a limited range of alternatives to the sport (Pearson & Petitpas, 1990).

The use of recreational sports participation has also been identified as a positive coping method after exit from competitive sports (Grove et al.,1997). Adler and Adler (1991) identify abrupt cutoff as one outcome of role exit, but identifies continuation of involvement in a different role as a “buffer” to disengagement (p. 215). The continuation of sport at a different level can reduce the negative effects of a more abrupt termination. Brown and Potrac (2009) describe de-selected elite sport participants continuing to play sport at a recreational level as part of a re-constructed lifestyle containing other components such as education. Likewise, Collinson and Hockey (2007) describe activity adjustment by runners after prolonged injury with longer-term goals that include a lifetime, rather than acute, orientation to their sport.

The continuation of sport participation in different contexts after a role transition can be utilized as part of an overall adjustment of attitudes towards these roles. Palmer (1981) identifies the importance of recognizing role stress and acting to alleviate it rather than ignoring it in hope that it goes away. Along with recognizing role stress, the ability to adjust attitudes and perceptions is part of a process whereby athletes can learn to improve their abilities for coping. In adjusting to altered sport roles, Adler and Adler (1991) identify the importance of changing both “themselves and the social structures

within which they exist” (p. 29). Brewer et al. (1999) also mention a way that athletes facing loss can cope through modification of their interpretation of the situation, as well as modification of aspirations to be more consistent with actual performance.

Particularly when retirement is chosen or planned, athletes can exercise control beyond sports into other domains where new identities can be established (Webb et al., 1998).

Recreational sport participation can offer opportunities for this type of activity and attitude modification.

A possible component of attitude modification includes the reduction of athletic identity in response to sport loss. Collinson and Hockey (2007) described less physical and psychological investment in sport identities after long-term injury. Likewise, athletes with poor competitive seasons reported decreases in strength of athletic identity relative to athletes who had good competitive seasons (Brewer et al., 1999). Brewer et al. (1999) identify athletic identity as a flexible structure that can be adjusted in response to situational factors. Athletic identity reduction is a way that athletes can make their competitive performance less relevant to their self-evaluation. Lavalley et al. (1997) note that the quality of adjustment to sport loss improved as athletic identity decreased.

While athletic identity can be reduced in order to adjust attitudes towards sport, it can also be retained as a coping method in the face of sport loss. Collinson and Hockey (2007) describe runners’ use of “identity work” principles to retain continuity of athletic identity through materialistic, associative, and vocabularic behaviors that help athletes continue to identify with their athlete roles during prolonged injury. Here, athletes facing sport exit attempted to retain identities as runners in order to reduce dissonance between self-concept and idealized images as former athletes. Vocabularic identifications that

helped maintain athletic identity included use of language in sport to affirm status as an athlete and refute that of a non-athlete, as well as helped link past and present athlete roles. Associative identifications were used to obtain recognition from others as an athlete, and helped to validate the component of athlete in one's self-concept.

Materialistic identifications with sport included adherence to routines, continuity of fitness activities, and continued use of athletic clothing and gear. The benefits of such behaviors included a sense of stability during an otherwise unstable transition, and the continuance of memberships in desired social groups (Collinson & Hockey, 2007).

The continuity of sports participation as a beneficial coping mechanism can also be supported by the notion that athletic identity does not necessarily relate to performance outcomes. While Horton and Mack (2000) found that runners with the best race times had the highest levels of athletic identity, so also did the runners with the slowest race times. These findings suggest that athletic identity is related to multiple aspects of sport outside of the competitive or result-oriented context. If athletic identity can be related to other sport components such as time and effort, then perhaps there is a place for high athletic identity in healthy sport adjustment efforts. Likewise, in their identity work reporting, Collinson and Hockey (2007) found that although a general continuity of athletic identity was helpful to adjustment during prolonged injury, the meaning of the relevant sport was fundamentally changed to reflect a more recreational orientation.

Recreational sports participation and continuity of the positive aspects of identification with the athlete role have implications in the identification of positive and effective coping methods for athletes experiencing sport loss. Brewer et al. (1999)

describe a need for a more complete picture of ways in which athletes can maintain emotional stability in the face of challenges to athletic identity. Pearson and Petitpas (1990) name primary prevention as an important step in such interventions. Such prevention includes the identification of athletes who are most at risk for experiencing distress.

Preparation for retirement, as well as manipulation of the conditions under which retirement occurs, can also facilitate positive adjustment (Webb et al., 1998). Pearson and Petitpas (1990) list another valuable step in utilizing prevention programs for transition distress as helping participants acquire additional resources such as knowledge, attitudes, and skills that are transferable and adjustable to contexts outside of a specific, competitive sport. Athletes with a wider variety of alternatives are better able to handle sport participation-related transitions than those with fewer alternatives. Eldridge (1983) also recommends help in identifying a fuller range of competencies to maintain feelings of adequacy during sport loss.

Campus Recreation and Self-Development

Campus recreation is a specific context of recreational sports participation that has implications for personal development and potential to address the negative consequences of transitional loss after sport role exit. Campus recreation is a component of higher education communities that has implications in student development and learning outcomes.

Astin (1999) identifies development of the whole student through involvement experiences as a primary objective of higher education. A critical component of this development is brought about by out-of-classroom experiences. There is a greater

potential for learning when the student is fully engaged with the campus environment, and temporal, physical, and psychological commitment to activities are critical to this involvement resulting in development (Astin, 1993). Campus recreation, therefore, provides unique development opportunities with great learning potential because of its demand on all of these energies, rather than just one.

One of the ways in which campus recreation purports to further student development is through the expansion of identity and opportunity for growth. According to Pearson and Petitpas (1990), a primary developmental task is the establishment of personal identity. This identity formation requires the exploration of alternatives, but also requires that commitments are made to those alternatives that are the most consistent with personal needs, values, interests, and skills. This exploration can be especially critical to athletes who experienced heavy commitment to the athlete role prior to college.

Blumenthal (2009) identifies campus recreation, particularly club sports participation, in providing opportunities for student learning through the notion that they are student-led, and therefore provide leadership development opportunities. In fact, Haines (2008) found that students who participated in club volleyball reported gains in planning skills, school pride, sense of belonging, and overall leadership development over the course of participation.

Expansion of social networks is one particular way in which campus recreation provides exploratory opportunities that are especially relevant to effective coping with sport loss. As previously mentioned, individuals with high athletic identities reported seeking social support more than those with lower athletic identities (Horton & Mack, 2000). The utilization of this coping method illustrates the importance of social support

during an athletic career transition, and has implications on the importance of recreational sports as a means of providing effective coping (Grove et al., 1997).

According to Astin (1999), student development in college occurs in the social and interactive contexts of students' lives, when students are engaged with others. Campus recreation provides such opportunity for social interactions, particularly with individuals of different demographics and backgrounds. Haines (2008) found that sport club participants were more likely than their typical college peers to engage with faculty and staff. Likewise, participants were more likely to interact with students of different ages and ethnic backgrounds, furthering the opportunities for personal growth.

While individuals with high athletic identity levels report greater social networks within their activities, these networks are often homogenous and provide little engagement outside of the sport. In fact, social networks outside of sport can suffer in individuals with high athletic identity relative to those with weaker athletic identities (Horton & Mack, 2000). Heyman (1986) furthers this idea, describing how athletes' social support systems often foster and support these narrow identities. The opportunity for increased interaction with diverse groups brought about by campus recreation participation illustrates the use of campus recreation as a potential means of social network expansion.

Other benefits of campus recreation include both affective and behavioral components. Involvement in co-curricular activities such as campus recreation contributes to persistence in college students (Astin, 1993). Greater persistence, success, and satisfaction in college have far-reaching implications regarding retention, which in turn affects institutional funding, recruitment, and development. Students agreed that

recreational sports participation resulted in improved emotional well-being, stress reduction, and improved happiness and self-confidence (Brown & Potrac, 2009).

Students also reported increased positive behaviors associated with campus recreation participation, such as community service, not smoking, attending religious services, and taking heavier course loads (National Intramural-Recreational Sports Association, 2002).

Given the reported benefits of campus recreation participation during college, it is no surprise that participation in campus recreation is associated with overall satisfaction and success in college (National Intramural-Recreational Sports Association, 2002).

Haines (2008) found that club volleyball participants like college significantly more than typical students. Club sports participants reported gains in school pride and sense of belonging as results of participation. These are important variables in school retention (Haines, 2008). Blumenthal (2009) also reports campus recreation opportunities as important to both retention and recruitment of college students. Huesman, Brown, Lee, Kellogg, and Radcliffe (2007) report that campus recreation involvement is even positively associated with academic success. Such association is critical in establishing the link between campus recreation program availability and student success in college.

Campus Recreation as a Potential Transitional Loss Coping Method

One important use of campus recreation in college is as a way for students to pursue and continue interests in sports and fitness activities. Blumenthal (2009) acknowledges that college students who played sports in high school don't just "leave their athleticism behind with their high school letter jackets" (p. 56). In fact, the National Intramural-Recreational Sports Association (2002) reports that students who participate in campus recreation are more interested in watching or participating in varsity sports

than students who don't participate.

The use of campus recreation as a tool to maintain continuity of identity and sense of self after high school career termination can help those with high athletic identities. Webb et al. (1998) identify opportunities to maintain identity after athletic retirement as a way in which re-definition of the self-concept can be facilitated. Stebbins (2001) also identifies serious leisure pursuits as a way to restore routine and regularity through practices and competitions. Campus recreation programs affording heightened levels of competition could serve to provide such structure.

Campus recreation also provides opportunities for sports participation without some of the negative implications of varsity athletics. Negative influences of athletics on college adjustment include increased time demands and less opportunity for social interactions with the general student body (Melendez, 2006). While varsity athletics provide a more recognized and high-profile experience for athletes, campus recreation is cited as having a greater influence on college choice than varsity athletics, even among males (National Intramural-Recreational Sports Association, 2002). Here, recreational sports programs ranked higher than watching and participating in varsity sports as determinants of college satisfaction and success. For every varsity athlete, there are more than four non-varsity college students that participate in sports clubs (Blumenthal, 2009). Blumenthal (2009) reports an increasing interest in club sports participation and attributes it in part to the meaningfulness of the athletic experience in high school. Campus recreation is a way to channel this interest in sports into a developmentally appropriate mode.

The specific vulnerability of high school athletes to adjustment difficulties after the end of their competitive playing opportunities makes them appropriate candidates to examine campus recreation participation as a potential coping method. Heyman (1986) identifies not qualifying to participate in increasingly competitive situations, such as a high school athlete not receiving a college scholarship, as a problem associated with sports being a highly valued characteristic of the self. Webb et al. (1998) also emphasize the inability to compete at the next level of competition as a particularly difficult situation, reporting that the negative relationship between control over retirement and life satisfaction was strongest among this group. Considering that more high school players expect to play intercollegiate athletics than actually get the opportunity to participate, this group seems particularly important to investigate.

Another specific vulnerability of high school students to adjustment difficulties related to sport loss involves a high level identity and group status associated with playing sports. According to Todd and Kent (2003), group membership is particularly influential in identity formation. A primary way in which high school students derive their identities is through the membership characteristics of the groups in which they are involved.

The time and psychological commitment to the athlete role in high school can be very strong. Todd and Kent (2003) report that athletic identity is highly formed by high school, often to the degree that other potential social roles are neglected. Research reporting that strong athletic identity does not necessarily cause neglect in life roles such as family and work has been done with adult samples (Horton & Mack, 2000). Younger

athletes who do not have adult obligations may not have as much need to diversify their self-concepts.

The current study purports to add to the available knowledge of positive coping methods for athletes experiencing difficulty adjusting to sport loss. Pearson and Petitpas (1990) describe the presence of “widespread organizational structures that organize and implement sports programs” (p.7). While the popularity of sports opportunities results in many positive outcomes, they also create a need for prevention of transitional distress. Brown and Potrac (2009) emphasize the need for support in dealing with the emotional consequences of discontinuation of sports participation. Webb et al. (1998) further mention counseling as a possible aid, but also cites a need for additional interventions.

A need for additional research involves investigating the conditions that influence the degree to which athletes reconstruct positive identities or encounter depression in the face of sport retirement (Collinson & Hockey, 2007). Brewer et al. (1999) name athletic identity as a dynamic, “self-regulatory process” that can be adjusted depending on individual need (p. 158). While an emphasis of previous research has investigated the reduction of athletic identity as a possible coping aid, the current study proposes the use of recreational sports as a mechanism that facilitates positive adjustment experiences to athletes facing role loss.

CHAPTER THREE

Methods

The purpose of this study was to examine recreational sports participation within a positive adjustment process for athletes experiencing transitional loss due to sport career termination and de-selection. Specifically, it seeks to examine whether campus recreation could be a component of positive adjustment to transitional loss in sport experienced by high school athletes who can no longer play competitive varsity athletics upon entry into college. The investigation tested the following hypotheses:

- H₁: There is a positive relationship between athletic identity and feelings of sport transitional loss.
- H₂: Transitional loss among college freshmen can be predicted by athletic identity, number of sports played, number of years played, desire to continue playing varsity sports after high school, and level of choice in not playing varsity sports after high school.
- H₃: There is less transitional loss among participants at high levels of recreational sports involvement than at low levels of recreational sports involvement.
- H₄: Among participants with high levels of transitional loss, those with high recreational sports involvement will have higher levels of life satisfaction than those with low recreational sports involvement.

An empirical examination was conducted through the administration of the Athletic Identity Measurement Scale (AIMS), Satisfaction With Life Scale (SWLS), Loss in Sport Survey, and Recreational Sports Involvement index.

Sample

The target population was college freshmen who had played varsity sports in high school but who were not continuing to play sports at the varsity level in college. Students completing their freshman year of college were considered to be an ideal population because of the temporal proximity to previous varsity athletics participation in high school. It is assumed that levels of transitional loss are higher among freshmen than among other class levels because they have had less time to adjust. The sample was drawn utilizing the university's office of institutional research. Using an estimation of 55% of freshmen as having participated in high school athletics, it was assumed that 1,622 of the total 2,942 freshmen available were eligible to complete the survey (National Federation of State High School Associations, 2009). A required sample of 1,555 athletes was necessary to obtain a sampling error of +/- 5%, resulting in a total drawn sample of 2,827.

Test Instruments

The Athletic Identity Measurement Scale (Brewer et al., 1993), Satisfaction With Life Scale (Diener, Emmons, Larsen, and Griffin, 1985), Loss in Sport Survey, and Recreational Sports Involvement index were the instruments used to collect data for this study. In addition, participants were asked to report high school size, particular sports played in high school as well as the number of years, desire to play varsity sports beyond high school, and degree of choice in not playing varsity sports beyond high school.

Athletic Identity Measurement Scale.

The Athletic Identity Measurement Scale was developed by Brewer et al. (1993) in order to measure both the strength and exclusivity with the athlete role. While many

instruments address the importance of sports or fitness to the individual, Brewer et al. (1993) deemed it important to also measure the exclusivity of the identification, or the extent to which individuals identify solely with the athlete role. Measuring both strength and exclusivity of identification with the athlete role gives a more comprehensive picture regarding risks for emotional disturbance after athletic transitions. The Athletic Identity Measurement Scale is used to identify those who are especially vulnerable to such disturbances, as well as further understanding social and developmental implications of sports participation (Brewer et al., 1993).

The Athletic Identity Measurement Scale (see Appendix A) consists of 10 items answered on a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sample items on the AIMS include statements such as “I consider myself an athlete” and “I have many goals related to sports”. Scores can range from 10-70, with higher scores representing stronger identification. Brewer et al. (1993) report a test-retest reliability of .89 and an internal consistency with alpha coefficients ranging from .81 to .93.

Satisfaction With Life Scale.

The Satisfaction with Life Scale (SWLS) purports to measure life satisfaction as an aspect of overall subjective well-being (Diener, et al., 1985, see Appendix B). The SWLS consists of five items on which respondents use a 7-point Likert-type scale to indicate their level of agreement, ranging from 1 (strongly disagree) to 7 (strongly agree). A mean score is calculated to represent level of satisfaction. The SWLS is widely used for a variety of populations, and is appropriate for use among college students. Additionally, the global nature of the items in the SWLS allows respondents to assess satisfaction within the domains and contexts of their choosing (Pavot & Diener, 1993).

Pavot & Diener (1993) report a test-retest reliability of .84 over a one-month period, and an internal consistency with an alpha coefficient of .89. Diener, et al. (1985) report moderately strong correlations of the SWLS with other measures of subjective well-being, including the Fordyce (1978) Global Happiness Scale (.58 and .62), as well as Andrews & Whitney's (1976) Delighted-Terrible Scale (.68 and .62).

Loss in Sport Survey.

The Loss in Sport Survey was developed by the researcher in order to measure feelings of loss associated with transition out of sport (see Appendix C). Crucial issues regarding transitional loss that were presented in the review of literature include feelings of personal emptiness or incompleteness (Heyman, 1986), as well as changes to identity (Lavalley et al., 1997). Particularly, sport exits that are forced, rather than chosen, can present feelings of powerlessness and unpreparedness (Adler & Adler, 1991). Therefore, the researcher developed and selected items involving transition readiness, as well as feelings of void or sadness associated with the transition. Herman (2002) developed a survey assessing transitional loss in college athletes, and the Loss in Sport Survey utilizes two similar items regarding void and transition, which were adapted to refer specifically to high school, rather than college athletics. Ten items involving perceptions of sport transition-related loss were developed along a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

The survey was pilot tested to establish internal consistency, as well as content and construct validity. The mean and standard deviations for each question on the Loss in Sport Survey was tabulated using 62 participant responses. Table 1 presents these

values for each Loss in Sport Survey item in the order in which they appeared on the instrument.

The original instrument contained 10 items. One of the items was found to load on multiple factors, and was subsequently eliminated. The final version of the Loss in Sport Survey contained 9 items and had an overall estimate of internal consistency of .82, which is considered to be ideal (O'Rourke, Hatcher, & Stepanski, 2005). Item scores are summed, resulting in a potential total score range from 9 to 63. Coefficient alpha estimates for each item, if the item were deleted, are presented in Table 1.

Principal component analysis was applied to responses to the 9-item questionnaire using 1s as communality estimates. The principal axis method was used to extract the components, and this was followed by orthogonal rotation.

The first three components exhibited eigenvalues greater than 1. However, the third component exhibited an Eigenvalue of 1.06 and only contained two items. The results of a scree test also suggested that only the first two components were meaningful. Therefore, the first two components were retained for rotation. Combined, components 1 and 2 accounted for 59% of the total variance.

Questionnaire items and corresponding factor loadings are presented in Table 2. An item was said to load on a particular component if the factor loading was .40 or greater for that component (O'Rourke, et al., 2005). Using these criteria, six items were found to load on the first component and three items were found to load on the second component. Therefore, the components were subsequently labeled as transition readiness and void/sadness upon sport transition.

Table 1

Mean Scores, Standard Deviations, and Coefficient Alpha Estimates for Loss in Sport Survey Items

Loss in Sport Statement	Mean Score	Std. Deviation	Alpha if item deleted
1. I had the opportunity to play sports at other colleges, but chose to attend a school where I would not be able to play at the varsity level.	2.98	2.22	.82
2. I was not interested in playing sports at the college level.	4.08	2.39	.82
3. I was ready to stop playing my sports when my high school career was over.	4.62	2.17	.81
4. I was tired of competing in varsity sports.	5.46	1.83	.81
5. Once I finished playing high school sports, my life felt empty.	3.82	2.23	.80
6. I miss playing varsity sports for my school.	4.74	2.20	.79
7. My last high school game was one of the saddest days of my life.	3.54	2.05	.79
8. I do not feel like myself now that I am not on a varsity sports team.	2.26	1.58	.82
9. The transition of not being a varsity athlete has been difficult.	2.41	1.63	.80

Table 2

Rotated Factor Pattern and Final Communality Estimates from Principal Component Analysis of Loss in Sport Survey

Component			
1	2	h ²	Items
52	16	.29	1. I had the opportunity to play sports at other colleges, but chose to attend a school where I would not be able to play at the varsity level.
17	71	.53	2. I was not interested in playing sports at the college level.
15	87	.78	3. I was ready to stop playing my sports when my high school career was over.
17	85	.76	4. I was tired of competing in varsity sports.
82	10	.68	5. Once I finished playing high school sports, my life felt empty.
67	36	.59	6. I miss playing varsity sports for my school.
78	19	.65	7. My last high school game was one of the saddest days of my life.
67	2	.44	8. I do not feel like myself now that I am not on a varsity sports team.
74	20	.59	9. The transition of not being a varsity athlete has been difficult.

Recreational Sports Involvement Index.

The Recreational Sports Involvement Index was developed by the researcher in order to measure the level of involvement in campus recreation programs (see Appendix D). The index was based upon the level of competitiveness of chosen recreational sports activities as well as the frequency with which they were performed. Competitiveness level was determined to be an important component of the recreational sports involvement index based on Astin's (1993) ideas that fuller physical and psychological engagement result in enhanced development experiences. Frequency of participation has also been determined to have a positive association with quality of life (Ellis, Compton, Tyson, & Bohlig, 2002).

The index consists of six items describing different categories of recreational sports participation differentiated by on- and off-campus activities, as well as varying competition levels. Because of the diversity of recreation opportunities under the umbrella of campus recreation programs, level of organization and competitiveness was taken into account in order to differentiate from other activities that are offered within campus recreation programs but that do not necessarily resemble sport. Club sports in particular, which represent the most competitive level of organized sports within a campus recreation program, have shown to be associated with outcomes such as planning skills, sense of belonging, and overall leadership development (Haines, 2008). In its initial administration, respondents were asked to list the activities that they performed in each category. After this pilot administration, individual activities were added within each category to facilitate responses and ensure consistent activity placement within the appropriate category.

A scoring index (See Appendix E) was developed to assign each item a single score based on reported time spent on the activity, as well as its level of competitiveness. In considering recreation activity type, responses were indexed based on a competitiveness weight assigned to each activity category from 1 to 6, with '1' representing the least competitive type of activity, and '6' representing the most competitive. Category weights were ordered through agreement by the professional recreational sports program staff at the University of Arkansas. Competitive weights for each category were multiplied by the indicated level of involvement in each category, ranging from 0 (no involvement) to 4 (high involvement). Possible scores on the index could range from 0 to 84, with larger scores representing more recreational sport involvement. The estimate of internal consistency as measured by Cronbach's alpha was .6217, considered to be low but acceptable, particularly in social science research (Murphy & Davidshofer, 1988; O'Rourke et al., 2005).

Procedure

Athletic identity levels, sport transitional loss, recreational sports involvement, and quality of life were assessed in a sample of college freshmen who had played varsity athletics in high school but were not doing so in college. A five-part questionnaire consisting of a demographic questionnaire (See Appendix F), the AIMS, SWLS, Loss in Sport Survey, and Recreational Sports Involvement Index instruments was administered to a sample of 2,827 college freshmen. Of those sampled, only the students who played varsity sports in high school, but were not varsity athletes in college were eligible to complete the survey. The surveys were administered through Snap, a web-based

program, and sent through university email accounts. It took approximately 10 minutes to complete.

Human subjects research approval was obtained through the relevant institutional review board prior to data collection (see Appendix G). A maximum of four email contacts per participant was possible. Participants were sent a notification email prior to receiving the actual survey link. The next email contact contained the actual survey link, and two reminder emails were subsequently sent at weekly intervals to those who had not completed it. Appendix H contains the survey and reminder email scripts. A university login was required to access the survey and prevented the survey from being accessed more than once.

Students' participation was completely voluntary and informed consent was described in the notification email as well as in the three possible subsequent email contacts. Participants were informed in the cover letters that all data would be analyzed as a group, not individually, and that email addresses would not be linked to any of the survey responses. Participants were further instructed to delete or disregard the emails if they did not wish to participate in the survey. Instruments were scored and data were imported into a statistical program for analysis.

Data Analysis

The present study aims to investigate the relationships between campus recreation program involvement, athletic identity, and transitional loss in sport. The AIMS was used to assess participants' athletic identity levels. Scores on the AIMS were used to make inferences regarding the strength and exclusivity of identification with the athlete role. In addition, the Loss in Sport Survey was used to measure participants' feelings of

perceived loss after a transition out of competitive sports. Recreational sport involvement during the freshmen year of college was also measured using the Recreational Sports Involvement Index. Finally, the Satisfaction With Life Scale was used to measure overall perceived satisfaction with life. Scores on the SWLS were used to make inferences regarding each participant's general satisfaction with his or her life at the present time.

Hypothesis one.

The first hypothesis involves the relationship between athletic identity levels and feelings of transitional loss with regard to a terminated high school athletic career. This relationship is hypothesized to be positive, with those having higher athletic identity levels also experiencing greater perceptions of loss. Athletic identity was measured using the Athletic Identity Measurement Scale (AIMS), resulting in one total score ranging from 10 to 70. Transitional loss was measured using the Loss in Sport Survey, and resulted in one total score ranging from 9 to 63. In both variables, greater scores indicate greater presence of the measured variable. Considering the ordinal nature of the Likert-type scales used in the AIMS and Loss in Sport Survey, Spearman rank correlation coefficient was used to examine this relationship (Hatcher, 2003). The selected alpha level was .05.

Hypothesis two.

The second hypothesis involved the prediction of transitional loss from several variables relating to athletic identity and the high school playing experience. Variables included in this examination include athletic identity, the number of sports played, the number of years played, the desire to continue playing varsity sports after high school,

and the level of choice in not playing varsity sports after high school. These variables were assessed in the demographic portion of the questionnaire. A 7-point Likert-type scale was used to measure agreement with a sentence indicating the desire to play varsity sports in college, with a higher score (from 1 to 7) indicating a stronger desire to play. A similar scale was also used to measure agreement with a sentence indicating the level of choice in not playing sports after high school, with a higher score (from 1 to 7) representing a greater level of choice in not playing. A multiple regression analysis was used to establish a prediction equation for transitional loss utilizing athletic identity levels as well as these four variables relating to high school athletic career and desire to continue playing sports after career termination. The R-square selection method was used to determine the variables that should be included in the regression equation. Beta weights and uniqueness indices were consequently used to assess the relative importance of these variables in the prediction of loss.

Hypothesis three.

The third hypothesis examines loss levels as they relate to recreational sports involvement level. It is hypothesized that participants with high recreational sports involvement will experience less loss than those with low recreational sports involvement. Recreational sports involvement was assessed using the Recreational Sports Involvement Index, which contains six items representing various levels of competitiveness. An item score is derived from self-reported time spent on the particular activity category multiplied by the competitiveness weight assigned to each category. Transitional loss is measured using the Loss in Sport Survey, and athletic identity is measured using the AIMS.

Recreational sports involvement was categorized into low, moderate, and high involvement level groups based on cumulative percentage of the distribution. A *t-test* was used to test for differences in loss scores between the low and high involvement groups. The selected alpha level was .05.

Hypothesis four.

The fourth hypothesis examined the effects of interaction between recreational sports involvement and transitional loss levels on overall life satisfaction. It is hypothesized that transitional loss levels and recreational sport involvement levels provide interaction for the main effects of life satisfaction. A factorial ANOVA with two between-subjects factors was used to analyze the relationship between life satisfaction and campus recreation involvement on the basis of transitional loss levels. The predictor variables in this analysis were recreational sports involvement as measured by the Recreational Sports Involvement Index, as well as transitional loss, as measured by the Loss in Sport Survey. Life satisfaction was measured as the outcome variable, and was hypothesized to have a stronger relationship with recreational sports involvement among participants with high loss levels. Main effects for the independent variables of transitional loss and recreational sport involvement were measured on this criterion variable. Interaction between these two predictor variables was also analyzed.

CHAPTER FOUR

Results

The purpose of this study was to examine the role of recreational sport involvement in a positive adjustment process for individuals experiencing transitional loss due to sport role exit. Specifically, former high school athletes experiencing exhausted high school varsity sport eligibility were surveyed to assess athletic identity levels, transitional loss levels, recreational sports involvement, and life satisfaction. Additional variables examined included the number of sports played in high school, the number of years that participants played varsity sports in high school, the level of perceived choice in not continuing to play varsity sports in college, and the desire to be playing varsity sports in college. Data collected for this study were obtained using a web-based survey sent through campus email to a sample of freshman-level students at the University of Arkansas.

Demographic information including gender, number of sports played, and number of years spent playing sports during high school were analyzed to gain a more thorough understanding of potential patterns in the experience of loss after a sport role exit. Additional questions regarding level of choice in not playing college sports, as well as desire to play college sports were also considered in the examination of transitional loss. The instrument then contained the Athletic Identity Measurement Scale, the Loss in Sport Survey, the Recreational Sport Involvement Index, and the Satisfaction With Life Scale.

The following hypotheses were tested:

H1: There is a positive relationship between athletic identity and levels of sport transitional loss.

H2: Transitional loss among college freshmen can be predicted by athletic identity, number of sports played, number of years played, the desire to continue playing varsity sports after high school, and level of choice in not playing varsity sports after high school.

H3: There is less transitional loss among participants at high levels of recreational sports involvement than at low levels of recreational sports involvement.

H4: Among participants with high levels of transitional loss, those with high recreational sports involvement will have greater levels of life satisfaction than those with low recreational sports involvement.

Response Rate

The target population was freshman-level students at the University of Arkansas. A total of 2,827 freshman-level students were sampled and sent a web-based questionnaire through university-provided email accounts. However, only those who played high school sports for at least 2 years (one of them being senior year) and were not currently participating in varsity college athletics were eligible to submit a completed survey. The National Federation of High School Associations (2009) estimates that 55% of students enrolled in high school participate in athletics. The U.S. Department of Education (2009) lists 439 student-athletes enrolled at the relevant institution during the 2008/2009 school year, or approximately 3% of undergraduates. Therefore, the potential

sample for the current study was 52% of 2,827, or 1,470. A total of 102 surveys were returned. Twenty surveys were rejected due to ineligibility or incompleteness. The final sample size for the current study was 82 respondents, or 6%. Eighty-two respondents reflect a convenience sample from those who chose to participate.

Descriptive Analysis of Variables

A total of 82 respondents were included in the analysis. Forty-seven were male and 35 were female. Respondents were classified as freshman level students according to the registrar of the institution at which the sample was collected.

High school sport participation.

High school sport participation was defined as having participated in a varsity-level sport for at least two years during high school. Participants listed each sport they played during each year in high school. As shown in Table 3, track (80) was the sport cited most often, followed by basketball (69), football (60), and soccer (59).

The number of sports played during high school was determined by counting each sport played during each academic year. Participants who played one sport for 4 years were considered to have played 4 total sports. Since participants had to participate in high school sports for a minimum of 2 years to be considered eligible for the purposes of this study, the minimum number of sports possible was 2. As shown in Table 4, the cumulative number of sports played during high school ranged from 2 to 16. Fifty-four participants (66%) played multiple sports during at least one year of high school. The number of years that participants identified themselves as high school athletes ranged from 2 to 4 (see Table 5). Most (79.3%) participants played high school sports for all 4 years.

Table 3

Frequency Distribution of Sport Type

Sport	# Times Cited	Sport	# Times Cited
Track	80	Cheer/Dance	23
Basketball	69	Golf	19
Football	60	Hockey	16
Soccer	59	Tennis	13
Baseball	48	Swim	8
Volleyball	42	Wrestling	6
Cross Country	32	Bowling	4
Softball	29	<u>Lacrosse</u>	4
		Total	512

Table 4

Frequency Distribution of Number of Sports Played

	Number of Sports				
	2-4	5-8	9-12	13-16	Total
Frequency	28	38	15	1	82
%	34.1	46.3	18.3	1.2	100.0

Table 5

Frequency Distribution of Number of Years Played

	2 Years	3 Years	4 Years	Total
Frequency	6	11	65	82
%	7.3	13.4	79.3	100.0

Degree of choice in not playing varsity college sports.

Participants were asked to indicate the degree of choice that they exercised in not playing varsity college athletics on a scale from 1 to 7, with '1' indicating the least agreement, and '7' indicating the greatest agreement. As shown in Table 6, participants indicated slight overall agreement in perceiving a degree of choice in their current status as a college non-athlete ($M=4.99$, $SD=2.04$). Men reported less agreement with this statement than women, ($M(\text{men})=4.68$, $M(\text{women})=5.40$). However, these differences were not significant, $t(82) = -1.59$, $p>.1149$.

Desire to be playing varsity college sports.

Participants were also asked to indicate their level of desire to be currently playing varsity college sports on a scale from 1 to 7, with '1' indicating the least agreement, and '7' indicating the greatest agreement. Although the mean score in the previous variable indicated that participants felt some degree of choice in not playing college athletics, participants also indicated slight overall agreement with wanting to be playing currently ($M=4.54$, $SD=1.69$). As shown in Table 6, men reported slightly more agreement with this statement than women, ($M(\text{men})=4.76$, $M(\text{women})=4.22$). However, these differences were not significant, $t(82) = 1.44$, $p>.1548$.

Table 6

Means and Standard Deviations for Choice and Desire in Varsity College Sports

Variable	Mean	SD
Choice in not playing varsity sports	4.99	2.04
Males	4.68	2.03
Females	5.40	2.00
Desire to be playing varsity sports	4.54	1.69
Males	4.76	1.73
Females	4.22	1.59

Descriptive Analysis of Test Instruments

Measures of central tendency and variability, as well as gender differences, were calculated for four test instruments: the Athletic Identity Measurement Scale, Loss in Sport Survey, Recreational Sports Involvement Index, and Satisfaction With Life Scale. Table 7 displays the means and standard deviations of all four instruments at the conclusion of their descriptions.

Athletic Identity Measurement Scale (AIMS).

Athletic identity levels were assessed using the Athletic Identity Measurement Scale. Participants indicated agreement with 10 statements regarding athletic identity levels on a scale of 1 to 7, with '1' representing strong disagreement, and '7' representing strong agreement. Total scores could range from 10 to 70, with higher scores indicating higher athletic identity levels. The mean score reflected a slight identification with the athlete role among the overall sample, ($M=43.02$, $SD=10.81$). Men reported slightly higher athletic identity levels than women, ($M(\text{men})=45.00$, $M(\text{women})=40.50$). However, these differences were not significant, $t(82) = 1.90$, $p > .0608$. A Shapiro-Wilk test for normality indicated that the instrument scores were normally distributed, ($W=.9719$, $p=.0689$).

Loss in Sport Survey (LISS).

Levels of transitional loss in sport were assessed using the Loss in Sport Survey. Participants reported agreement with nine statements indicating transitional loss on a scale of 1 to 7, with '1' representing strong disagreement, and '7' representing high agreement. Total scores could range from 9 to 63, with higher scores indicating higher levels of loss. The mean score reflected somewhat neutral levels of transitional loss

among the overall sample, ($M=38.49$, $SD=10.14$). Men reported slightly greater levels of loss than women, ($M(\text{men})=39.72$, $M(\text{women})=36.92$). A Shapiro-Wilk test for normality indicated that the instrument scores were normally distributed, ($W=.9774$, $p=.1584$).

Recreational Sports Involvement Index.

Recreational sports involvement was assessed through self-reported involvement levels in six different activity types: (1) competitive individual or team sports that are not university provided, (2) drop-in individual or team sports that are not university provided, (3) sport involvement in which the participant is not an actual participant, (4) club-level sports provided by the university recreation program, (5) intramural sports provided by the university recreation program, and (6) drop-in sports and recreation activities at the university recreation center. Participants reported the amount of time that they spend on each activity type on a scale of 0 to 4, with '0' representing no time, and '4' representing a large amount of time. Responses were then indexed based on rank order of competitiveness level. Possible scores on the index could range from 0 to 84, with larger scores representing more recreational sport involvement and of a more competitive nature. The mean involvement score for the sample was 36.82, ($SD=17.96$). A Shapiro-Wilk test for normality indicated that the instrument scores were normally distributed, ($W=.9796$, $p=.2169$).

Satisfaction with Life Scale (SWLS).

The Satisfaction with Life Scale (SWLS) purports to measure life satisfaction as an aspect of overall subjective well-being. The SWLS consists of five items on which respondents use a 7-point Likert-type scale to indicate their level of agreement, ranging from 1 (strongly disagree) to 7 (strongly agree). A total score is calculated to represent

level of satisfaction. Possible scores could range from 5 to 35. The mean score indicated a moderate level of life satisfaction among participants, ($M=26.95$, $SD=5.60$). A Shapiro-Wilk test for normality indicated that the scale scores were non-normal and negatively skewed. ($W=.9275$, $p=.0002$). SWLS data points were transformed to rank-order format to comply with normality assumptions.

Table 7

Means and Standard Deviations for Study Instruments

Instrument	Range	Mean	SD
Athletic Identity Measurement Scale	(10-70)	Mean	SD
Overall		43.02	10.81
Males		45.00	12.17
Females		40.50	8.26
Loss in Sport Survey	(9-63)	Mean	SD
Overall		38.49	10.14
Males		39.72	9.96
Females		36.92	10.29
Recreational Sports Involvement Index	(0-84)	Mean	SD
Overall		36.82	17.96
Males		38.55	17.95
Females		34.49	17.97
Satisfaction With Life Scale	(5-35)	Mean	SD
Overall		26.95	5.60
Males		27.00	5.32
Females		26.89	6.01

Hypothesis One

The first hypothesis examined the relationship between athletic identity and transitional loss, specifically that there is a positive relationship between athletic identity levels and feelings of loss resulting from varsity sport exit. A Spearman rank correlation was used to analyze this association. A significant positive relationship was found between athletic identity and transitional loss, ($r=.6183$, $p<.0001$).

Participants with higher athletic identity levels also tended to have higher levels of loss associated with sport role exit. This correlation is considered moderate to strong (Hatcher, 2003). The coefficient of determination associated with this correlation is .3823, suggesting that approximately 38% of the variability in transitional loss is associated with variability in athletic identity levels. The hypothesis that there is a positive relationship between athletic identity levels and transitional loss in sports is therefore retained. A stronger identification with the athlete role was associated with a higher degree of loss upon athlete role exit.

Hypothesis Two

The second hypothesis examined the predictive value of several variables on the criterion variable of loss. The hypothesized regression equation involves the following variables: athletic identity, transitional loss, level of choice in not playing college athletics, desire to be playing college athletics, number of sports played, and number of years played. The null hypothesis can be illustrated with the following equation:

Loss = athletic identity + transitional loss + choice + desire + number of sports + number of years.

Bivariate correlations and multiple regression analyses were used to examine the associative and predictive relationships between the predictor variables. Means, standard deviations and Spearman rank correlations, appear in Table 8. Bivariate correlations revealed the predictor variables of athletic identity and desire to be playing college sports to be significantly related to feelings of transitional loss, ($r=.5441, p<.0001$). Three predictor variables were not significantly correlated to loss: number of sports played in high school ($r=.1929, p<.0825$), number of years ($r=.1179, p<.2913$), and degree of choice in not playing college sports ($r=-.0820, p<.4640$).

There were two significant correlations between predictor variables. A significant negative correlation was observed between level of choice in not playing college sports and desire to be playing sports in college ($r=-.3371, p>.0020$). Greater levels of desire to be playing college sports were associated with lower levels of perceived choice in not playing. Athletic identity was also significantly correlated with desire to be playing college sports ($r=.44, p>.0001$). Higher athletic identity levels were associated with greater desire to be playing sports in college.

According to Pedhazur (1997), collinearity refers to correlations among independent variables. While collinearity is not a violation of assumptions in regression analyses, it can distort the estimations of the regression coefficients and should be diagnosed (Freund & Littell, 2000). Pedhazur (1997) warns against diagnosing collinearity based solely on single-order correlations, noting a wide range of regression coefficient values that could be considered problematic. Therefore, variance inflation factors, eigenvalues, and condition indices were also calculated to diagnose collinearity

Table 8

Means, Standard Deviations, and Intercorrelations of Predictor Variables

Variable	M	SD	1	2	3	4	5
1. Loss	38.83	9.37					
2. Number of sports	6.13	2.59	.19				
3. Number of years	3.72	.59	.12	.47			
4. Choice in not playing	4.99	2.04	-.08	-.06	.06		
5. Desire to be playing	4.54	1.69	.54*	.17	-.05	-.34**	
6. Athletic identity	43.02	10.81	.62*	.12	.05	-.09	.44*

< .0001

**p < .002

*p

among independent variables. Estimates of variance inflation ranged from 1.12 to 1.34. The close range of these estimates, as well as the low value, indicated that collinearity did not increase error in the regression coefficients (Freund & Littell, 2000). Table 9 illustrates eigenvalues and condition indices in order from largest eigenvalue to smallest. Low magnitude and small variability among eigenvalues indicate a low degree of multicollinearity. In addition, condition indices ranged between 1.00 and 1.86, indicating a lack of linear dependencies among variables. Further investigation regarding collinearity is recommended for condition indices over 30 (Freund & Littell, 2000).

Using multiple regression analysis, transitional loss resulting from sport role exit was then regressed on the following variables: athletic identity, number of sports played, number of years played, degree of choice in not playing college sports, and desire to be playing college sports. The overall regression equation showed significance, $F(5, 76) = 16.57, p < .0001$. These five variables accounted for 52% of the total variance in loss.

As shown in Table 10, beta weights and uniqueness indices were further considered to determine the relative importance of the five variables in the prediction of loss. Beta weights are standardized regression coefficients, and are considered appropriate to review in considering the relative importance of predictor variables when these variables have intercorrelations. (O’Roarke et al., 2005). Uniqueness indices measure the percentage of variance accounted in the criterion variable by a single predictor. Athletic identity and desire to be playing college sports showed significant beta weight, indicating that they account for a significant amount of variance in loss. Using the R-square selection method, a two-variable model is chosen as the optimum

Table 9

Eigenvalues, and Condition Indices for Regression Predictor Variables

Number	Eigenvalue	Condition Index
1	1.72	1.00
2	1.37	1.12
3	.89	1.39
4	.52	1.82
5	.50	1.86

Table 10

Beta Weights and Uniqueness Indices in Multiple Regression Analyses Predicting Loss

Predictor	<i>B</i>	<i>SE B</i>	β	<i>t</i>	Uniqueness Index
Number of sports	.22	.33	.06	.69	.003
Number of years	2.00	1.43	.13	1.40	.0124
Choice in not playing	.19	.38	.04	.51	.0017
Desire to be playing	1.97	.51	.35	3.85*	.0935*
Athletic identity	.40	.08	.46	5.19**	.1697**

* $p = .0002$ ** $p < .0001$

Note. $R^2 = .52$ ($F[5, 76] = 16.57$, $p < .0001$ for predictor variables).

subset model to best represent variability in loss. The inclusion of athletic identity and desire to be playing college sports into a regression equation results in a .4925 R-square value, indicating that 49% of the variability in loss can be accounted for by these two variables.

It was hypothesized that five variables contributed to variability in transitional loss: athletic identity, transitional loss, level of choice in not playing college athletics, desire to be playing college athletics, number of sports played, and number of years played.

Although the full regression equation has significant predictive value for transitional loss, a two-variable model including athletic identity and desire to be playing college sports is the most useful subset model.

Hypothesis Three

The third hypothesis examined feelings of transitional loss as they relate to recreational sports involvement level. Specifically, it was hypothesized that those with higher recreational sports involvement levels would experience lower levels of loss.

Recreational sports involvement scores were categorized into low, moderate, and high involvement based on the cumulative percentage of the total distribution. An independent samples t-test was used to compare loss levels between those in the low and high recreational sports involvement groups. This analysis illustrated a significant difference between these two groups, $t(54) = -2.37, p < .05$. However, this difference was not in the hypothesized direction. As shown in Table 11, those in the high involvement group had significantly higher levels of loss ($M=41.6, SD=10.82$) than those in the low involvement group ($M=35.46, SD=8.14$). The observed difference between means was -6.14 and the 95% confidence interval for the difference between means was -11.33 to

Table 11

T-test Summary Table for Loss by Involvement Level

Recreational Sports Involvement Level	Mean	SD	t	p
Low	35.46	8.14	-2.37	.0215
High	41.60	10.81		

-.94. The effect size was calculated by dividing the difference between means by the pooled estimate of the population standard deviation. This calculated effect size was .63, which is considered to be a medium effect (O'Rourke et al., 2005). The hypothesis that those with higher levels of recreational sports involvement would feel lower levels of loss was then rejected. Participants who had high involvement in recreational sports activities actually experienced more loss than those with low involvement.

Hypothesis Four

The fourth hypothesis examined the criterion variable of life satisfaction as it relates to both recreational sports involvement and transitional loss levels. Specifically, it was hypothesized that those with high transitional loss levels would experience more life satisfaction with high recreational sports participation than with low participation.

A multifactor analysis of variance with two between-subjects factors was utilized to determine whether the predictor variables of loss and recreational sports involvement act individually or in combination regarding the criterion variable of life satisfaction. The distributions of loss scores and involvement scores were divided into thirds based on cumulative percentile, and the top and bottom thirds of each distribution were used as high and low categories for each variable. The resulting ANOVA included two categorical predictor variables (loss and involvement) and one continuous criterion variable (life satisfaction). Least squares means were utilized in order to reduce bias from unequal cell sizes, and are referred to as means in this analysis. Means and standard deviations of life satisfaction scores for each cell of the ANOVA are shown in Table 12.

Table 12

Least Squares Means and of Life Satisfaction Scores Within ANOVA Cells

		Predictor A:		
		Recreational Sports Involvement Level		
		Low	High	Total
		————	————	————
Predictor B: Transitional Loss	Low	M=40.10	M=35.75	M=37.93
	High	M=7.60	M=58.38	M=32.99
	Total	M=23.85	M=47.06	

N=37

The analysis revealed significant interaction between loss and recreational sport involvement on the variable of life satisfaction, $F=12.34, p=.0013$. Satisfaction scores were affected by the two predictor variables in combination. Results of the analysis are shown in Table 13.

Main Effect of Recreational Sports Involvement.

Two predictor variables were analyzed to determine main effects on the criterion variable of life satisfaction. On the first predictor variable, recreational sports involvement, the mean life satisfaction score for the low-involvement group was 23.85, while mean score for the high-involvement group was 47.06. This difference was significant between high and low involvement levels, $F(3,33)=8.75, p=.0057$. In the analysis, the effect size (R^2) was computed as .16, which is considered small (Cohen, in Hatcher, 2003).

Main Effect of Transitional Loss.

On the second predictor variable, transitional loss, the mean life satisfaction score for the low-loss group was 37.93, while the mean score for the high-loss group was 32.99. Transitional loss scores indicated a non-significant main effects relationship with life satisfaction scores, $(F(3, 33) = 0.40, p = .5336)$. In the analysis, the effect size (R^2) was computed as 01. This indicated that the level of transitional loss accounted for only 1% of the variance in life satisfaction, and is considered very small (Cohen, in Hatcher, 2003).

Interaction Between Loss and Involvement Levels.

The analysis revealed a significant interaction between recreational sports

Table 13

ANOVA Summary Table for the Relationship Between Recreational Sports Involvement (A), Transitional Loss (B), and Life Satisfaction

Source	df	SS	F	p	R ²
Level of Involvement (A)	1	3471.59	8.75	.0057	.16
Level of Loss (B)	1	157.07	0.40	.5336	.01
A x B Interaction	1	4894.66	12.34	.0013	.23
Within groups	33	13093.21			
Total	36	21064.19			

involvement and transitional loss levels, $F(3, 33) = 12.34, p = .0013$. Figure 2 demonstrates the nature of this interaction.

Follow-up analyses indicated that there was a simple effect for involvement at the high loss level. For participants in the high-loss condition, greater levels of recreational sports involvement were associated with higher levels of life satisfaction, $F(1, 17) = 15.93, p = .0009$. Within the high loss group, those with high recreational sports involvement levels had significantly higher life satisfaction scores than the low involvement group. The simple effect for involvement level in the low loss group was not significant, $F(1, 16) = 0.22, p = .6461$. The hypothesis that there is a stronger relationship between recreational sports involvement and life satisfaction among those with higher transitional loss levels was therefore retained.

Considered alone, more recreational sports involvement was associated with higher life satisfaction levels. However, differences in transitional loss levels were not associated with differences in life satisfaction levels. Considered together, however, both recreational sports involvement and loss levels are associated with variability in life satisfaction levels. Specifically, there is a significant effect for involvement level at high loss levels. In the high loss condition, participants with high levels of recreational sports involvement had significantly higher life satisfaction levels than those with low levels of recreational sports involvement.

Figure 2. Mean Life Satisfaction Scores as a Function of Recreational Sports Involvement Level and Transitional Loss Level

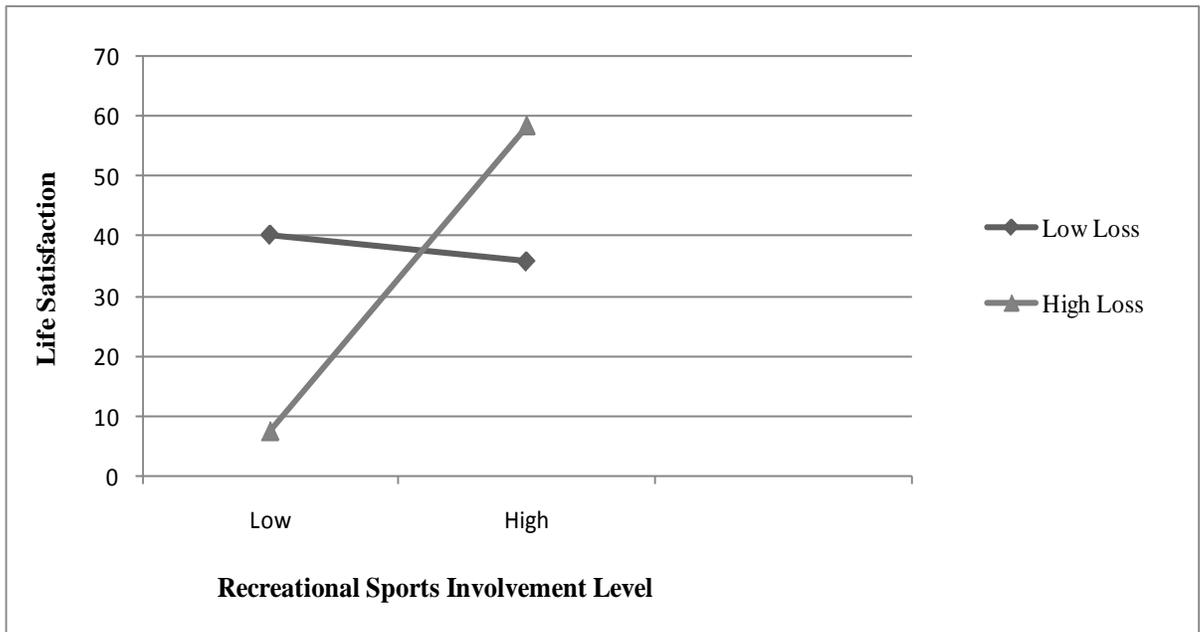


Figure 2. Interaction of loss level and recreational sports involvement level on life satisfaction.

CHAPTER FIVE

Summary and Conclusions

The purpose of this study was to examine the relationships between athletic identity, transitional loss, and recreational sports participation as they relate to overall life satisfaction. Specifically, this study purported to determine any positive implications of recreational sports participation on successful transition experiences for those experiencing loss following a sport role exit.

Summary of Procedures

This study utilized a convenience sample of 82 freshman-level participants at the University of Arkansas. To be eligible, participants must have competed in varsity athletics during high school, but were not doing so in college. A sample of freshman-level college students was emailed with a link containing online survey instruments in the late spring of the academic year. The survey instruments consisted of a demographic survey, the Athletic Identity Measurement Scale (AIMS), the Loss in Sport Survey (LISS), the Recreational Sports Involvement Index, and the Satisfaction With Life Survey (SWLS). Hypotheses were tested using bivariate correlation, multivariate regression, t-tests, and factorial ANOVA.

Summary of Findings

Choice in sport exit and desire for sport role continuation.

Level of choice in not playing college sports and level of desire to play college sports were deemed to be important factors relating to the degree of loss that participants experienced after a transition out of sport. Adler and Adler (1991) noted that lack of control over the retirement can result in feelings of helplessness and frustration. Further,

lack of control and irreversibility, which are characteristic of school-related athletic career exits, are other factors that contribute to emotional distress (Adler & Adler, 1991). Degree of choice in sport exit and desire to continue were therefore considered important to assess within the scope of the study, as they have been reported to affect the level of distress experienced by athletes during transition. In addition, it was not necessarily assumed that all who participate in sports want to keep doing so indefinitely. Factors such as transition readiness or personal motivation were considered when choosing to examine the level to which participants wished to continue playing sports at the varsity level.

Participants in the current study indicated that they perceived a small degree of choice in their decision to not play varsity sports in college. This finding is somewhat contradictory with Wiechman and Williams's (1997) finding that 54% of high school seniors expected to play college sports, resulting in a large discrepancy in the number of athletes who expect to play sports in college with those who actually do play. However, while participants felt that they exercised some degree of choice in not playing sports, they felt a similar degree of desire to be currently playing varsity sports for their college. Webb et al. (1998) found that even when sport exits are planned, athletes can still experience loss and adjustment difficulties. Similar to these findings, the degree of choice participants felt in not continuing a varsity sports career was negatively correlated with their wish to still be playing. Participants who felt more choice in not playing college sports also reported less desire to be doing so.

This perception of control regarding sport exit is important in understanding subsequent adjustment and life satisfaction, particularly among the population in

question. Webb et al. (1998) reported a negative relationship between perceived control over athletic retirement and life satisfaction. This relationship was strongest among athletes who were unable to participate at the next level of competition. The results of the current study add to the notion that the perception of control regarding retirement has important implications in subsequent adjustment by identifying the wish to continue in a sport role as varying according to perceived control over the role exit.

Hypotheses.

The following hypotheses were tested in examining the relationships between study variables. Specifically, hypotheses assessed the relationship between athletic identity and transitional loss, as well as the predictive value of chosen variables on transitional loss levels. Further examination involved variability of loss levels according to recreational sports involvement level. Finally, life satisfaction was assessed as it varied according to both loss and recreational sports involvement levels. Figure 3 illustrates the nature of the proposed hypotheses regarding the variables mentioned.

Figure 3. Proposed Relationship Between Study Variables

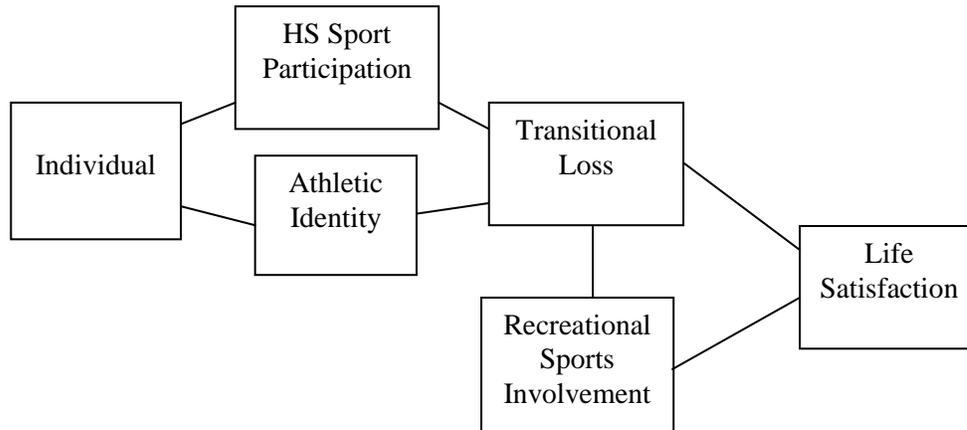


Figure 3. Variables derived from individual perspectives are high school sport participation and athletic identity, which are examined for predictive value of transitional loss. Loss levels are compared according to recreational sports involvement level. Transitional loss and recreational sports involvement are examined in combination regarding the outcome variable of life satisfaction.

Hypothesis One: There is a positive relationship between athletic identity and levels of sport transitional loss. This hypothesis was supported with a significant correlation between Athletic Identity Measurement Scale and Loss in Sport Survey scores. As athletic identity levels increased, feelings of loss also increased. This relationship was considered to be moderate to strong (Hatcher, 2003). This finding supports previous conclusions regarding the potential for athletic identity to contribute to emotional distress following sport role exit (Webb et al., 1998, Brewer, 1993, Lavallee et al., 1997).

Hypothesis Two: Transitional loss can be predicted by athletic identity, number of sports played, number of years played, desire to continue playing varsity sports, and level of choice in not playing college sports. This regression equation was found to significantly predict transitional loss levels. Specifically, athletic identity and desire to be playing varsity sports were determined to be predictive of nearly half of the variance in transitional loss scores. While the association between athletic identity and transitional loss has been well-established, adding the concept of desire to be continuing the athletic career provides a richer picture of this association. Variables that were not significant predictors in the selected regression equation were the number of sports played during the high school athletic career, the number of years in which participants played sports during high school, and the level of choice that participants perceived in ending their roles as varsity athletes.

Hypothesis Three: There is less transitional loss among participants at high levels of recreational sports involvement than at low levels of recreational sports involvement. Although there was a significant difference in loss levels between the high

and low recreational sports involvement groups, it was not in the hypothesized direction. While it was hypothesized that recreational sports participants with high levels of frequency and competitiveness would experience lower loss levels, the opposite was actually found. Participants with high levels of recreational sports involvement experienced greater loss levels than those with low recreational sports involvement levels. This finding builds upon previous research regarding the helpfulness of recreational sports participation in adjustment after sport role exit (Adler & Adler, 1991, Brown & Potrac, 2009, and Collinson & Hockey, 2007). However, it adds to the applicability of this activity in providing an idea of participation patterns by particular populations. Perhaps those with higher loss and athletic identity levels are more attracted to competitive recreational sports activities, giving this type of activity heightened consideration in quality of life applications.

Hypothesis Four: Among participants with high levels of transitional loss, those with high recreational sports involvement will have greater levels of life satisfaction than those with low recreational sports involvement. While the last hypothesis concluded that more recreational sports involvement doesn't necessarily alleviate feelings of transitional loss, the fourth hypothesis examined how recreational sports involvement could contribute to life satisfaction levels. Life satisfaction scores were compared between participants with high and low levels of transitional loss, as well as those with high and low levels of recreational sports involvement. Scores were then compared between individual cells in each of the 4 conditions (high loss/high involvement, high loss/low involvement, low loss/high involvement, and low loss/low involvement) to determine any interaction effects between the variables of transitional loss and recreational sports

involvement levels on the outcome variable of life satisfaction. This hypothesis purported to examine differences in life satisfaction scores accounted for by the combination of loss and recreational sports involvement levels.

A significant main effect for recreational sports involvement was found for life satisfaction scores. That is, those with high involvement levels had higher satisfaction levels than those with low involvement levels. Specifically among those with high transitional loss levels, high recreational sports involvement was associated with greater life satisfaction. This difference in satisfaction between high and low involvement levels was not observed in the low loss group. Although the previous hypothesis demonstrated that those with high recreational sports involvement levels also tend to experience higher loss levels, this finding suggests that despite high loss levels, high recreational sports involvement contributes to greater life satisfaction levels.

Athletic Identity and Transitional Loss

In the current study, athletic identity levels were found to be moderate to strongly related to the level of loss that participants experienced relative to their exit from varsity sports. Webb et al. (1998) reported that the difficulty of sport retirement was positively related to athletic identity levels. Similarly, Lavalley et al. (1997) described greater difficulty with emotional adjustment as athletic identity levels increased. In the current study, loss relative to one's identification with the athlete role was examined and contextualized within a specific type of role exit involving forced exit due to exhausted eligibility.

Vulnerability to loss due to role cessation.

According to Palmer (1981), role rejection is widespread and a “major source of stress” (p. 133). Palmer (1981) also pinpoints role rejection as being an especially salient problem within the highly competitive society that exists in the United States. In the current study, those who identified more strongly with the athlete role were found to also experience greater loss related to exit from that role. Assessing loss levels relative to athlete role exit are important in the identification of a population that is especially vulnerable to stress resulting from this exit. Brown & Potrac (2009) note that forced sport exits are particularly difficult because of a certain implication of failure. Heyman (1986) notes that those not qualifying to participate in increasingly competitive situations, such as high school athletes not receiving college scholarships, are especially vulnerable to this loss of self. The current study supports these ideas that the athletics arena is particularly influential in self-identification, and therefore has heightened potential to create loss upon exit. Because of the popularity of sports participation, as well as the wide-spread opportunity for forced sport exit, identifying a source of loss related to this role is valuable in creating opportunities for positive adjustment. Knowledge, attitudes, and perceptions related to role stress are areas where coping and adjustment to such stress can occur (Palmer, 1981). Further establishing the link between athletic identity and loss due to athlete role exit, therefore, could have positive implications in adjustment from related loss.

Factors contributing to loss.

The variables determined to be the most predictive of transitional loss after sport exit were athletic identity and the desire for sport role continuation. Distinguishing

specific conditions that may contribute to higher loss levels after sport exit can be valuable in further helping to identify those for which sport exit may be particularly stressful. As expected, athletic identity significantly contributed to variability in loss levels. In addition, those who indicated a greater wish to be continuing their athletic careers as varsity college athletes also experienced greater loss levels. Knowledge of desire for sport role continuation as a significant contributor to loss has particular implications in the provision of sports opportunities for former high school athletes in college. Campus recreation programs could be a way in which this population could continue in sport-related roles.

Variables that were not selected as significantly contributing to variation in transitional loss levels were the number of sports played throughout the high school career, the number of years during high school in which participants played sports, as well as the degree of choice that participants felt in not continuing their varsity athlete roles. The finding that the quantity or duration of sports played doesn't necessarily predict transitional loss levels is consistent with the notion that effort expended and internal commitment to the activity may be more predictive of identification with it. Horton and Mack (2000) found that those with the slowest race times had similar athletic identity levels as those with the fastest, and speculated that athletic identity may be related to the amount of effort expended rather than specific performance outcomes. The current study adds to the notion that vulnerability to loss may not be limited to those who play the most sports, but may instead be more internal, and perhaps consisting of individualized factors such as personal motivation, activity enjoyment, or identification with the activity.

The level of choice that participants perceived in not continuing their varsity athletic careers was negatively associated with the desire to continue playing. However, choice level was not seen to significantly predict transitional loss levels. This is somewhat contradictory to Brown & Potrac's (2009) description of more salient emotional distress in the case of enforced sport exit. Webb et al. (1998) also described the level of choice in athletic career termination as being influential in perceptions of control and adjustment capabilities. Perhaps perceived choice regarding sport exit is more influential in areas contextualizing loss, such as feelings of control over the situation, rather than loss itself. In addition, former high school athletes may have greater acceptance of exhausted eligibility, but feel more distressed about their sport exit when faced with peers who are able to continue in their athlete roles. Maturation, graduation, and transition to college may help alleviate stress caused by the specific conditions of the end of the high school athletics career. However, these former athletes must still interact with fellow students who are able to continue playing sports in college, perhaps making the notion of role continuance more salient and immediately stressful.

Recreational Sports Involvement

The role of recreational sports participation in the relationships between athletic identity, loss, and life satisfaction was examined with regard to adjustment capability. Higher levels of transitional loss were found to be more characteristic of those who participated in greater amounts of recreational sports involvement at higher competition levels. In addition, those reporting more involvement in recreational sports also reported greater life satisfaction. Participants reporting low loss levels did not report greater life satisfaction with more recreational sports involvement. However, those reporting high

loss levels also had significantly higher life satisfaction levels when highly involved in recreational sports.

Relationship with transitional loss.

Feelings of transitional loss were associated with greater recreational sports involvement. That is, those who participated in greater amounts and more competitive levels of recreational sports also reported higher loss levels. This relationship was found to be in the opposite direction as originally hypothesized. This hypothesis was based in part on Grove's et al. (1997) finding that those with high athletic identity levels rely more on disengagement and avoidance-oriented coping when faced with transitional loss. A possible explanation for this outcome is that in the current study, recreational sports opportunities were highly available to the study sample. When opportunities are made available, those experiencing higher loss may be able to alleviate these feelings by seeking more competitive activities and devoting more time to them. Considering that the desire for sport role continuation was found to be predictive of transitional loss, those with higher loss levels may seek opportunities for sport continuation more than those with lower loss levels.

Relationship with life satisfaction.

While those with high loss tended to participate more frequently in more competitive recreational sports activities, they also reported greater levels of life satisfaction. This effect was not seen among those with low loss levels. That is, those with high levels of loss experienced greater gains in life satisfaction with high levels of recreational sports participation than those with low loss. Those experiencing high levels of loss are of the most concern when considering ways to mitigate the distress due to

adjustment difficulty. The current study demonstrates that this group stands to gain the most through participation in appropriate recreational sports programs.

The relationship between recreational sports involvement and life satisfaction following sport role exit seems consistent with previous research identifying sport continuation at a recreational level as a positive way to re-frame relationships with sport. Collinson & Hockey (2007) described how athletes retaining personal and social identities as runners during long-term injury periods experienced “not too great a dissonance” between current and idealized self-images (p. 394). In addition, Lavalley et al. (1998) note that consequences of an abrupt cessation also include the cessation of positive outcomes of sport such as independence, confidence, routine, social ties, and status. The current study, therefore, seems to support the idea of recreational sports participation as a way for athletes to retain some of the positive aspects of heavy identification with sport that may contribute to quality of life perceptions.

Implications for recreation practitioners.

The ability to identify a population for whom recreational sports involvement could be particularly helpful holds valuable implications for recreation practitioners. A specific implication for practitioners involves the value of being familiar with the needs of their audiences regarding athletic identity and consequences of sport exit. Knowing that sport role exit is common, can occur for a variety of reasons, and results in emotional distress and identity loss is valuable in providing purposeful programming. Considering the relationship with desire to continue in sport roles with loss upon role exit, recreation program providers should offer opportunities for sport role continuation through a variety of sport activities at various competition levels.

Another implication for recreation practitioners regarding the ability of recreational sports to facilitate adjustment for those experiencing high transitional loss involves the potential to shift focus on participation from specific, acute sport experiences to more longitudinal orientations. Over-commitment to such acute sport situations can result in being poorly prepared to adjust to life without those activities (Pearson & Petitpas, 1990). Recreational sports programs have the ability to provide participation opportunities that can be enjoyed throughout life, rather than for a specific eligibility period. In addition, through lifetime-oriented programming, recreation practitioners are also able to provide leisure skill enhancement and activity exposure that can help diversify activity interests. This approach is advocated by Brown and Potrac (2009), who indicate that continuation of competitive sports at more recreational levels can be sustained for long-term participation and be included in a well-balanced life.

Implications for Campus Recreation

The current study reflects important implications for the support and development of high-quality recreational sports programs within university communities. Specifically, the identification of additional benefits of such programs is valuable in facilitating student success and retention, as well as in providing justification for program support from administration. Further implications of the identification of additional outcomes of campus recreation programs are significant in program design and marketing efforts to potential participants.

Contribution to persistence and retention.

Results of the current study indicate that a specific population for whom recreational sports may contribute to positive adjustment following sport exit are college

students who may be experiencing transitional loss following the end of their high school athletic careers. Such loss may be part of larger adjustment difficulties in the college experience. Student success and retention are a high priority for higher education institutions. In describing the wide-ranging institutional effects of student success, Greene and Greene (2003) note that “what is good for the students can be equally good for an institution”, and that good retention “signifies strong campus morale, engagement and financial well-being for the institution” (p. 20). Financial implications of retaining students are large, with significant expenditures by state and federal governments on students who never finish college (American Institutes for Research, 2010). Adding to the knowledge of what might contribute to student persistence, especially in the first year of college, can be valuable information for institutions, as well as increased support for programs such as campus recreation.

According to the National Federation of State High School Associations (2009), 55% of high school students participate in athletics. Additionally, Wiechman and Williams (1997) reported that over half of high school seniors expected to play sports upon going to college. As hypothesized in the current study, a significant contributor to feelings of loss included higher desire to continue in a varsity athlete role in college. Considering the large proportion of high school students who participate in athletics during high school, as well as the large and unrealistic number who expect to continue in college, the potential for stress resulting from related role exit is significant. The findings related to recreational sports participation and life satisfaction levels in the current study support knowledge regarding the potential of campus recreation programs to contribute to the adjustment of this population to life after varsity sports.

While only a small percentage of high school athletes will be able to continue playing sports at the varsity level in college, recreational sports programs provide another means through which non-varsity athletes can continue to participate in sports activities. Recreational sports program provision is increasingly being investigated as a resource for development during college. Astin (1999) specifically names sports activities as having a positive effect on persistence in college. Additionally, Haines (2008) reported that club sports participants like college significantly more than non-participants. The National Intramural-Recreational Sports Association (2002) reports recreational sports programs as the fifth (of 21) most significant determinants of satisfaction in college. The current study adds to the understanding of the value of recreational sports in student recruitment, development, and retention efforts by offering an explanation of one way in which they might contribute.

Campus recreation program justification.

In addition to implications with adjustment and retention of students in college, the results of the current study provide further support for the inclusion of campus recreation programs as valuable components of student development efforts on college campuses. Positive outcomes of campus recreation programs are well-documented, including increased happiness, increased satisfaction with college, improved emotional well-being, and reduced stress (National Intramural-Recreational Sports Association, 2002). Lindsey and Sessoms (2006) further describe recreational sports facilities and programs as influential in students' decisions to attend and stay at a particular school. The National Intramural-Recreational Sports Association (2008) lists 174 colleges involved in recreation facility construction, expansion, or renovation projects totaling

\$3.96 billion. Such efforts and resources recently dedicated to campus recreation is reflective of increasing recognition of campus recreation as an important component of gaining and sustaining enrollment (Kampf, 2010). The current study adds to the knowledge of how campus recreation participation can increase persistence and satisfaction with college, which in turn affect student success, retention, and future development. These findings provide further justification for campus recreation programs in general and strengthen the notions that such departments deserve adequate placement and funding within colleges and universities.

Directed marketing efforts.

A specific implication for campus recreation programming includes outreach specifically toward students experiencing transition out of sport. Sport exit can be particularly devastating to younger athletes due to heightened commitments to the athlete role (Webb et al., 1998). Melendez (2006) notes that that students athletes who are removed from competition are often left feeling “isolated and unsupported” upon sport exit (p. 52). Campus recreation administrators should consider these perceptions and more actively seek out participants who need such support. Increased efforts and more purposeful marketing towards freshmen-level students in particular, as well as emphasis on program availability during recruitment and orientation programs, might be helpful in offering services to incoming students. Increased awareness of campus recreation programs might also be helpful for coaches, counselors, and other high school personnel who assist in college preparatory efforts. Just as life skills programs exist in many NCAA institutions, similar efforts could be made by high school personnel to enable the student to identify resources that can be helpful. In fact, Brown and Potrac (2009)

identify mentoring athletes who will not go on to the next level as an “obligation” for coaches (p. 155).

Recommendations for Further Study

The current study builds upon Brewer et al.’s (1999) call for identification of self-regulatory coping strategies when dealing with emotional difficulty following a sport role exit. Specifically, they suggest methods beyond merely the adjustment of athletic identity levels. Recreational sports participation is one such method that is advocated in particular by Adler and Adler (1991), Collinson and Hockey (2007), and Brown and Potrac (2009) as a shield from disengagement, a way to retain continuity of identity, and a way to adjust activities to a lifetime leisure orientation. Participation in recreational sports following a competitive sport exit appears to present a means to greater satisfaction despite the retention of high athletic identity and transitional loss levels.

Timing considerations.

In the current study, athletic identity and transitional loss were assessed at one point in time. These constructs are flexible, and can develop and change according to time and circumstances (Brewer et al., 1999). While the current study measures these variables according to the current level of recreational sports participation, future research examining the change in these variables over time could also be beneficial. Age and maturation have been shown to decrease athletic identity levels, and taking longitudinal measures into account could provide a more accurate picture of how adjustment occurs over time (Brewer et al., 1999). Further exploring ways in which athletic identity and transitional loss fluctuate during college can have further implications for program intervention. Campus recreation programs might consider

weighted importance of marketing efforts towards certain age or demographic groups, based on increased potential for loss or adjustment capability.

The current study measured athletic identity, transitional loss, and life satisfaction at the end of freshman year. Maturation during the freshman year could have facilitated adjustments in these constructs that are attributable to factors other than recreational sports participation. In addition to campus recreation, multiple programs such as student activities and resident life exist to provide similar extracurricular development. While beneficial outcomes of campus recreation have been identified, it is difficult to isolate adjustment related to campus recreation in a broader context of multiple student development programs. Testing earlier during the freshman year may provide construct measurements that are less influenced by maturation or other developmental programming efforts.

Loss and recreational sports involvement relationship.

Further examination regarding the relationship between transitional loss levels and recreational sports involvement levels is recommended to better understand the specific population that tends to participate more heavily in competitive recreational sports. Loss levels were found to be higher in those who were the most involved in recreational sports. While it was hypothesized that recreational sports involvement would be related to lower levels of transitional loss, the opposite was found. This finding is valuable in understanding ways in which those experiencing greater loss might attempt to adjust. Collinson and Hockey (2007) identify a need for more research regarding how individuals actively cope with loss in sport. The finding that those who participated more in competitive recreational sports has implications for better understanding the types of

activities that those experiencing high loss might seek. Knowing that those who participate in more competitive activities are more likely to be experiencing higher levels of loss following sport exit can be helpful in program and league design. Recreational sports program design could incorporate elements of varsity sport that are deemed to be important to satisfaction of participants, such as structure, team identification, or recognition.

Another consideration for future research regarding the tendency of those highly involved in recreational sports to also have higher loss levels involves the ability for positive adjustment to occur despite high loss levels. The results of the current study support previous findings that heavier recreational sports users are happier than other students (National Intramural-Recreational Sports Association, 2002). Interestingly, in the current study, those who were more heavily involved in recreational sports experienced both higher levels of loss and higher satisfaction levels. It seems that higher satisfaction can occur despite loss, as long as there are appropriate program opportunities to address loss. The ability of high loss and high satisfaction to co-exist in certain conditions is highly relevant to directing adjustment efforts. Perhaps the goal of programs designed to help athletes adjust to sport role exits should focus not on the specific alleviation of loss, but on quality of life issues that can exist despite or alongside of loss.

Competition and serious leisure.

Another implication for future research involves further isolating competition level as an independent variable in examining the role of recreational sports participation as a determinant of life satisfaction, especially following a sport transition. Stebbins

(2001) noted that the regular practice sessions and competitions that are characteristic of serious leisure activities can help maintain a sense of routine. The current study stratified varied competition levels in order to differentiate the diverse forms that recreation activities can take. Haines (2008) noted that club sports programs in particular have potential for positive outcomes due to their emphasis on student leadership. Further examining this recreation activity characteristic, however, could be useful in determining specific activities that are more strongly associated with positive adjustment.

Many of the coping strategies for transitional loss discussed in the review of literature involve cognitive measures such as identity adjustment, developmental measures such as alternate skill or interest development, or physical measures such as continued sport participation at an allowable level. While the current study addresses a mechanism of a physical nature, many sport role exits occur due to age or injury. In these cases, continued sport participation may not be feasible. The current study examined the amount of time and competitiveness level of recreational sports activities in their adjustment potential. These activity qualities could be extrapolated beyond sport participation into other activities that are less physical in nature and examined for adjustment potential.

REFERENCES

- Adler, P. A., & Adler, P. (1991). *Backboards & blackboards: College athletes and role engulfment*. New York, NY: Columbia University Press.
- American Institutes for Research. (2010). *Finishing the first lap: The cost of first-year student attrition in America's four-year colleges and universities*. Retrieved from:
http://www.air.org/files/AIR_Schneider_Finishing_the_First_Lap_Oct101.pdf
- Anderson, C. E. (2004). Athletic identity and its relation to exercise behavior: Scale development and initial validation. *Journal of Sport & Exercise Psychology*, 26, 39-56.
- Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40(5), 518-529.
- Astin, A. W. (1993). *What matters in college?: Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Baily, R. (2006). Physical education and sport in schools: A review of benefits and outcomes. *Journal of School Health*, 76(8), 397-401.
- Blumenthal, K. J. (2009). Collegiate recreational sports: Pivotal players in student success. *Planning for Higher Education*, 37(2), 52-62.
- Brewer, B. W. (1993). Self-identity and specific vulnerability to depressed mood. *Journal of Personality*, 61(3), 343-364.
- Brewer, B. W., Selby, C. L., Linder, D. E., & Petitpas, A. J. (1999). Distancing oneself from a poor season: Divestment of athletic identity. *Journal of Personal and Interpersonal Loss*, 4, 149-162.

- Brewer, B. W., VanRaalte, J., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel? *International Journal of Sport Psychology*, 24, 237-254.
- Brown, G., & Potrac, P. (2009). 'You've not made the grade, son': De-selection and identity disruption in elite level youth football. *Soccer & Society*, 10(2), 143-59.
- Collinson, J. A. & Hockey, J. (2007). 'Working out' identity: Distance runners and the management of disrupted identity. *Leisure Studies*, 26(4), 381-398.
- Deiner, E., Emmons, R. A., Larsen, R., J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Eldridge, W. D. (1983). The importance of psychotherapy for athletic related orthopedic injuries among adults. *International Journal of Sport Psychology*, 14, 203-211.
- Ellis, G. D., Compton, D. M., Tyson, B., & Bohlig, M. (2002). Campus recreation participation, health, and quality of life. *Recreational Sports Journal*, 26(2), 51-60.
- Freund, R. J., & Littell, R. C. (2000). *SAS system for regression* (3rd ed). Cary, NC: SAS Institute, Inc.
- Gould, J., Moore, D., McGuire, F., & Stebbins, R. (2008). Development of the Serious Leisure Inventory and Measure. *Journal of Leisure Research*, 40(1), 47-68.
- Greene H., & Greene, M. (2003). Yes, student retention is an admissions issue. *University Business*, 6(7), 20-21.

- Grove, J. R., Lavallee, D., & Gordon, S. (1997). Coping with retirement from sport: The influence of athletic identity. *Journal of Applied Sport Psychology, 9*, 191-203.
- Haggard, L. M., & Williams, D. R. (1992). Identity affirmation through leisure activities: Leisure symbols of the self. *Journal of Leisure Research, 24* (1), 1-18.
- Haines, D. (2008). *Collegiate sport club volleyball participant outcomes project report*. Columbus, OH: National Research Institute for College Recreational Sports & Wellness.
- Hatcher, L. (2003). *Setp-by-step basic statistics using SAS*. Cary, NC: SAS Institute, Inc.
- Herman, C. R. (2002). *Transitional loss & athletic identity: An ethical obligation to assist NCAA athletes through the retirement process*. (Doctoral dissertation, University of Idaho). Retrieved from <http://proquest.umi.com>
- Heyman, S. R. (1986). Psychological problem patterns found with athletes. *The Clinical Psychologist, 39*, 68-71.
- Horton, R. S., & Mack, D. E. (2000). Athletic identity in marathon runners: Functional focus or dysfunctional commitment? *Journal of Sport Behavior, 23*(2), 101-119.
- Huesman, R. L., Brown, A. K., Lee, G., Kellogg, J. P., & Radclife, P. M. (2007). *Modeling student academic success: Does usage of campus recreation facilities make a difference?* Paper presented at the National Symposium on Student Retention, Milwaukee, WI.

- Hughes, R. & Coakley, J. (1991). Positive deviance among athletes: The implications of overconformity to the sport ethic. *Society of Sport Journal*, 8(4), 307-325.
- Kampf, S. (2010). Impact of college recreation centers on enrollment. *Recreational Sports Journal*, 34(2), 112-118.
- Kendzierski, D. (1988). Self-schemata and exercise. *Basic and Applied Social Psychology*, 9(1), 45-59.
- 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., Grove, J. R., Gordon, S., & Ford, I. W. (1998). The experience of loss in sport. In J. Harvey (Ed.), *Perspectives on loss: A sourcebook* (pp. 241- 252). Philadelphia, PA: Taylor & Francis.
- Linsey, R. & Sessoms, E. (2006). Assessment of a campus recreation program on student recruitment, retention, and frequency of participation across certain demographic variables. *Recreational Sports Journal*, 30(1), 30-39.
- Melendez, M. C. (2006). The influence of athletic participation on the college adjustment of freshmen and sophomore student athletes. *College Student Retention*, 8(1), 39-55.
- Murphy, K. R. & Davidshofer, C.O. (1988). *Psychological testing: Principles and applications*. Englewood Cliffs, NJ: Prentice Hall.
- National Federation of State High School Associations (2009). High school sports participation increases for 20th consecutive year. Retrieved from <http://www.nfhs.org/content.aspx?id=3505>

- National Intramural-Recreational Sports Association (2002). *Value of recreational sports on college campuses*. (2nd ed.). Tallahassee, FL: Kerr & Downs Research.
- National Intramural-Recreational Sports Association (2008). *Collegiate recreational sports facilities construction report: Executive summary*. Retrieved from: http://www.nirsa.org/AM/Template.cfm?Section=Research_Central&Template=/MembersOnly.cfm&NavMenuID=828&ContentID=3899&DirectListComboInd=D
- National Sporting Goods Association (2008). *2008 participation*. Retrieved from http://www.nsga.org/files/public/2008RankedByTotal_4Web_080423.pdf
- National Sporting Goods Association (2007). *2007 youth participation in selected sports with comparisons to 1998*. Retrieved from: <http://www.nsga.org/files/public/2006YouthParticipationInSelectedSportsWithComparisons.pdf>
- O'Rourke, N., Hatcher, L., & Stepanski, E. J. (2005). *A step-by-step approach to using SAS for univariate and multivariate statistics* (2nd ed.). Cary, NC: SAS Institute, Inc.
- Palmer, S. (1981). *Role stress: how to handle everyday tension*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Pavot, W., & Deiner, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment*, 5(2), 164-172.
- Pearson, R. E., & Petitpas, A. J. (1990). Transitions of athletes: Developmental and

preventive perspectives. *Journal of Counseling and Development*, 69(1), 7-10.

Pedhazur, E. J. (1997). *Multiple regression in behavioral research* (3rd ed.).

Belmont, CA: Wadsworth Publishing.

Stebbins, R. A. (1992). *Amateurs, professionals, and serious leisure*. Montreal, CA: McGill-Queen's University Press.

Stebbins, R. A. (2001). Serious Leisure. *Society*, 38(4), 53-57.

Shapiro, D. (2003). Athletic identity and perceived competence in children with visual impairments. *Palaestra*, 19(4), 6-7.

Todd, S. Y., & Kent, A. (2003). Student athletes' perceptions of self. *Adolescence*, 38(152), 659-668.

United States Department of Education (2009). The Equity in Athletics Data Analysis Cutting Tool. Retrieved from <http://www.ope.ed.gov/athletics/>

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), 338-363.

Wiechman, S. A., & Williams, J. (1997). Relation of athletic identity to injury and mood disturbance. *Journal of Sport Behavior*, 20(2), 199-210.

APPENDIX A

Athletic Identity Measurement Scale

Please circle the number that best reflects the extent to which you agree or disagree with each statement in relation to your own sports participation. Use the scale below to respond to each statement.

1	2	3	4	5	6	7
Strongly Disagree	Moderately Disagree	Disagree	Unsure	Agree	Moderately Agree	Strongly Agree

1. I consider myself an athlete.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. I have many goals related to sport.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. Most of my friends are athletes.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. Sport is the most important part of my life.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. I spend more time thinking about sport than anything else.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. I need to participate in sport to feel good about myself.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. Other people see me mainly as an athlete.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8. I feel bad about myself when I do poorly in sport.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

9. Sport is the only important thing in my life.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

10. I would be very depressed if I were injured and could not compete in sport.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

APPENDIX B

Satisfaction With Life Scale

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly disagree

- _____ 1. In most ways my life is close to my ideal.
- _____ 2. The conditions of my life are excellent.
- _____ 3. I am satisfied with my life.
- _____ 4. So far I have gotten the important things I want in life.
- _____ 5. If I could live my life over, I would change almost nothing.

APPENDIX C

Loss in Sport Survey

Please indicate your level of agreement with the following statements regarding the transition from varsity athletics. Circle the number that best reflects the extent to which you agree or disagree with each of the statements. Use the scale below to respond to each statement.

1	2	3	4	5	6	7
Strongly Disagree	Moderately Disagree	Disagree	Unsure	Agree	Moderately Agree	Strongly Agree

1. I had the opportunity to play sports at other colleges, but chose to attend a school where I would not be able to play at the varsity level.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. I was not interested in playing sports at the college level.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. I was ready to stop playing my sports when my high school career was over.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. I was tired of competing in varsity sports.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. After I finished playing high school sports, my life felt empty.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. I miss playing varsity sports for my school.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. My last high school game was one of the saddest days of my life.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8. I do not feel like myself now that I am not on a varsity sports team.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

9. The adjustment of not being a varsity athlete has been difficult.
Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

APPENDIX D

Recreational Sports Involvement Index

There are six categories of sports and recreation involvement listed below. Each category contains a list of activities. Think about which activities you regularly do within each category. Then indicate your level of involvement in the category using the scale provided, with “1” indicating a large amount of time spent on the activities, and “5” indicating no time spent on the activities. Please read the category description carefully before you decide whether or not it best fits your activities.

1	2	3	4	5
Large amount of time	Moderate amount of time	Some amount of time	Little amount of time	No time

Category 1: Competitive individual or team sports that are NOT University provided. These activities involve competition and contest outcomes such as wins or losses. (Do not include Intramural Sports in this category)

- Running races -Cycling/bike races -Motorsport races -Golf tournament
- Tennis tournament -Gymnastics/cheerleading competition
- Martial arts competition -Ultimate league -Soccer league
- Basketball league -Disc golf competition -Softball/baseball league

What is your level of involvement in the above activities?

No time 0 1 2 3 4 Large amount of time

Category 2: Drop-in individual or team sports that are NOT University provided. These activities are “for fun”, and contest outcomes such as wins or losses are not necessarily calculated or recorded.

- Running -Pick-up basketball -Cycling/mountain biking
- Pick-up volleyball -Pick-up tennis -Disc golf
- Pick-up ultimate -Pick-up soccer -Pick-up football
- Rock climbing -Paddle sports -Hiking/walking
- Video game sports -Fitness activities that are NOT in the HPER Building

What is your level of involvement in the above activities?

No time 0 1 2 3 4 Large amount of time

(continued on next page)

Category 3: Sport involvement in which you are not an actual player or participant. (Do not include watching sports on TV)

- Watching Razorback athletics (live)
- Watching professional sports (live)
- Working with a sports team as part of your job or for payment
- Watching Intramural games
- Coaching/helping a sports team as a volunteer

What is your level of involvement in the above activities?

No time 0 1 2 3 4 **Large amount of time**

Category 4: Club-level sports at the University of Arkansas

- Aikido Club
- Ballroom/Dance Club
- Bass Fishing Club
- Bowling Club
- Boxing Club
- Climbing Club
- Cycling Club
- Disc Golf Club
- Fencing Club
- Fly Fishing Club
- Martial Arts Club
- Ice Hockey Club
- Lacrosse Club
- Rugby Club
- Soccer Club
- Ultimate Club
- Volleyball Club
- Officials Club
- Paintball Club
- Raquetball Club
- Skeet shooting Club
- Softball Club
- Tae Kwon Do Club
- Tennis Club
- Tri-Sport Club
- Wakeboard Club
- Water Ski Club

What is your level of involvement in the above activities?

No time 0 1 2 3 4 **Large amount of time**

Category 5: Intramural sports at the University of Arkansas

- Intramural Basketball
- Intramural Bowling
- Intramural Raquetball
- Intramural Wallyball
- Intramural Dodgeball
- Intramural Ultimate
- Intramural Kickball
- Intramural Flag Football
- Intramural Softball
- Intramural Badminton
- Intramural Sand Volleyball
- Intramural Horseshoes
- Intramural Disc Golf
- Intramural Soccer
- Intramural Table Tennis

What is your level of involvement in the above activities?

No time 0 1 2 3 4 **Large amount of time**

Category 6: Drop-in sports and recreation activities at the HPER Building

- Running/walking
- Swimming
- Pick-up basketball
- Pick-up volleyball
- Pick-up Badminton
- Pick-up racquetball
- Rock climbing
- Fitness activities

What is your level of involvement in the above activities?

No time 0 1 2 3 4 **Large amount of time**

APPENDIX E

Recreational Sports Involvement Index Scoring Scale

Participants indicated their level of involvement in each category on a scale of 1 (no time) to 5 (large amount of time). This measurement was multiplied by the assigned weight listed below. The resulting measurement is one value for involvement in each category type.

Activity Category	Assigned Weight
1. Competitive activities that are not University provided	6
2. Drop-in activities that are not University provided	3
3. Spectator activities	1
4. University-provided club sports	5
5. University-provided intramural sports	4
6. University-provided drop-in activities	2

APPENDIX F

Demographic Questionnaire

1. Did you play varsity sports for at least 2 years at your high school?
Yes _____ No _____ (survey terminates if “no” is checked)

2. Do you currently play sports for the Razorbacks?
Yes _____ No _____ (survey terminates if “yes” is checked)

3. Gender: Male ___ Female ___

4. Did you graduate from high school within the last year? Yes _____ No _____

5. What was the approximate total enrollment of your high school?
Under 500 _____ 500-999 _____ 1,000 – 1,499 _____ 1,500 – 1,999 _____ Over 2,000 _____

6. List all sports played as well as your specific class standing during the season (s)
Sport(s) played (one per line): Year(s) played (circle all that apply):
_____ Freshman Sophomore Junior Senior
_____ Freshman Sophomore Junior Senior
_____ Freshman Sophomore Junior Senior

7. Rate your agreement with the following statement: It was my choice to not play varsity sports in college.
___ Strongly Agree
___ Moderately Agree
___ Agree
___ Unsure
___ Disagree
___ Moderately Disagree
___ Strongly Disagree

8. Rate your agreement with the following statement: I would like to be playing varsity sports in college.
___ Strongly Agree
___ Moderately Agree
___ Agree
___ Unsure
___ Disagree
___ Moderately Disagree
___ Strongly Disagree

APPENDIX G

IRB Approval Form

120 Ozark Hall • Fayetteville, Arkansas 72701 • (479) 575-2208 • (479) 575-3846 (FAX) Email: irb@uark.edu

Research Support and Sponsored Programs Institutional Review Board

March 5, 2010

MEMORANDUM

TO: Katie Helms
Merry Moiseichik

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 10-02-474

Protocol Title: *Campus Recreation Involvement, Athletic Identity, and Life Satisfaction in Former High School Athletes*

Review Type: EXEMPT

Approved Project Period: Start Date: 03/05/2010 Expiration Date: 03/04/2011

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Compliance website (<http://www.uark.edu/admin/rsspinfo/compliance/index.html>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

If you wish to make *any* modifications in the approved protocol, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 120 Ozark Hall, 5-2208, or irb@uark.edu.

APPENDIX H

Survey notification, delivery, and reminder scripts

Notification:

Transitions out of High School Athletics

Dear <FIRST NAME> <LAST NAME>,

You are receiving this email as a University of Arkansas student. On Thursday, April 8, 2010, you will receive an email requesting your participation in a research study survey. A reminder notice will be sent out on Tuesday, April 13, 2010 to participants that have not yet completed the survey.

Your responses will be kept confidential and no personally identifiable information will be used in any reports. Your participation in this survey would be greatly appreciated and will add to the successful efforts of campus recreation departments.

If you choose not to participate in this survey, simply delete each survey email.

Thank you,
Katie Helms
Assistant Director, Intramural-Recreational Sports

<IMRS LINK>

Delivery:

Transitions out of High School Athletics

Dear <FIRST NAME> <LAST NAME>,

Welcome to the Transitions out of High School Athletics survey. To begin, click on the link below:

<SURVEY LOCATION>

If your system is unable to link to the website, please copy the underlined text and paste it into the location field of your web browser.

Please remember that your responses will be kept confidential and no personally identifiable information will be used in any reports. Your participation in this survey is

greatly appreciated and will help to improve programming efforts of campus recreation departments.

If you choose not to participate in this survey, simply delete each survey email. Participants not responding by Tuesday, April 13, 2010 will receive a reminder email regarding this survey.

Thank you,
Katie Helms
Assistant Director - Intramural/Recreational Sports

Reminder:

Transitions out of High School Athletics Survey Reminder

Dear {FirstName} {LastName},

Our records indicate that as of April 12, 2010 you have not taken the Transitions out of High School Athletics survey.

To begin, click on the link below:

{Survey Location}

If your system is unable to link to the website, please copy the underlined text and paste it into the location field of your web browser.

Please remember that your responses will be kept confidential and no identifiable information will be used in any reports. Your participation in this survey is greatly appreciated and will help to improve programming efforts of campus recreation departments.

If you have already responded to this survey, thank you for your participation. This survey will close at 11:59 pm on April 16, 2010.

Thank you,
Katie Helms
Assistant Director - Intramural/Recreational Sports