Masters Theses & Specialist Projects   Graduate School

Fall 2016

Differences in Depression, Anxiety, and Life Satisfaction between Intercollegiate Athletes, Intramural Participants, and Non-Athletes

Megan Wilson
Western Kentucky University, megan.wilson335@topper.wku.edu

Follow this and additional works at: http://digitalcommons.wku.edu/theses

Part of the Clinical Psychology Commons, Exercise Science Commons, and the Health Psychology Commons

DIFFERENCES IN DEPRESSION, ANXIETY, AND LIFE SATISFACTION
BETWEEN INTERCOLLEGIATE ATHLETES, INTRAMURAL PARTICIPANTS,
AND NON-ATHLETES

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements of the Degree
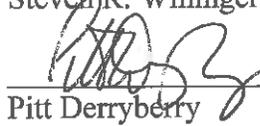Master of Arts

By
Megan Wilson

December 2016

DIFFERENCES IN DEPRESSION, ANXIETY, AND LIFE SATISFACTION BETWEEN INTERCOLLEGIATE ATHLETES, INTRAMURAL PARTICIPANTS, AND NON-ATHLETES

Date Recommended 11-11-16

_____
Frederick Grieve, Director of Thesis

_____
Steven R. Wininger

_____
Pitt Derryberry

_____   11/16/16
Dean, Graduate Studies and Research   Date

ACKNOWLEDGEMENTS

I would first like to thank Dr. Frederick Grieve for not only agreeing to chair my thesis, but also for having the patience to provide assistance through the many idea changes, drafts, and emails with questions. Allowing me the freedom to take this project in the direction I thought was best was an incredibly educational experience. Because of him, I have learned so much about how to conduct a research study and I am truly grateful for this exciting experience.

Secondly, I would like to thank Dr. Steven R. Wininger and Dr. Pitt Derryberry for agreeing to be on my thesis committee. With busy schedules and other commitments, I greatly appreciate the time taken to be a part of my project. Both professors have provided me with greatly appreciated guidance and instruction throughout this study. They helped me to develop the initial idea, create an incentive to encourage athletes to participate, and taught me how to run and analyze the data. I am so appreciative to both Dr. Wininger and Dr. Derryberry for going above and beyond in helping me with this project.

In addition, I would like to thank my parents for their love and encouragement throughout my academic career. They have always been there for me when I have needed them and I feel so lucky to know that I can always count on them.

Finally, I would like to thank Joseph Morris for his support the last two years and throughout this project. His willingness to volunteer to proof-read, develop ideas, and collect data is something I will always cherish. I am so thankful for the unwavering love and patience he has shown me and for having confidence in me even when I did not.

With the many challenges I have faced the last two years, and within this project, I am not sure I could have completed it without him.

This thesis would not have been possible without all of the previously mentioned people, as well as many others who provided encouragement and support throughout. To all of those people, I am extremely grateful.

CONTENTS

LIST OF TABLES

THE DIFFERENCES IN LEVELS OF DEPRESSION, ANXIETY, AND LIFE SATISFACTION BETWEEN INTERCOLLEGIATE ATHLETES, INTRAMURAL PARTICIPANTS, AND NON-ATHLETES

Megan Wilson   December 2016   40 Pages

Directed by: Dr. Frederick Grieve, Dr. Steven R. Wininger, and Dr. Pitt Derryberry

Department of Psychology   Western Kentucky University

It is widely supported that participation in athletics is positively correlated with increased overall health. However, some research indicates that participation in increased levels of competition is positively correlated with higher levels of depression and anxiety. This means, that if compared, athletes competing nationally or internationally would report higher levels of both depression and anxiety than athletes competing at the intercollegiate level. Research indicates that this could be caused by increased amounts of pressure, personal cost, and expectation.

This study examines potential differences between intercollegiate, intramural, and non-athletes in these areas on a college campus. The first hypothesis is that depression symptoms will be more present in intercollegiate athletes than in intramural participants. The second hypothesis states that anxiety symptoms will be more prevalent in intercollegiate athletes than in intramural participants. The third hypothesis states that life satisfaction will be greater in intramural participants than in intercollegiate athletes. Lastly, the fourth hypothesis states that perceived social support and athletic identity will mediate the relationship between level of athletic participation and psychopathology.

Participants in this study gave informed consent, completed a demographics questionnaire, and scales measuring depression and anxiety, life satisfaction, athletic identity, and perceived social support. The participants were recruited from

intercollegiate teams, intramural teams, and psychology courses at Western Kentucky University.

The first and second hypotheses were not supported since intramural participants did not have significantly different levels of depression compared to intercollegiate athletes and non-athletes. Results revealed intramural participants are more satisfied with life than intercollegiate and non-athletes, which supports the third hypothesis. The results also revealed that life satisfaction is mediated by both athletic identity and perceived social support, which shows partial support for the fourth hypothesis. The fourth hypothesis was not supported for depression and anxiety because these factors did not have significant differences between the groups so finding a mediating factor was not possible.

Chapter I

Introduction

On college campuses across the country, collegiate student athletes are considered a high-risk subgroup for a variety of health related behaviors, including alcohol abuse, disordered eating, coping with the stress of injury, overtraining, and lack of sleep (Armstrong & Oomen-Early, 2009). Many of the variables that athletes face daily are correlated with depression and anxiety. However, research indicates that regular physical activity makes a person three times less likely to suffer from depression and anxiety (Armstrong & Oomen-Early, 2009). The lack of research investigating the line between harmful and helpful athletic participation leads to confusion and speculation. For example, Masten, Tusak, and Faganel (2006) investigated the differences in psychopathology between classes of athletes in regard to world class, national class, perspective class, and youngster class. The study found that the higher level of competition an athlete competed in was directly correlated to higher levels of both state and trait anxiety levels. Dissimilarly, other studies found collegiate student athletes to have lower levels of depression and anxiety than non-athlete collegiate students. (Armstrong & Oomen-Early, 2009).

It would beneficial to examine participation in a lower level of athletic competition, such as intramural athletics, to compare these differences to high performance sports and non-athletes. This could give insight to types of mediating factors that should be studied in the future. The current study will investigate the similarities and differences in levels of depression, anxiety, and life satisfaction when college students compete in intramural athletics compared to intercollegiate athletics. This is significant to the fields of psychology and athletics because understanding characteristics of individuals

who suffer from depression and anxiety less than the average college student could help in the creation of outreach programs that aim at decreasing depression and anxiety levels on college campuses. The following literature review will discuss these constructs and how they relate to athletes. Finally, a description of the study and how it incorporates the previous research will be presented.

To better understand the constructs in this study, it is important to define what each means. An athlete is defined as a person who is proficient in sports and other physical exercises (Athlete, n.d.). More specifically, intercollegiate athlete refers to an athlete who participates in or is involved in a sport that competes between colleges (Intercollegiate, n.d.). Participation in intramural athletics is defined as sports participation that occurs within a particular group or organization (Intramural, n.d.). This type of athletic participation is commonly used to describe an event in which students compete against other students at the same school that they attend. Commonly, intercollegiate athletes have more training, skills, and coaching in their given sport than intramural participants. Intercollegiate athletes also experience many different athletic requirements than intramural participants. Intercollegiate athletes are required to attend daily practice, weekly travel, and weight training, and are frequently removed from classes in order to maintain these requirements. These athletes are exposed to media presence and pressure to perform well in order to keep scholarships. Intramural participants often times do not have mandatory attendance or practice time, they infrequently have media coverage, and are not provided with scholarships that could be jeopardized.

Depression

The diagnostic criteria for Major Depressive Disorder include the presence of decreased mood, diminished interest in activities, weight loss or gain, over or under sleeping, fatigue, feelings of worthlessness or guilt, difficultly with concentration, and thoughts of death (American Psychiatric Association, 2013). To be classified as Major Depressive Disorder, the symptoms must be present for two consecutive weeks. These symptoms must cause clinically significant distress and cannot be better attributed to substance abuse or another medical or psychological disorder (American Psychiatric Association, 2013).

Collegiate athletes are considered a high-risk group for developing psychopathology due to various demands required of them based on athletic status (Jing-Horng Lu, Hsu, Chan, Cheen, & Kao, 2012; Ludvigson, 2014). Collegiate athletes are developing young adults attempting to sort out academic responsibilities and daily life events. However, unlike their non-athlete counterparts, student-athletes also face exhausting training sessions, weekly travels and competitions, sport related injury, pressure to perform at a high level, and inner team social issues (Jing-Horng Lu et al., 2012). Many of these variables, if paired with poor coping skills, low levels of social support, or poor time management skills, could result in psychopathology. However, it has been shown that college athletes have significantly lower levels of depression than non-athletes (Jing-Horng Lu et al., 2012). This could be a result of other variables that are also significantly different between the two groups, such as days per week of exercise, social connectedness, or satisfaction with body image (Jing-Horng Lu et al., 2012). Gender is also a significant predictor of depression; female college athletes have higher

levels of depression than male college athletes (Armstrong & Oomen-Early, 2009; Ludvigson, 2014).

In summation, studies suggest that high school and collegiate student athletes have lower levels of depression than non-athlete students. However, student athletes have higher risk factors for developing depression than non-athletes. Therefore, it is predicted that measuring student athletes who have less external stressors from athletics, such as intramural participants, would result in lower levels of depression when compared to intercollegiate student athletes.

Anxiety

The diagnostic criteria for Generalized Anxiety Disorder include excessive anxiety and worry that is difficult to control, restlessness, fatigue, difficulty concentrating, muscle tension, and sleep disturbance (American Psychiatric Association, 2013). To be classified as Generalized Anxiety Disorder, the symptoms must be present for at least six months. These symptoms must cause clinically significant distress and are not confined to features of having a panic attack, being embarrassed in public, contamination, being away from home or family, gaining weight, or having a serious illness (American Psychiatric Association, 2013).

Dziembowska et al. (2015) described anxiety as an experience of unpleasant sensations when presented with specific, potentially threatening, situations. Zhou, Zhu, Zhang, and Cai (2014) reported that anxiety includes features such as excessive rumination, fear of unknown outcomes, uneasiness, worry, and apprehension about future events that are real or imagined. Sari (2015) indicated two types of anxiety. First the

author described trait anxiety, which refers to the degree to which a person generally feels anxious on a day to day basis. Then the author reported that state anxiety is the anxiety a person feels in a particular situation and a certain time. Roberts, Hart, and Eastwood (2016) differentiated between the two by stating that trait anxiety is anxiety felt day-to-day and state anxiety is felt in the moment.

While it is understood that anxiety plays a role in increasing athletic performance, it can just as easily hinder athletic performance. Performance anxiety follows a bell curve in which optimal performance results from moderate levels of anxiety. Poor athletic performance can be a consequence of athletes having insufficient or excessive amounts of anxiety (Powell, 2004; Sari, 2015; Warnecke, Baum, Peer, & Goreczny, 2014).

Competitive athletics require athletes to perform under time constraints, accuracy requirements, and/or while using strategic game play, all of which increase state anxiety in athletes (Boeschen, 2011). However, in a study of 188 participants, athletes were found to have lower levels of state anxiety than non-athletes (Boeschen, 2011). Mahnic and Tusak (2005) conducted a study that found similar results. The study compared extreme athletes and non-athletes on the State-Trait Anxiety Inventory (STAI), the Functional Performance Inventory, and the Costello Achievement Motivation Scale. Results indicated that extreme sport athletes had lower levels of trait anxiety than non-athletes did (Mahnic & Tusak, 2005). A study was conducted using 57 badminton athletes from eight different universities. The participants were evaluated using the Trait Anxiety Scale and a five question demographics questionnaire. The results indicated that men and women did not significantly differ on levels of trait anxiety (Sari, 2015). Tenenbaum and Milgram (1978) conducted a study that compared 77 competitive Israeli

student athletes and 174 Israeli students who did not participate in athletics. The non-athlete students were administered the STAI while in their college classrooms and the student athletes were administered the STAI immediately prior to a competitive sports event. The results indicated that athletes had lower levels of trait anxiety than non-athletes, but the study did not reveal a significant difference in state anxiety between the two groups of participants (Tenenbaum & Milgram, 1978).

When comparing classes of athletes, the athletes competing at the highest competition level have higher levels of both types of anxiety compared to those in lower classes. It is also significant to note that, on average, males have lower levels of trait and state anxiety than females (Masten et al., 2006).

Given that studies have reported that athletes have lower levels of trait anxiety than non-athletes but that high competition athletes have higher levels of trait and state anxiety than low competition athletes, it is predicted that intramural participants will report lower levels of trait anxiety than intercollegiate athletes. This is because intramural participants are viewed as being a lower level of competition than intercollegiate athletes, but higher than non-athletes.

Life Satisfaction

Life satisfaction is determined by the way in which a person cognitively evaluates his or her own life (Maher, Pincus & Ram, 2015). It is described as a psychological state that is generally related to a person's psychological well-being; it is not to be confused with a measure of a person's quality of life. To be satisfied with life, a person has a

global feeling of contentment, fulfillment, or overall happiness with life (Malinauskas, 2010).

Life satisfaction is an important construct for this study because it has been found that life satisfaction is positively correlated with participation in athletics. Valois, Zullig, Huebner, and Drane (2004) conducted a study measuring the relationship between physical activity of high school students and life satisfaction using 4,758 high school students. The results of this study indicated that both male and female students who reported that they participated in school organized sports teams had higher levels of life satisfaction than those who reported not participating in any sports teams.

Boa, Pan, Shi, and Ji (2013) surveyed 397 adults ages 18 to 65. The study was conducted to determine the association between life satisfaction, perceived financial stress, depression, and anxiety. The results indicated that increased levels of anxiety and depression were negatively correlated with life satisfaction. Similarly, Lucas-Carrasco, Sastre-Garriga, Galan, Oudsten, and Power (2014) conducted a study with 84 participants and Warnecke et al. (2014) conducted a study with 113 graduate level participants, and both studies reported a negative correlation between depression and life satisfaction. Therefore, based on the previous prediction of higher levels of depression and anxiety being found within intercollegiate athletes than intramural participants, it is predicted that intercollegiate athletes will have lower levels of life satisfaction than intramural participants. This prediction is also supported by the research that reports the stressors intercollegiate athletes face that intramural participants typically do not experience, such as media presence and mandatory practice and travel (Jing-Horng Lu et al., 2012).

Social Support

Social support involves the perception of or the receiving of useful assistance that is supplied by community members, social networks, or trustworthy partners (Zimet, Dahlem, Zimet, & Farley, 1988). It is one of the leading psychological factors influencing mental and physical health. Furthermore, Malinauskas (2010) reported that perceived social support was more significant in predicting well-being and life satisfaction than actual social support. The difference between perceived and actual social support could be due to the participants being unaware of actual social support and not taking advantage of it.

Social support is capable of alleviating psychological responses to depression and anxiety that are harmful to a person's well-being (Mitchell, Evans, Rees, & Hardy, 2014). Tennant, Demaray, Coyle, and Malecki (2015) investigated the correlation between social support and depression in college aged students. The results showed that depression and social support were negatively correlated but that social support did not serve as a buffer against depression. Zhang, Yan, Zhao, and Yuan (2014) found, in a study of 1,672 high school participants that perceived friend social support had a negatively correlated mediating effect on perceived stress and depression. Ludvigson (2014) found similar results suggesting that social support had a significantly negative correlation with depression in female athletes.

Zhou et al. (2014) conducted a study with 426 college students. The findings revealed that depression and anxiety were significantly, negatively correlated with perceived social support. Ludvigson (2014) found similar findings within college aged student athletes. The study evaluated 190 female Division I student-athletes and found

that social support was negatively correlated with health risk behaviors, depression, and anxiety. This study could lend support to previous research that suggests that athletes have lower levels of anxiety and depression when compared to non-athletes (Jing-Horng Lu et al., 2012). Athletes are surrounded by teammates, coaches, and support staff daily. Teammates have common interests, sports, and have similar schedules due to the common sport requirements. This provides athletes with higher chances of building a support system than the average student. Given the previous data, it is predicted that social support will have a mediating effect on psychopathology and will negatively correlate with levels of depression and anxiety in intramural and intercollegiate athletes.

Athletic Identity

According to Masten et al. (2006), self-concept is the way in which athletes view themselves. Athletic identity is a role-identity within a person's self-concept, the way in which one views oneself. Accordingly, athletic identity is the extent to which an individual identifies with an athletic role (Brewer, Van Raalte, and Linder, 1993). While athletic identity was originally viewed as one-dimensional, it is now thought to be made up of four factors: self-identity, social identity, exclusivity, and negative affectivity (Masten et al., 2006). Masten et al. (2006) reported that self-identity incorporates thoughts of self-reference, which refer to how an athlete views himself or herself. Social identity refers to how athletes perceive others viewing them as athletes. Exclusivity captures the extent in which athletes rely on their athletic identity and how strongly they are able to identify with other roles in their lives. Lastly, negative affectivity captures the magnitude to which an athlete negatively responds to the inability to participate in his or her sport. Masten et al. (2006) reported that, while a person's self-concept guides and

9

organizes self-related information, athletic identity contributes significantly to the formation of the ego. The importance that athletic identity has on self-view and the ego suggests that athletic identity is a salient factor of athletic performance as well as self-concept formation.

Athletic identity has been shown to be negatively correlated to anxiety within athletes of all skill levels (Cosh, Crabb, & LeCouteur, 2013; Masten et al., 2006). Masten et al. (2006) surveyed 410 Slovene athletes of different quality levels to determine how athletic identity interacted with anxiety at different levels of competition. The results indicate that the most predictive variable within athletic identity on increased levels of state anxiety was negative affect, followed by world-class categorization (in comparison to other classes). What this class categorization difference means is that if an athlete is a world-class athlete (the highest level), then state anxiety levels will be higher than if the athlete belonged to any lower categorization of classes. However, self-identity, another predictive variable of athletic identity, was negatively correlated with athlete's state anxiety (Masten et al., 2006). This research shows that two of the four factors of athletic identity, self-identity and negative affectivity, have a significant impact on athletes' anxiety levels.

Ludvigson (2014) conducted a study with 190 female Division I collegiate student-athletes. The researcher divided the participants into two groups, athletes who participate in team sports and athletes who participate in individual sports. The groups of participants were administered the Social Support Scale, the Athletic Identity Measurement Scale, and were assessed for high risk behaviors, drug use, grade point average, stress, and depression. The study found that athletic identity and total social

support had significant relationships with stress, health risk behaviors, and depression. Athletes who had high levels of athletic identity also had high levels of depression, suggesting a predictive relationship (Ludvigson, 2014).

Brewer (1993) conducted a study that included 451 adults. The study investigated whether experiencing a life event, which interfered with engaging in self-defining activities, would increase levels of depression. The results indicated that hypothetical and actual athletic injuries were related to increased affective responses. It was reported that depression was increased for participants who experienced identity-disrupting events, including athletic career termination (Brewer, 1993). For the current study, it is predicted that athletic identity will have a mediating effect on psychopathology and will negatively correlate with levels of depression and anxiety in intramural and intercollegiate athletes.

Limitations of Previous Research

Previous research measured the psychological differences between athletes and non-athletes and compared the differences between classes of competitive athletes. Previous research does not examine how college students who participate in intramural athletics compare to those of a more elite nature, such as intercollegiate athletes, on levels of depression, anxiety, life satisfaction. Comparing athletes who have the potential to gain many of the benefits of competition and camaraderie, while avoiding some of the anxiety provoking pressures that are typically attached to intercollegiate sports, such as media, traveling, and scholarships, should be considered. Additionally, evaluating how perceived social support and athletic identity effect levels of depression, anxiety, and life satisfaction is lacking in previous research.

11

Present Study

Collegiate athletes, when compared to non-athletes, show significantly lower levels of depression and anxiety. Life satisfaction has a negative correlation with depression and anxiety but a positive correlation with physical exercise. The purpose of this study is to determine whether the participation in intramural athletics verses intercollegiate athletics will show a difference in measured psychopathology or life satisfaction. The role of perceived social support and athletic identity will also be measured to determine the mediating effect they have on the group differences between the dependent variables. The present study will attend to the limitations of previous research by including a comparison of non-athlete students, structured-sport athletes, and less skilled athletic participants who have fewer requirements put upon them. It will examine how depression, anxiety, and life satisfaction interact with all three groups of collegiate students.

The first hypothesis is that intramural participants will have lower levels of depression than intercollegiate athletes and non-athletes. The second hypothesis is that intramural participants will have lower levels of anxiety than intercollegiate athletes and non-athletes. The third hypothesis is that intramural participants will have higher levels of life satisfaction than intercollegiate athletes and non-athletes. Finally, the fourth hypothesis is that athletic identity and perceived social support will be mediating factors for group differences for the dependent variables.

Method

Participants

Participants were recruited for this study through Western Kentucky University in Bowling Green and included 90 university students who participated in intramural athletics, 110 intercollegiate athletes, and 39 college psychology students. The ages ranged from 17 to 40 ($M = 20.18$, SD $= 2.40$), with 51.7% (124) female participants. Participants were 74.2% (178) Caucasian, 19.6% (47) African American, 1.7% (4) Hispanic/Latino, .4% (1) Asian, and 4.2% (10) Other. The majority of participants were underclassmen, with 30% (72) indicating freshman, 26.7% (64) indicating sophomore, 22.1% (53) indicating junior, 16.7 (40) indicating senior, 4.2% (10) indicating graduate student, and .4% (1) indicating other. This study was a multi-factor, between subjects, design.

Measures

Demographics. The participants in this study were asked to provide demographic information. They were asked to indicate their age, gender, class level in college, race or ethnicity, relationship status, living arrangements, what sport they participate in, what type of team they participate with, and for how many years they have competed in that (those) sport(s). The survey provided a list of common choices the participants could circle and an "other" section with space to provide additional options. See Appendix A.

Depression, Anxiety and Stress Scale 21. This measure (DASS 21, Lovibond & Lovibond, 1995) is a 21-item self-report questionnaire designed to measure the severity of a range of symptoms common to both depression and anxiety. The participants are instructed to indicate how much each item applies to them over the past two weeks. Each

item is scored from 0 (*did not apply to me at all over the last week*) to 3 (*applied to me very much or most of the time over the past week*). Some sample questions from this scale are "I couldn't seem to experience any positive feeling at all" and "I found it hard to wind down." The items are divided into three separate scales: Depression (D), Anxiety (A), and Stress (S). For each scale (D, A, & S), sum the scores for the corresponding items. The DASS 21 is a short form version of the DASS (the Long Form has 42 items); therefore, the final score of each item groups (Depression, Anxiety and Stress) must be multiplied by two (x2). Once multiplied by two, each summed score can then be transferred to the DASS profile sheet. The profile sheet describes the scores by severity, Normal (0-4), Mild, Moderate, Severe, Extremely Severe (14+). The DASS 21 was chosen because it has a test-retest reliability of .94 for DASS-D, .87 for DASS-A, .91 for DASS-S and a total internal consistency reliability of .93 (Henry & Crawford, 2005, Osman et al., 2012). Osman et al. (2012) conducted a study comparing the DASS-21 to the Beck Anxiety Inventory, Beck Depression Inventory-II, and the Perceived Stress Scale. The results of this study revealed good internal consistency reliability and criterion-related validity for depression, anxiety, and stress in clinical and non-clinical samples. See Appendix B.

Satisfaction with Life Scale. This measure (SWLS, Diener, Emmons, Larsem, and Griffin, 1985) is a five-item scale that uses a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Some sample questions from this scale are "in most ways my life is close to my ideal" and "so far I have gotten the important things I want in life." This is a single factor scale with possible scores ranging from 5 (not satisfied) to 35 (very satisfied). The SWLS was chosen because it has a coefficient alpha

14

of .87, indicating a good reliability (Diener et al., 1985). Silva, Taveira, Marques, and Gouveia (2015) assessed the construct validity using confirmatory factor analysis. This assessment revealed good internal validity. See Appendix C.

Athletic Identity Measurement Scale. This measure (AIMS, Brewer & Cornelius, 2001) is a 10-item self-report measure of athletic identification. Respondents are asked to indicate on a seven-point scale the extent to which they agree or disagree with each of the 10 statements included in the inventory, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Some sample questions from this scale are "I consider myself an athlete" and "most of my friends are athletes." Scores range from 2 to 14 for the two-item social identity, self-identity, and negative affectivity subscales. Scores range from 3 to 21 for the three-item exclusivity subscale. High scores indicate the participant identifies more with that construct than not. A Cronbach's alpha of .72 suggested adequate internal consistency for each of the four subscales. However, the AIMS was chosen because Hale and Waalkes (1994) replicated Brewer's research which resulted in confirming internal consistency of .93 and test-retest reliability of .89. Martin, Eklund and Adams-Mushett also conducted a confirmatory factor analysis and found similar results. Furthermore, the researchers reported that the measure was correlated with self-reports of athletic involvement, thus demonstrating construct validity (Martin, Eklund & Adams-Mushett, 1997). See Appendix D.

Multidimensional Scale of Perceived Social Support. This measure (MSPSS, Zimet et al., 1988) is a 12-item self-report measure of perceived support from family, friends, and significant others. Respondents are asked to indicate on a seven-point scale the extent to which they agree or disagree with each of the 10 statements included in the

inventory, ranging from 1 (very *strongly disagree*) to 7 (very *strongly agree*). Some sample questions from the scale are "I get the emotional help and support I need from my family" and "I can count on my friends when things go wrong." This is a triple factor scale with possible scores ranging from 4 (low perceived support) to 28 (high perceived support) for each factor. The MSPSS was chosen because Zimet et al. (1988) conducted a study comparing the MSPSS to the Hopkins Symptom Checklist (HSCL) and found the MSPSS to have good construct validity, and a Cronbach's alpha of .71 and a total reliability for the scale of .88, which indicates good internal consistency (Canty-Mitchell & Zimet, 2000; Zimet et al., 1988). See Appendix E.

Procedure

Several coaches at WKU, including those from the men's and women's basketball teams, the baseball team, and the softball team, were contacted to receive approval to survey athletes. The investigator offered the coaches a 15-minute presentation on understanding and managing performance anxiety that was performed after the administration of the survey. The intercollegiate athletes were presented with a survey before or after their scheduled practice time. Intramural basketball, softball, and soccer athletes were recruited before competitions and through the Department of Psychology study board. The study board participants signed up online to attend a data collection meeting. Upon arrival, they were administered a survey by an investigator. Data collection for intramural participants took place in the Clinical/Applied Research Group laboratory and data collection for intercollegiate athletes took place in practice areas, the training room, and locker rooms. Participants read over an informed consent document and gave their consent. The participants first completed the demographic questionnaire.

Next, participants completed the DASS, the SWLS, the AIMS, and the MPSSS which were counter balanced. The survey took participants approximately 5 to 10 minutes to complete and participants were debriefed upon request.

Chapter III

Results

Preliminary Analysis

The DASS yields scores on three subtests, and two were evaluated: Depression and Anxiety. The Depression subscale was a reliable measure ($\alpha = .84$; $M = 2.99$, $SD = 3.29$). The Anxiety subscale was approaching the .80 criterion used to evaluate good internal reliability ($\alpha = .79$; $M = 3.40$, $SD = 3.42$).

The SWLS was summed to create a total score as a measure for satisfaction with life and the measure was reliable ($\alpha = .83$; $M = 26.41$, $SD = 5.33$). The AIMS was summed to create a total score as a measure of athletic identity and the measure was reliable ($\alpha = .91$; $M = 33.90$, $SD = 10.57$). The MPSSS was summed to create a total score as a measure of overall perceived social support and the measure was reliable ($\alpha = .94$; $M = 71.84$, $SD = 12.72$).

Multivariate Pearson correlations were performed to measure if the three dependent variables, depression, anxiety, and satisfaction with life, were correlated with each other and with the mediating factors, athletic identity and perceived social support. This was also to ensure that athletic identity and perceived social support were not correlated with each other. It was found that athletic identity and perceived social support were not significantly correlated (See Table 1).

Table 1

Correlations Among Depression, Anxiety, Satisfaction with Life, Athletic Identity, and Perceived Social Support Scores

	DEP	ANX	SWL	AI	PSS
DEP	- - -	.56**	-.45**	-.06	-.18**
ANX		- - -	-.24**	.02	-.13*
SWL			- - -	.13*	.28**
AI				- - -	.10
PSS					- - -

Note. DEP = Depression, ANX = Anxiety, SWL = Satisfaction with Life, AI = Athletic Identity, PSS = Perceived Social Support * $p < .05$. , ** $p < .01$

Hypothesis Testing

The first hypothesis in the current study stated that depression symptoms will be more present in intercollegiate athletes than in intramural participants. A One-Way analysis of variance (ANOVA) was performed to establish the differences in levels of depression between levels of athletic participation. This hypothesis was not supported, because there was not a significant difference between levels of athletic participation. However, the trend indicates that intercollegiate athletes have the lowest levels of depression when compared to intramural and non-athletes, $F (2, 236) = 1.85$, $p = .16$. The mean and standard deviation for each scale was calculated to assess the differences in scores between the athletic groups (See Table 2).

Table 2

Means and Standard Deviation for Depression, Anxiety, Satisfaction with Life, Athletic Identity, and Perceived Social Support Scores

Group	DEP	ANX	LS	AI	PSS
Collegiate	2.64 (3.10)	2.90 (3.31)	26.52 (5.31)	40.60 (6.58)	71.27 (14.42)
Intramural	3.08 (3.36)	3.71 (3.45)	27.09 (4.83)	30.20 (9.40)	73.77 (10.00)
Non-Athlete	3.80 (3.58)	4.10 (3.54)	24.54 (6.17)	23.85 (10.16)	68.95 (12.84)

Note. DEP = Depression, ANX = Anxiety, SWL = Satisfaction with Life, AI = Athletic Identity, PSS = Perceived Social Support

The second hypothesis stated that anxiety symptoms will be more prevalent in intercollegiate athletes than in intramural participants. A One-Way ANOVA was performed to investigate how different levels of athletic participation differ on levels of anxiety. This hypothesis was not supported, because there was not a significant difference between the groups. However, the trend suggests that intercollegiate athletes had the lowest levels of anxiety when compared to intramural and non-athletes, $F (2, 236) = 2.44$, $p = .09$ (See Table 2).

The third hypothesis stated that life satisfaction will be greater in intramural participants than intercollegiate athletes. A One-Way ANOVA was performed to establish the relationship between life satisfaction and the type of athletic participation. The hypothesis appeared to be supported, because intramural participants have the highest levels of life satisfaction when compared to intercollegiate and non-athletes, $F (2, 237) = 3.2$, $p = .04$ (See Table 2). However, a Post Hoc analysis was conducted and revealed a significant difference between collegiate athletes and non-athletes, but not

between intramural participants and non-athletes or collegiate athletes (See Table 3).

These results indicate the hypothesis was only partially supported.

Table 3

Bonferroni Post Hoc Analysis of Life Satisfaction

				95% CI	
Comparisons	Mean Difference	Std. Error	Sig.	Lower Bound	Upper Bound
Collegiate vs Intramural	.57	.75	1.0	-1.24	2.38
Collegiate vs Non-Athlete	2.55	1.01	.037	.11	4.99
Intramural vs Non-Athlete	1.98	.98	.137	-.39	4.35

Note. CI = Confidence Interval, Std. Error = Standard Error, Sig. = Significance

The fourth hypothesis stated that perceived social support and athletic identity will mediate the relationship between type of athlete and psychopathology. This hypothesis was not supported for depression or anxiety because there were no group differences. The hypothesis was supported for athletic identity being a mediating factor for life satisfaction. It was found that athletic identity is a significant covariate ($p = .05$) and a mediating factor for life satisfaction across the three athletic groups. The significant differences found between the groups are explained by the differences in athletic identity (See Table 4). The hypothesis was supported for perceived social support being a mediating factor for life satisfaction across the three levels of athletic participation ($p < .001$). The differences found between the groups are explained by the differences in perceived social support (See Table 5).

Table 4

Means and Standard Deviation for Level of Athletic Participation with and without Athletic Identity as a Mediating Factor for Life Satisfaction

	Athletic Level	Mean	SD	*F*	*p*
With Mediating Factor	Collegiate	26.52	5.31		
	Intramural	27.09	4.83	3.22	0.04*
	Non-Athlete	24.54	6.17		
Without Mediating Factor	Collegiate	26.74	5.34		
	Intramural	27.23	4.90	1.63	0.20
	Non-Athlete	25.04	6.71		

Note. SD = Standard Deviation,* p < 0.05

Table 5

Means and Standard Deviation for Level of Athletic Participation with and without Perceived Social Support as a Mediating Factor for Life Satisfaction

	Athletic Level	Mean	SD	*F*	*p*
With Mediating Factor	Collegiate	26.52	5.31		
	Intramural	27.09	4.83	3.22	1.52
	Non-Athlete	24.54	6.17		
Without Mediating Factor	Collegiate	26.67	5.37		
	Intramural	27.23	4.90	0.04	0.22
	Non-Athlete	25.04	5.38		

Note. SD = Standard Deviation

Perceived social support is a stronger mediating factor on life satisfaction than athletic identity. When both factors are considered together, perceived social support has a significant effect while athletic identity does not. Furthermore, when compared individually, perceived social support has a stronger F-value than athletic identity.

Chapter IV

Discussion

Previous research assessing the relationship between athletes and non-athletes in regards to depression, anxiety, and life satisfaction has yielded consistently similar results. The studies reported that athletes have lower levels of depression and anxiety than non-students (Armstrong & Oomen-Early, 2009; Boeschen, 2011; Jing-Horng Lu et al., 2012; Ludvigson, 2014; Mahnic & Tusak, 2005; Tenenbaum & Milgram, 1978). Previous research has indicated that athletes have higher levels of life satisfaction than non-athletes (Valois et al., 2004). Previous research assessing the relationship between psychopathology and class level of athletes has reported that higher classes of athletes have higher levels of depression and anxiety than lower classes of athletes (Masten et al., 2006). The current study sought to further evaluate these relationships by adding a new level of athletic competition, intramural athletics.

The first hypothesis stated that depression would be higher for intercollegiate athletes than intramural participants and non-athletes. This hypothesis was not supported, because the scores were statistically similar across groups of athletic participation. However, a trend of these results indicated that intercollegiate athletes had the lowest levels of depression when compared to intramural participants and non-athletes. These results lend credence to the body of evidence within the depression literature concerning athletes and non-athletes (Armstrong & Oomen-Early, 2009; Jing-Horng Lu et al., 2012; Ludvigson, 2014), which suggests that athletes have lower levels of depression than non-athletes. However, these results do not support the previous research in regards to levels of depression and the levels of athletic competition (Masten et al., 2006), which suggests

that athletes who participate at higher competition levels have higher depression levels

than lower competition level athletes. These findings indicate that intercollegiate athletes,

intramural participants, and non-athletes do not have significantly different buffering

agents against maintaining or developing depression. The results of the current study

indicate that intramural participants do not fit the trend that other elite athletic

participants do. Intramural participants do not show a significant decrease in levels of

depression when compared to intercollegiate athletes as would be expected given the

trend of other elite athletes (Jing-Horng Lu et al., 2012). This could be due to

intercollegiate athletes having more highly developed coping skills and more days per

week of intense physical activity compared to intramural participants (Masten et al.,

2006).

The second hypothesis stated that anxiety would be higher for intercollegiate

athletes than intramural participants and non-athletes. This hypothesis was not supported,

because there was no significant difference between the groups. A trend of the results

indicated that intercollegiate athletes had the lowest level of anxiety when compared to

intramural participants and non-athletes. These results, while still insignificant, lend

support to the body of evidence within the anxiety literature concerning athletes and non-

athletes (Boeschen, 2011; Mahnic & Tusak, 2005; Tenenbaum & Milgram, 1978), which

suggests that athletes have lower levels of anxiety than non-athletes. However, these

results are not consistent with the existing literature surrounding levels of anxiety and the

levels of athletic competition (Masten et al., 2006), which suggests that athletes who

participate at higher competition levels have higher anxiety levels than lower competition

level athletes. Given the previous research, it was expected that intramural participation

would reveal significantly lower levels of anxiety than participation in intercollegiate athletics. Findings from the current study indicate that the relationship between participation in intercollegiate athletics and participation in intramural athletics do not show the same trend as previously measured elite athletics. Furthermore, the results indicate that, like depression, intramural participants and intercollegiate athletes have lower levels of anxiety than non-athletes. In this case, the increase of athletic competition does not show an increase in anxiety as would be expected given the previous research. This, similar to depression, could be due to intercollegiate athletes having better developed coping skills, increased amount of physical activity, and more frequent interactions with teammates (Masten et al., 2006).

The third hypothesis stated that satisfaction with life would be higher for intramural participants than for intercollegiate athletes and non-athletes. This hypothesis was supported, because intramural participants had higher levels life satisfaction when compared to intercollegiate and non-athletes. This result adds new information to the body of research surrounding life satisfaction and athletes (Valois et al., 2004). These results are confounding for the results of previous researchers that investigated the relationship between life satisfaction and depression and anxiety levels (Boa et al., 2013; Lucas-Carrasco et al., 2014; Warnecke et al., 2014). In this instance, the results indicate that participation in athletics with low competition have higher levels of life satisfaction than those with high competition levels. Previous research indicated that athletic participation was positively correlated to life satisfaction, which suggests that more participation leads to high life satisfaction scores. This could be a result of intramural teams being formed by participants gathering friends to create a team. This allows

participants the opportunity to avoid participating with unpleasant teammates and to join with people with similar motivation levels, resulting in the individuals being more satisfied with their experience. It is also possible that individuals who participate in intramural athletics are less stressed with school work because they view their schedules as having room to add a leisure activity.

The fourth hypothesis stated that perceived social support and athletic identity will mediate the relationship between type of athlete and level of psychopathology. This hypothesis was not supported for depression or anxiety because there were no group differences so there cannot be a mediating factor. This hypothesis was supported for life satisfaction as perceived social support and athletic identity mediated the effects of life satisfaction. The significant differences that were found between the three groups can be explained by participants' perceived social support and athletic identity. When both factors were considered together, perceived social support was revealed to be the stronger of the two factors. It explained more of the found differences than did athletic identity.

Implications

While these findings do not support the hypotheses attempting to show that intramural participants have lower levels of depression and anxiety than intercollegiate athletes and non-athletes, they do begin to add new literature to the understanding of athletics and psychopathology. The results of the current study imply that intramural participation does not fit the model set forth by Masten et al. (2006), stating that higher level athletics positively correspond with depression and anxiety. Instead, intramural participants must be different in such a way that this trend does not apply. It is possible that intercollegiate athletes experience lower levels of depression and anxiety due to

factors like longer duration and more frequent days per week of physical exercise, and higher levels of self-esteem due to factors such as the self-determination theory (Jing-Horng Lu et al., 2012).

Additionally, the findings of the current study imply that common factors, within the intramural population at WKU, mediate the effects of life satisfaction better than those common factors within the intercollegiate population. Perceived social support and athletic identity account for much of the difference found between the athletic groups.

Lastly, the findings of the current study revealed that perceived social support was a better mediator of life satisfaction than athletic identity. These results indicate that a person's self-identity has less impact on happiness than being supported throughout his or her college years do. This is significant because this provides evidence that supports increasing athletes' perceived social support to increase their life satisfaction. Helping college athletes have a better experience throughout their college career can increase performance academically and athletically.

Limitations

One limitation of the present study is its lack of generalizability. The participants selected for this study were recruited within a single university. This inhibits the generalizability of results to students from other universities, states, or regions. Given the lack of diversity in geography, it is possible that the results might have differed if this research was done with participants from different locations.

Secondly, as previously mentioned, there are concerns with the reliability of the DASS anxiety subtest score that was used for the present study. The present study found a Cronbach alpha of .79 which is approaching the .80 criterion that is used to evaluate

good internal reliability, but still does not reach significance. It would be beneficial to use an anxiety measure that has better internal consistency, such as the Beck Anxiety Inventory.

Future Research

The next step with this research would be to measure club sports at a collegiate level. The research should include a measure of depression, anxiety, and life satisfaction. This would be beneficial because club teams provide a closer relationship to intercollegiate athletics by incorporating coaches, mandatory practice times, and traveling. These requirements have the potential to increase the level of seriousness the athletes feel toward their sport. Increase in this type of feeling could cause the athletes to feel more pride in accomplishments and feel more dissatisfied with failures. This could reveal differences that are consistent with previous research in regard to competition levels being related to levels of depression and anxiety.

Future research should aim to do a side-by-side comparison of each sport to identify whether some sports are more affected by competition level than others. This could add to the limited body of research surrounding individual and team sport comparisons. It would also be beneficial to compare male and female sports by competition level to investigate whether one gender is more affected than the other. Lastly, future research should investigate what the athletes view as stressful (e.g., sport participation, practice times, school work, lack of sleep). This would add information to what aspects of sport participation cause difficulty for the athletes and how they perceive these factors.

Conclusion

These findings of the present study expand on current literature regarding athletes and psychopathology. They add another level of competition that can be compared to others when predicting levels of depression and anxiety. However, the findings regarding life satisfaction are inconsistent with current research and, therefore, require some further investigation to understand the relationship between intramural participants and satisfaction with life.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental*

    disorders: (5th Edition). Washington, DC: American Psychiatric Association.

Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem, and

    depression symptomatology among collegiate athletes versus nonathletes. *Journal*

    of American College Health, 57, 521-526.

Athlete, (n.d.) In *Merriam-Webster's collegiate dictionary.*

    Retrieved from http://www.merriam-webster.com/dictionary/athlete

Boa, X., Pan, W., Shi, M., & Ji, M. (2013). Life satisfaction and mental health in

    Chinese adults. *Social Behavior and Personality,41,* 1597-1604.

Boeschen, E. (2011). Examining the cognitive and somatic manifestation of competitive

    state anxiety in Special Olympics athletes. *The Sciences and Engineering, 72,*

    2431-2438.

Brewer, W. (1993). Self-identity and specific vulnerability to depressed mood. *Journal of*

    Personality, 61, 343-364.

Brewer, B. W., & Cornelius, A. E. (2001). Norms and factorial invariance of the athletic

    identity measurement scale. *Academic Athletic Journal, 15*, 103–113.

Brewer, W., Van Raalte, J., & Linder, D. (1993). Athletic identity: Hercules' muscles or

    Achilles heel? *International Journal of Sports Psychology, 24,* 237-254.

Canty-Mitchell, J., & Zimet, G. (2000). Psychometric properties of the Multidimensional

    Scale of Perceived Social Support in urban adolescents. *American Journal of*

    Community Psychology, 28, 391-400.

Cosh, S., Crabb, S., & LeCouteur, A. (2013). Elite athletes and retirement: Identity, choice, and agency. *Australian Journal of Psychology, 65,* 89-97.

Diener, E. D., Emmons, R. A., Larsem, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*, 71-75.

Dziembowska, I., Izdebski, P., Rasmus, A., Brudny, J., Grzelczak, M., & Cysewski, P. (2015). Effects of heart rate variability biofeedback on EEG alpha asymmetry and anxiety symptoms in male athletes: A pilot study. *Applied Psychophysiology Biofeedback, 10,* 1-10.

Hale, B. D., & Waalkes, D. (1994). Athletic identity, gender, self-esteem, academic importance, and drug use: A further validation of the AIMS [pdf document]. Retrieved from

https://etd.ohiolink.edu/rws_etd/document/get/osu1091219903/inline

Henry, J., & Crawford, J. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 44,* 227-239.

Intercollegiate, (n.d.) In *Merriam-Webster's collegiate dictionary.*
Retrieved from http://www.merriam-webster.com/dictionary/
intercollegiate

Intramural, (n.d.) In *Merriam-Webster's collegiate dictionary.*
Retrieved from http://www.merriam-webster.com/dictionary/
intramural

Jing-Horng Lu, F., Hsu, Y., Chan, Y., Cheen, J., & Kao, K. (2012). Assessing college

    student-athletes' life stress: Initial measurement development and validation.

    Measurement in Physical Education and Exercise Science, 16, 254-267.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states:

    Comparison of the Depression anxiety Stress Scales (DASS) with the Beck

    Depression and Anxiety Inventories. *Pergamon, 33*, 335-343.

Lucas-Carrasco, R., Sastre-Garriga, J., Galan, I., Den Oudsten, B., & Power, M. (2014).

    Preliminary validation study of the Spanish version of the satisfaction with life

    scale in persons with multiple sclerosis. *Disability and Rehabilitation: An*

    International, Multidisciplinary Journal, 36, 1001-1005.

Ludvigson, C. (2014). Health risk behaviors of female student-athletes and the

    relationship to social support and athletic identity. *Humanities and Social*

    Sciences, 74.

Maher, J., Pincus, A., & Ram, N. (2015). Daily physical activity and life satisfaction

    across adulthood. *Developmental Psychology, 10,* 1407-1419.

Mahnic, J., & Tusak, M. (2005). Structure of personality and motivation of extreme

    sports athletes. *Psiholoska Obzorja/Horizons of Psychology, 14,* 107-121.

Malinauskas, R. (2010). The associations among social support, stress, and life

    satisfaction as perceived by injured college athletes. *Social Behavior and*

    Personality, 38, 741-752.

Martin, J. J., Eklund, R. C., & Adams-Mushett, C. (1997). Factor structure of the Athletic

    Identity Measurement Scale with athletes with disabilities. *Adapted Physical*

    Activity Quarterly, 14, 74-82.

Masten, R., Tusak, M., & Faganel, M. (2006). Impact of identity on anxiety in athletes. *Kinesiology, 2*, 126-134.

Mitchell, I., Evans, L., Rees, T., & Hardy, L. (2014). Stressors, social support, and tests of the buffering hypothesis: Effects on psychological responses of injured athletes. *British Journal of Health Psychology, 19,* 486-508.

Osman, A., Wong, J., Bagge, C., Freedenthal, S., Gutierrez, P., & Lorano, G. (2012). The depression anxiety stress scales-21 (DASS-21): Further examination of dimensions, scale reliability, and correlates. *Journal of Clinical Psychology, 68,* 1322-1338.

Powell, D. (2004). Treating individuals with debilitating performance anxiety: An introduction. *JCLP/In Session, 60*, 801-808.

Roberts, K., Hart, T., & Eastwood, J. (2016). Factor structure and validity of the State-Trait Inventory for Cognitive and Somatic Anxiety. *Psychological Assessment, 28,* 134-146.

Sari, I. (2015). Does goal orientation matter for trait anxiety, self-efficacy and performance? An investigation in university athletes. *Education, 136,* 169-178.

Silva, A., Taveira, M., Marques, C., & Gouveia, V. (2015). Satisfaction with Life Scale among adolescents and young adults in Portugal: Extending evidence of construct validity. *Social Indicators Research, 120,* 309-318.

Tenenbaum, G., & Milgram, R. (1978). Trait and state anxiety in Israeli student athletes. *Journal of Clinical Psychology, 34,* 691-693.

Tennant, J., Demaray, M., Coyle, S., & Malecki, C. (2015). The dangers of the web:

Cybervictimization, depression, and social support in college students. *Computers in Human Behavior, 50,* 348-357.

Valois, R., Zullig, K., Huebner, E., & Drane, J. (2004). Physical activity behaviors and perceived life satisfaction among public high school adolescents. *Journal of School Health, 74,* 59-66.

Warnecke, A., Baum, C., Peer, J., & Goreczny, A. (2014). Intercorrelations between individual personality factors and anxiety. *College Student Journal, 48,* 23-33.

Zhang, B., Yan, X., Zhao, F., & Yuan, F. (2014). The relationship between perceived stress and adolescent depression: The roles of social support and gender. *Social Indicators Research, 123,* 501-518.

Zhou, X., Zhu, H., Zhang, B., & Cai, T. (2014). Perceived social support as a moderator of perfectionism, depression, and anxiety in college students. *Social Behavior and Personality, 41*, 1141-1152.

Zimet, G., Dahlem, N., Zimet, S., & Farley, G. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 51*, 30-41.

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., Berkoff, K. A. (1990). Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 55*, 610-617.

Appendix A: Demographics

Please complete the following information.

Age in years: _____

Gender:

      Male   Female   Other:_____

Education:

      Freshman   Sophomore   Junior   Senior

      Graduate Student   Other:_____

Race/Ethnicity:

      Caucasian   African American   Hispanic/Latino   Asian   Other:_____

Marital Status:

      Married   Dating   Single   Other:_____

Living Arrangements:

      On Campus   Off Campus

What sport(s) do you participate in:

      Basketball   Baseball   Softball   Volleyball   Soccer   Track & Field

      Football   Tennis   Golf   Cheerleading   None   Other:_____

What type of team do you participate in:

      Intramural Team   University Team   None/Neither

In your lifetime, how many years have you participated in this (these) sport(s): _____

Appendix B: DASS 21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you <u>over the past week.</u> There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

    0 Did not apply to me at all - NEVER

    1 Applied to me to some degree, or some of the time - SOMETIMES

    2 Applied to me to a considerable degree, or a good part of time - OFTEN

    3 Applied to me very much, or most of the time - ALMOST ALWAYS

	Over the Past Week…	Never	Sometimes	Often	Almost Always
1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy (e.g., short fused)	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix C: The Satisfaction with Life Scale

DIRECTIONS: 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 in the line preceding that item. Please be open and honest in your responding.

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

_____1. In most ways my life is close to my ideal.

_____2. The conditions of my life are excellent.

_____3. I am satisfied with 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 D: Athletic Identity Measurement Scale

Please circle the number that best reflects the extent to which you agree or disagree with each statement regarding your sport participation.

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 feel bad about myself when I do poorly in sport.

Strongly disagree   1   2   3   4   5   6   7   Strongly agree

7.) 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 E: Multidimensional Scale of Perceived Social Support

<u>Instructions:</u> We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you Very Strongly Disagree
Circle the "2" if you Strongly Disagree
Circle the "3" if you Mildly Disagree
Circle the "4" if you are Neutral
Circle the "5" if you Mildly Agree
Circle the "6" if you Strongly Agree
Circle the "7" if you Very Strongly Agree

		VSD	SD	MD	N	MA	SA	VSA
1	There is a special person who is around when I am in need	1	2	3	4	5	6	7
2	There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
3	My family really tries to help me	1	2	3	4	5	6	7
4	I get the emotional help and support I need from my family	1	2	3	4	5	6	7
5	I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
6	My friends really try to help me	1	2	3	4	5	6	7
7	I can count on my friends when things go wrong	1	2	3	4	5	6	7
8	I can talk about my problems with my family	1	2	3	4	5	6	7
9	I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
10	There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
11	My family is willing to help me make decisions	1	2	3	4	5	6	7
12	I can talk about my problems with my friends	1	2	3	4	5	6	7