Gender Comparison of the Effects of Injuries on Athletes

by

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Submitted in partial fulfillment of the requirements for the degree of Master in Education at Carthage College

Kenosha, Wisconsin

2018
ABSTRACT

The purpose of this research study was to investigate the emotional and psychological responses to injury in both male and female collegiate athletes.

The study involved 126 male and 126 female collegiate athletes. These athletes participated in baseball, basketball, cross country, diving, field hockey, golf, lacrosse, soccer, swimming, tennis, volleyball, or water polo at a Southeastern Wisconsin Division III College.

Each participant completed The Emotional Response of Athletes to Injury Questionnaire. Results were analyzed and indicated that the level of stress prior to injury was greater in female athletes than male athletes. Results also indicated that female athletes were more fearful to return to play after their injury than male athletes.

The results of this study will be of special interest to all personal working with collegiate athletes, especially coaches. It is important that groups working with these athletes are aware of the psychological impacts that injuries have on athletes before and after their injuries.
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to Allen Klingenberg and Paul Zavada. Without their continuous guidance, motivation and relentless support this project would not have reached completion. Thank you both for your dedication, assistance and patience.
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Chapter 1
Introduction

Overview

According to the National Collegiate Athletic Association (NCAA), there are nearly eight million students currently participating in high school athletics in the United States. Out of those eight million, only about 480,000 will continue to participate in their sport at the collegiate level. The pursuit of excellence in athletics is something that collegiate athletes strive for. Many variables affect whether or not an athlete is successful in this pursuit. Their physical attributes, learning style, work ethic, and how they manage stress are only a few of factors that can affect whether or not an individual is successful in their sport. The absence of injury is another factor.

Participating in sports at the collegiate level requires a higher level of performance and specialization year round rather than just seasonally. As a result of college athletes training and competing year around the level of physicality increases. The National Athletic Trainers Association (NATA), claims that the increase in the level of physicality in sport at the collegiate level “leads to greater risk of injury.” The consequences that come from an athlete obtaining an injury can be detrimental not only physically but mentally as well.

NATA reported an average of 12,500 injuries a year at the NCAA level. With the number of athletes participating at the collegiate level in sports rising, the injury rates are rising as well. In addition to the physical pain that athletes experience with an injury, many struggle psychologically as well. Because
psychological variables influence injury onset, duration, and recover, many researchers have concluded that “rehabilitation from sport injury involves not only physical, but psychological considerations” (Crossman, 1997).

In this study, the researcher explored the emotional and psychological variables that influence injury onset, and the effect injuries had on male and female college athletes.

Problem Statement

The emotional response to injury varies greatly among athletes. Early researchers have attempted to generalize the emotional response to injury. However, the post-injury reactions of athletes are more complex and varied than originally thought (Crossman, 1997; Smith, 1990). This study investigated the emotional effects of injury on male and female collegiate athletes.

Guiding Questions for Research Hypothesis Development

This research was conducted at a Midwest Division III College. The purpose of this study was to compare male and female collegiate athlete’s emotional and psychological response pre and post injury. The guiding questions that were the foundation of this study included:

1. Can athlete’s emotional state influence whether or not they get injured?
2. Does the emotional and psychological response to injury differ based on gender?
3. Does the emotional and psychological response to return to play differ based on gender?
Purpose

The purpose of this research study was to investigate the emotional and psychological on-set and response of injury in both male and female collegiate athletes.

Hypotheses

The following four sets of hypotheses guided this study.

**Null Hypothesis One:** Prior to injury, the number of injured female athletes claiming to have a higher level of stress will be equal to the number of injured female athletes claiming to not have a high level of stress.

**Research Hypothesis One:** Prior to injury, the number of injured female athletes claiming to have a higher level of stress will not be equal to the number of injured female athletes claiming to not have a high level of stress.

**Null Hypothesis Two:** Prior to injury, the number of injured male athletes claiming to have a higher level of stress will be equal to the number of injured male athletes claiming to not have a high level of stress.

**Research Hypothesis Two:** Prior to injury, the number of injured male athletes claiming to have a higher level of stress will not be equal to the number of injured male athletes claiming to not have a high level of stress.

**Null Hypothesis Three:** The number of female athletes reporting to be fearful when returning to sport after injury will be equal to the number of female athletes reporting to not be fearful when returning to sport after injury.
Research Hypothesis Three: The number of female athletes reporting to be fearful when returning to sport after injury will not be equal to the number of female athletes reporting to not be fearful when returning to sport after injury.

Null Hypothesis Four: The number of male athletes reporting to be fearful when returning to sport after injury will be equal to the number of male athletes reporting to not be fearful when returning to sport after injury.

Research Hypothesis Four: The number of male athletes reporting to be fearful when returning to sport after injury will not be equal to the number of male athletes reporting to not be fearful when returning to sport after injury.

Definition of Terms

Below is a list of important definitions of terms used throughout this research study.

Emotions- A subjective conscious experience that is characterized primarily by psycho physiological expressions, biological reactions and mental state

Fear- An unpleasant emotion caused by being aware of danger: a feeling

National Collegiate Athletic Association (NCAA) - is a non-profit association, which regulates athletes of 1,281 institutions, conferences, organizations, and individuals.

Psychological: Pertaining to, dealing with, or affecting the mind, especially as a function of awareness, feeling, or motivation:

Sport Injury- Injuries that occur in athletic activities.
**Stress**- a state of mental or emotional strain or tension resulting from adverse or very demanding circumstances.

**Chapter Summary**

The purpose of this research study was to compare the emotional and psychological on-set and response to injury of both male and female athletes. It is important for those involved in athletics to become familiar with the knowledge surrounding the emotional and psychological impacts that injuries can have on athletes.
Chapter 2

Review of Related Literature

Overview

The purpose of this research study was to examine the emotional and psychological response of injury in both male and female collegiate athletes.

Research surrounding the psychology of sport injury has developed and expanded significantly over recent years (Brewer, 2007; Evans, Mitchell, & Jones, 2006; Williams and Andersen, 2007). Past research on the psychology of sport injury can be separated into two broad domains: (a) prediction of sport injury, and (b) response to sport injury.

Prediction of Sport Injury

Although engaging in sport and exercise has shown to benefit one’s health and general well-being, not all outcomes from participation in sport and exercise are positive (Bathgate, Best, Craig, & Jamieson, 2002; Bert & Overpeck, 2001; Brooks, Fuller, Kemp, & Reddin, 2005; Conn, Annest, & Gilchrist, 2003: Uitenbroek, 1996). “Physical injury is an inherent risk in sports participation and, to a certain extent, must be considered and inevitable cost of training, conditioning, and competition” (N. Maffulli et al, 2011, p.97). A population survey conducted by Uitenbroek (1996) found that sport and exercise to be the most prevalent cause of injury. Of the participants examined (n=6596), 335 (5.1%) reported being injured in the previous month and 32.5% of those participants were injured while engaging in sport and exercise. Uitenbroek (1996) concluded that, “Given the high level of exercise-and sport-
related injuries reported by the participants, learning more about the cause and consequences of those injuries is paramount." Udry and Andersen (2008) reported that there are multiple and complex factors in relation to the cause of athletic injuries. Some of these factors are physical and physiological (e.g., body composition), anatomical (e.g., biomechanical factors), and environmental (e.g., weather conditions). Weinberg & Gould (2003) state that physiological factors are the biggest risk factor to the occurrence of sport injuries but even psychological factors could contribute.

Focusing specifically on early research into the psychosocial risk factors of injury occurrence, Andersen and Williams (1988) introduced a model of the prediction of sport injury. After being revised in 1998 (Williams & Andersen) it remains the most comprehensive and prominent model in this area of research. See figure 1. below:
According to Williams and Andersen’s (1998) model there are various factors that could increase the injury risk. These risk factors are divided into three main categories: personality (e.g., hardiness, locus of control, sense of coherence, competitive trait anxiety, achievement motivation, sensation seeking), history of stressors (i.e., major life events, daily hassles, previous injuries), and coping resources (e.g., general coping behaviors, social support, psychological skills). The Williams and Andersen (1998) model suggest that those three factors: personality, history of stressors, and coping resources contribute to the prediction of sport injury either in isolation or interactively.

**Personality**

Personality is a factor that has a great influence on a person’s behavior (Adams, 1995; Fuller, 2005). Studies have shown that different personality factors (i.e. aggression & anger) may affect an athlete’s injury rate (Williams &

Also, a case study of football players done by Fuller (2005), found that there was a relationship between an aggressive behavior and the occurrence of injury. Other studies have showed a correlation between personality factors and injuries as well. Dunn (1999) established that worry of becoming injured had a positive relationship to anxiety. According to Dunn (1999), the increased anxiety level may perhaps be one key factor that increases the injury risk.

**History of Stressors**

Numerous studies have indicated a connection between sport injuries and a high stress level (Patterson, Smith & Everett, 1998; Johnson, 2006). In 2001 a study done by Woodman and Hardy indicated that different stressors might affect an elite athlete. The authors further argued that almost all stressors that appear in sport practice can be placed in the sub groups below:

- Environmental Issues (Finances and training environment)
- Personal issues (Injury and goals/expectations)
- Leadership Issues (Coaches and coaching styles)
- Team Issues (Team atmosphere and communication)

Williams and Andersen (1998) propose that the three categories in the stress-injury model (see figure 1) will impact an athlete’s stress response. Some examples of stress responses could be:

- Narrowing attention
- Greater distractibility
Higher level of muscle tension

A study by Lysens, Wanden Auweele and Osteen (1986) examined the relationship between life changes and the frequency of injuries, as well as the relationship between history of stressors and injury rates. The participants (n=99) were asked to complete a questionnaire that allowed for changes in life and history of stressors to be measured. Throughout the time span of one year the researchers collected injury data from all the participants. The result showed that athletes who had a high level of changes in life were more injured than the athletes with a low change level. Also, reported was that athletes with few histories of stressors reported less injuries. Coping resources may help athletes deal with the stressors that he/she will be exposed to, and perhaps help the athlete perceive fewer situations as stressful (Williams & Andersen, 1998).

*Response to Sport Injury*

Being a competitive athlete demands commitment, hard work, dedication and, most importantly, a passion. “Injury onset, the process of rehabilitation, and return to competitive sport is associated with its own set of demands” (Evans, Hardy, & Fleming, 2000; Gould, UDRY, Bridges, & Beck, 1997; Johnston & Carroll, 1998; Podlog & Eklund, 2006; Tracey, 2003). For many athletes, their sport dictates their life and is a part of their personal identity. When an athlete experiences an injury and they are no longer able to physically participate in their sport, “it is like they are losing a significant part of themselves,” (Ross 2006).
More research has been done in the recent years regarding the psychosocial impact of sport injury. In a study by Quakenbush and Crossman (1994), injured athletes reported being irritable, miserable, and unhappy on the day following the injury compared to positive emotions like cooperative, optimistic, good, happy, and enthusiastic reported during rehabilitation. This research has been guided in a large part by cognitive appraisal models of injury response. Of these models, the most commonly used is Wiese-Bjornstal et al's (1998) integrated model. See Figure 2, below:
Figure 2. Integrated Model of Psychological Response to The Sport Injury Rehabilitation Process (Wiese-Bjornstal et al., 1998).
The integrated model of response (Wiese-Bjornstal et al., 1998) proposes that some form of emotional reaction can be expected from the athlete in response to his/her injury. In response to the sport injury and rehabilitation process, a variety of different emotions can occur and some impact other behavioral and cognitive responses (Wiese-Bjornstal et al., 1998). Anxiety, depression, stress, and anger are among the most common emotions reported following an athletic injury, (Brown, 2005; Faris, 1995; Taylor & Taylor, 1997).

Fear is another emotion experienced frequently by injured athletes. Some athletes may be hesitant to return to play after an injury. According to Vealey (1998), athletes are fearful about re-injury. The fear that they experience might cause them to be reluctant to train with full intensity. Some athletes may be hesitant to return to training at all as a result of the fear. Quinn & Fallon (2008), discuss how an athlete can physically recover from an injury and yet they may not attain a complete psychological recovery. Not being emotionally and psychologically ready to return to play may impact whether or not athletes experience re-injury.
Chapter Summary

This chapter discussed some of the previous research findings and studies done on the psychology of sport injury. Current research has increased our knowledge and understanding of the psychosocial factors that predict injury occurrence, and the psychological responses that follow injury.

The challenges that injured athletes experience mentally and physically are something that continues to be examined. Further research on emotional responses of athletes from athletic injuries is beneficial for sport psychology, as well as, trainers, coaches, health professionals, and others who may help athletes recover from an injury both physically and emotionally.
Chapter 3
Methodology

Design

This study was conducted at a Midwest Private Division III College. The purpose of this study was to gain knowledge on the emotional and psychological affects that injuries have on male compared to female collegiate athletes.

Subjects

There were a total of 252 participants in this study. Of the 252 participants, 126 were male and 126 were female. The participants ranged in age from 18 to 23 years. The athletes represented 24 different teams: baseball, men’s basketball, women’s basketball, men’s cross country, women’s cross country, men’s diving, women’s diving, field hockey, football, men’s golf, women’s golf, men’s lacrosse, women’s lacrosse, men’s soccer, women’s soccer, softball, men’s swimming, women’s swimming, men’s tennis, women’s tennis, men’s volleyball, women’s volleyball, and women’s water polo. The participants included both athletes who had experienced injury and those who had not. Each participant completed the Emotional Responses of Athletes to Injury Questionnaire, (see Appendix A).

Instruments

The main instrument used in this study was the Emotional Response of Athletes to Injury Questionnaire shown in Appendix A. The Emotional Responses of Athletes to Injury Questionnaire (ERAIQ) identifies athlete’s
emotional responses to injury and is used to assess the injured athlete’s psychosocial response to injury (Smith et al., 2001). The ERAIQ has been extensively used in injury rehabilitation literature (Langford, Webster & Feller, 2009).

**Procedures**

For this study the researcher created an online document of the ERAIQ questionnaire that was emailed to all the 2015-2016 current athletes on the team rosters at the private Division III College in the Midwest. The online document was strictly voluntary and anonymous. There were minimal to no risks related to the study. Participants were free to withdrawal and/or not answer any question(s) they felt uncomfortable answering. This study was approved by the colleges IRB as exempt.

**Data Analysis**

The data collected from the Emotional Response of Athletes to Injury Questionnaire was from both male and female, injured and non-injured athletes. Chi-Square tests were used to compare the emotional and psychological response to injury of both male and female athletes. Athletes who claimed to have never experienced an injury were excluded from the test.
Chapter Summary

Chapter three focused on how this study gathered data to be analyzed. It also indicated how the analysis of the data was processed. The data was collected through the collection of the Emotional Response of Athletes to Injury Questionnaire (ERAIQ) filled out by each participant. All data was collected online anonymously. The data was analyzed through excel using Chi-Squared tests.
Chapter 4
Results

Overview

The purpose of this study was to compare male and female collegiate athlete's emotions pre and post injury at a Midwest Division III Private College. Below are the data analysis results which show if there are any statistically significant difference for each of the four sets of hypotheses.

Findings

Using Chi-Square tests the researcher analyzed the data collected from the Emotional Response of Athletes to Injury Questionnaire. Results for hypotheses one through four, below include a restatement of the null and research hypotheses preceding the presentation of the appropriate analysis and results. Table 1 below was used to present the Chi-Square test results for hypothesis one through four.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Hypothesis</th>
<th>Hypothesis</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Two</td>
<td>Three</td>
<td>Four</td>
</tr>
<tr>
<td>Observed</td>
<td>43</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>Expected</td>
<td>50.5</td>
<td>56</td>
<td>49.5</td>
</tr>
<tr>
<td>Chi Squared Value</td>
<td>1.11</td>
<td>14.22</td>
<td>0.005</td>
</tr>
<tr>
<td>Chi Squared Critical</td>
<td>3.841</td>
<td>3.841</td>
<td>3.841</td>
</tr>
<tr>
<td>Reject Null</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 1. Chi Square Analysis Results

In terms of hypothesis set one results presented in Table 1

- Null: Prior to injury, the number of injured female athletes claiming to have a higher level of stress will be equal to the number of injured female athletes claiming to not have a high level of stress.

- Research: Prior to injury, the number of injured female athletes claiming to have a higher level of stress will not be equal to the number of injured female athletes claiming to not have a high level of stress.

In Table 1 the results for hypothesis set one found no statistically significant difference in the amount of injured female athletes claiming to have a higher level of stress prior to being injured compared to the amount of injured female athletes claiming to not have a higher or a high level of stress prior to being injured. Using a Chi Square test with 1 degree of freedom and a 95% confidence level, the p critical was 3.84. By finding a Chi Square statistic of 1.11, this allows the researcher to accept null hypothesis one.

In terms of hypothesis set two results presented in Table 1

- Null: Prior to injury, the number of injured male athletes claiming to have a higher level of stress will be equal to the number of injured male athletes claiming to not have a high level of stress.

- Research: Prior to injury, the number of injured male athletes claiming to have a higher level of stress will not be equal to the number of injured male athletes claiming to not have a high level of stress.
In Table 1 the results for hypothesis set two found a statistically significant difference in the number of injured male athletes claiming to have a higher level of stress prior to being injured compared to the number of injured male athletes claiming to not have a higher level of stress prior to being injured. Using a Chi Square test with 1 degree of freedom and a 95% confidence level, the p critical was 3.84. By finding a Chi Square statistic of 14.22, this allows the researcher to reject null hypothesis two and accept research hypothesis two at a 95% confidence level.

In terms of hypothesis set three results presented in Table 1

- Null: The number of female athletes reporting to be fearful when returning to sport after injury will be equal to the number of female athletes reporting to not being fearful when returning to sport after injury.
- Research: The number of female athletes reporting to be fearful when returning to sport after injury will not be equal to the number of female athletes reporting to not be fearful when returning to sport after injury.

In Table 1 the results for hypothesis set three found no statistically significant difference in the number of female athletes reporting to be fearful when returning to sport after injury compared to the amount of female athletes reporting to not be fearful returning to sport after injury. Using a chi square test with 1 degree of freedom and a 95% confidence level, the p critical was 3.84. By finding a Chi Square statistic of 0.005, allows the researcher to accept null hypothesis three at a 95% confidence level.
In terms of hypothesis set four results presented in Table 1

- Null: The number of male athletes reporting to be fearful when returning to sport after injury will be equal to the number of male athletes reporting to not be fearful when returning to sport after injury.

- Research: The number of male athletes reporting to be fearful when returning to sport after injury will not be equal to the number of male athletes reporting to not be fearful when returning to sport after injury.

In Table 1 the results for hypothesis set four found a statistically significant difference in the number of injured male athletes reporting to be fearful when returning to sport after injury compared to the number of injured male athletes reporting to not be fearful returning to sport after injury. Using a Chi Square test with 1 degree of freedom and a 95% confidence level, the Chi Square critical was 3.84. By finding a Chi Square Statistic of 30.86, this allows the researcher to reject null hypothesis four and accept research hypothesis four at a 95% confidence level.
Chapter Summary

A Chi Square test with 1 degree of freedom and a 95% confidence level, resulting in a Chi Square critical of 3.84 was used to analyze the data for hypothesis one, two, three and four. The test analyzed stress and fear in both males compared to female injured athletes. The test found no statistical significance between the observed and expected for hypothesis one and three, resulting in accepting these null hypotheses. The Chi Square analysis did find statistical significance between the observed and expected for hypothesis two and four, which resulted in accepting the research hypotheses for two and four.
Chapter 5

Discussion, Conclusion, and Recommendations

Overview

As described previously, there were four hypotheses studied regarding injuries and athletes at a Midwest Private Division III College. The first two sets of Hypotheses studied focused on the athletes’ psychological state prior to being injured. The second set of hypotheses focused on the athletes’ psychological state when returning to play. Based on the data analysis results, there was no significant difference in the number of injured female athletes claiming to not have a high level of stress prior to their injury compared to injured female athletes claiming to have a high level of stress prior to their injury. There was a significant difference in the number of male athletes claiming to have a high level of stress prior to their injury compared to the number of male athletes claiming to not have a high level of stress prior to being injured. Based on the data analysis results, there was no significant difference in the number of injured female athletes fearful of returning to play after being injured compared to the number of female athletes not fearful to return to play after being injured. However, there was a significant difference between the number of male athletes fearful of returning to play after being injured compared to the number of male athletes not fearful to return to play after being injured.
Discussion

This study’s results were supported by several research studies cited in Chapter Two. Dealing with an athletic injury is never easy. The physical aspect of the injury is only one part of the hardships that come when acquiring an athletic injury. The main point of this study was to determine if there was a significant difference in the emotions experienced by injured male athletes compared to the emotions experienced by injured female athletes both prior to injury and post injury.

Previous research found that frustration, depression, anger, and anxiety to be the most common emotional response to athletic injury (Crossman 1997, McDonald 1990, Smith 1996).

Conclusion

The fact that athletes experience such negative emotions in response to injury is an issue that needs to be addressed. This is because these negative emotions could potentially “hinder the athlete’s recovery” (Yukelson, 1991). Although every athlete and how they cope with injuries is different, the American College of Sports Medicine states that it is “important to consider psychological factors, as well as physical factors, when treating and coordinating care for injured athletes.”

From the data that was collected it is clear that an athletic injury can have both a psychological and emotional effect. It is important that the psychological and emotional impact of an athletic injury on athletes is acknowledged, and there is a continued effort to help athletes that are
struggling with these effects of injury. Overall, this research is a valuable addition to the current research on the on-set of injuries as well as current research on an athlete’s emotional responses to injury.

**Recommendations**

The results from this study suggest several important implications that emphasize the need for individuals that work with athletes, such as coaches, trainers and other athletic staff to address the emotional rehabilitation that some injured athletes might need. Athletic injuries that prevent the athlete from competing in the sport they love can have an emotional and psychological effect on them. This can hinder the athlete’s ability to recover, which can ultimately lead to other issues. According to the Official Journal of the American College of Sports Medicine, “for many athletes, exercise and physical activity serves as a primary coping mechanism and outlet for dealing with psychological issues. In these athletes an injury may result in even greater emotional upheaval.” For further research to be looking into specific stressors that athletes experience prior to injury is necessary. This is necessary because determining whether the stress athletes experience prior to injury due to academics, athletics, family, etc. Could help lead to prevention of those stressors. Does what the athlete is stressing about impact the severity of the injury. Lastly, to research how coaches can relieve some fear when injured athletes return to their sport.
Chapter Summary

The results of this study did not show a significant difference in female athletes regarding their level of stress prior to injury or fear when returning to sport. However, the study did show a significant difference in male athletes regarding their level of stress prior to injury or fear when returning to sport. The researcher found that there is a need for further research into specific stressors that athletes experience prior to injury, if the stress athletes experience prior to injury due to academics, athletics, family, etc., does what the athlete is stressing about impact the severity of the injury, and lastly, how can coaches relieve some fear when their athletes return to their sport.
References


Appendix A.

Psychological Impact of Athletic Injuries Questionnaire.

Psychological Impact of Athletic Injuries
You are invited to participate in a study to gain knowledge and understanding on the potential emotional effects that injuries can have on collegiate athletes. The outcomes of this study may include student presentations, presentations at professional conferences, and published scientific articles. If you volunteer to be part of this study, you will be asked to complete a short survey. Participant's full confidentiality will be kept during and after this study. All results will be presented as grouped data. Only research personnel will have access to the data collected. There are minimal to no risks related to this study. You are free to not answer any questions you feel uncomfortable answering. If at anytime you do not want to continue with the survey you are free to withdraw from the study.

1. Year in School
   Mark only one oval.
   - Freshmen
   - Sophomore
   - Junior
   - Senior
   - Other:

2. Gender
   Mark only one oval.
   - Male
   - Female

3. If you could be anything you wanted to be in life what would your dream be?

4. Sport (Please list main sport first and any additional after)

Why do you participate in sports
Rate each on a scale of 0 (low) to 10 (High)

5. Self-discipline
   Mark only one oval.
6. Competition
Mark only one oval.

1 2 3 4 5 6 7 8 9 10

7. Socialisation
Mark only one oval.

1 2 3 4 5 6 7 8 9 10

8. Fitness
Mark only one oval.

1 2 3 4 5 6 7 8 9 10

9. Fun
Mark only one oval.

1 2 3 4 5 6 7 8 9 10

10. Stress Management
Mark only one oval.

1 2 3 4 5 6 7 8 9 10

11. Personal Improvement
Mark only one oval.

1 2 3 4 5 6 7 8 9 10

12. Aggression Outlet
Mark only one oval.

1 2 3 4 5 6 7 8 9 10
13. Weight Management

Mark only one oval.

1 2 3 4 5 6 7 8 9 10

14. Other

Mark only one oval.

1 2 3 4 5 6 7 8 9 10

15. If other what is other?

16. Would you describe yourself as an athlete?

Mark only one oval.

1 2 3 4 5

Absolutely Not

Absolutely Yes

Injury

Please answer the following questions based on your Collegiate Athletic Experience

17. Have you ever had an injury that prevented you from participating in your sport?

Mark only one oval.

Yes

No

18. What was/is the nature of your injury?

19. When did your injury occur?

Mark only one oval.

Before the season

During the season

After the season

20. What sport were you injured in?
21. About how long were you unable to participate fully?

22. What specific goals do you have in sports?

23. Have they changed since your injury?
   *Mark only one oval.*
   - Yes
   - No

24. Are you encouraged in sports by significant others?
   *Mark only one oval.*
   - Yes
   - No

25. Who exerts the most pressure
   *Mark only one oval.*
   - Self
   - Mom
   - Dad
   - Coach
   - Other:

26. What are the major sources of stress in your life right now? (list 4 in order of most stressed to least stressed)

27. Were you under recent stress before your injury?
   *Mark only one oval.*
   - Yes
   - No

28. Do you have a strong family support system or close friends who know about your injury?
   *Mark only one oval.*
   - Yes
   - No
29. If yes who?

30. How did you feel emotionally after your injury?

31. Do/Did you have a strong support system while recovering from your injury?
   Mark only one oval.
   - Yes
   - No
   - Other:

32. If Yes, Who?

33. If 0 is no recovery, what recovery have you made to your pre-injury status?
   Mark only one oval.
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10
   Injured
   Pre-injured status

34. Do you / Did you have fears about returning to sport?
   Mark only one oval.
   - Yes
   - No

35. Are you a motivated person for exercise?
   Mark only one oval.
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10
   Not at all
   Extremely

36. How well do you generally handle pain?
   Mark only one oval.
   - 1
   - 2
   - 3
   - 4
   - 5
   Not at all
   Very well
37. What do you think is the most important thing necessary for your successful recovery?

38. Is the “most important thing” something you have control over?
   Mark only one oval.

   1  2  3  4  5

   Not at all  ○  ○  ○  ○  ○  Very

39. How optimistic were or are you about fully recovering from your injury?
   Mark only one oval.

   1  2  3  4  5

   Not at all  ○  ○  ○  ○  ○  Very

40. Were/Are you able to workout during your recovery?
   Mark only one oval.

   ○ Yes
   ○ No

Emotions During Injury
Please rank how these emotions describe how you felt or are feeling because of the injury (10 high, 0 low)

41. Helpless
   Mark only one oval.

   1  2  3  4  5  6  7  8  9  10

   ○ ○ ○ ○ ○ ○ ○ ○ ○

42. Bored
   Mark only one oval.

   1  2  3  4  5  6  7  8  9  10

   ○ ○ ○ ○ ○ ○ ○ ○ ○
43. Angry
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]

44. Shocked
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]

45. Frightened
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]

46. In Pain
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]

47. Tense
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]

48. Depressed
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]

49. Frustrated
   *Mark only one oval.*
   
   1  2  3  4  5  6  7  8  9  10
   
   [Circle options]
50. Discouraged
   Mark only one oval.

   1  2  3  4  5  6  7  8  9  10

51. Optimistic
   Mark only one oval.

   1  2  3  4  5  6  7  8  9  10

52. Relieved
   Mark only one oval.

   1  2  3  4  5  6  7  8  9  10

53. Other
   Mark only one oval.

   1  2  3  4  5  6  7  8  9  10

54. If other what is other?

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Appendix B

*Table 1.*

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<th>Hypothesis One</th>
<th>Hypothesis Two</th>
<th>Hypothesis Three</th>
<th>Hypothesis Four</th>
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