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## ***Do High Amounts of Stress and Anxiety Lead to a Higher Injury Rate Among Student Athletes?***

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### **OBJECTIVE**

The purpose of this study was to investigate collegiate student athletes' perceptions of injuries being predisposed by high amounts of stress and/or anxiety.

### **DESIGN AND SETTING**

This was a survey research study conducted at a small DIII liberal arts college in southwest Ohio. Paper copies of the surveys and cover letters were distributed at the beginning of team practices.

### **PARTICIPANTS**

A convenience sample was taken of freshmen through fifth year senior collegiate student athletes between ages eighteen and twenty-two. The target population was N=312 collegiate student athletes. Total return rate for participants in this study was 84.6% (n=264). The independent variables in this study were the athletic teams that were freshmen through seniors between ages 18 and 22. The dependent variables consisted of questions that fell under the five categories: stress, anxiety, coping mechanisms, injury rate, and demographics. Of the participants, men's sports were 12.1% (n=32) soccer, 31.4% (n=83) football, 5.3% (n=14) cross country, 5.7% (n=15) basketball, 4.9% (n=13) wrestling, and 4.5% (n=12) swimming. Female sport participants were 11.4% (n=30) soccer, 4.2% (n=11) volleyball, 4.5% (n=12), 4.2% (n=11) cross country, 5.7% (n=15) basketball, and 5.7% (n=15) swimming. Of the participants, 36.7% (n=97) were female collegiate student athletes and 62.9% (n=166) male collegiate student athletes. Participants grades in college were 0.7% (n=2) fifth-year seniors, 12.5% (n=33) seniors, 17.8% (n=47) juniors, 24.6% (n=65) sophomores, and 43.9% (n=116) freshman. Finally, the participants were of the ages 3.7% (n=10) 22

years old, 11.7% (n=31) 21 years old, 20.8% (n=55) 20 old, 33% (n=87) 19 years old, and 28.8% (n=76) 18 years old.

### **INTERVENTION**

Questions 1-6 were related to stress; breaking down symptoms of stress and asked about specific stressors. Questions 7-10 were related to symptoms of anxiety. Question 11-15 questioned the types of coping mechanisms and if they used them for stress or anxiety. Question 16-19 evaluated the injury rate of the athletes. Question 20-21 asked if the student athlete believed stress or anxiety predisposes injuries. Questions 22-24 asked about the participants demographics (sport, gender, year in college, and their age). Descriptive statistics (frequency counts and percentages) were used to analyze every question of the survey. Pearson's Chi Square test was used with gender as the grouping variable. The alpha level was set at *0.05 a priori*. This study was approved by the IRB and SPSS 24.0 was used to analyze the data. A panel of experts reviewed the face validity. The Table of Specification (ToS) established content validity of this project. The sport of participants and class levels were not evaluated because of the varying sample sizes.

### **MAIN OUTCOME MEASUREMENT**

The Likert Scale was used for the answers in the survey in different sections. Questions 1 and 2 along with 7 through 10, consisted of a 4-point Likert Scale. They were grouped as '7-6<sup>4</sup> Days a Week,' '5-4<sup>3</sup> Days a Week,' '3-2<sup>2</sup> Days a Week,' and '1-0<sup>1</sup> Days a Week.' Questions 3 through 6, along with 11 through 15, were on a 5 point Likert Scale. The options for answers were 'Extremely<sup>5</sup>,' 'Very<sup>4</sup>,' 'Moderately<sup>3</sup>,' 'Somewhat<sup>2</sup>,' and 'Not<sup>1</sup>.' There was a 2 point Likert Scale for questions 16 through 19, where the options for the answers were either

'Yes<sup>2</sup>' or 'No<sup>1</sup>'. Then, questions 20 and 21 were on the 3 point Likert Scale; options were 'Yes<sup>3</sup>,' 'No<sup>2</sup>,' or 'Not Sure<sup>1</sup>.' Questions 22 through 25 asked the participants demographics such as sport, grade, and age.

## **RESULTS**

When asked if the student athletes were stressed from their classes 18.7% (n=49) of them were 'extremely' or 'very' stressed from classes. 49.3% (n=130) of participants worried 4-7 days a week, which showed a symptom of anxiety. 41.1% (n=108) participants sustained an injury which caused them to sit out for a practice or game. There was a statistically significant difference ( $\chi^2=19.831a$ ,  $df=4$ ,  $p=.001$ ) between males and females with the demands of their sport. There were 60% (n=21) female athletes who were 'Very Stressed' from the demands of the sport versus the 4% (n=7) males who were 'Very Stressed' from demands of their sport. There was a statistically significant difference ( $\chi^2=11.473a$ ,  $df=4$ ,  $p=.022$ ) between males and females with the amount of stress from the competition of their sport. The male student athletes stated 75.8% (n=75) of them were 'Not Stressed' from competition. The males also had more athletes that were either 57.7% (n=45) 'Somewhat Stressed' or 55.6% (n=30) 'Moderately Stressed' from competition of their sport. There was a statistically significant difference in males and females when asked how many days a week they worried about something ( $\chi^2=18.837$ ,  $df=3$ ,  $p=0.00$ ). Where 82.6% (n=38) of males said they only worried '1-0 Day a Week', females worried the more with 34% (n=33) claiming they worried '7-6 Days a Week'. The final question that proved to be statistically significant ( $\chi^2=38.967a$ ,  $df=3$ ,  $p=0.00$ ) was between males and females when asked how

many days per week they felt emotional. 77.8% (n=7) female student athletes felt emotional '7-6 Days a Week'; 6.1% (n=10) of males were emotional between '5-4 Days a Week' or '7-6 Days a Week'. The descriptive statistics showed 18.5% (n=20) student athletes who *were* injured that caused them to sit out one practice or game were either 'Very Stressed' or 'Extremely Stressed' from their classes. Of those who *did* sustain an injury 31.5% (n=34) were 'Not Stressed', 30.6% (n=33) were 'Somewhat Stressed', 21.3% (n=23) were 'Very Stressed', and 3.7% (n=4) were 'Extremely Stressed' from their competition. Only 20.8% (n=11) athletes who *did* sustain more than one injury had difficulty concentrating '4-7 Days a Week'. Compared to 22.9% (n=48) athletes who *did not* sustain more than one injury and had difficulty concentrating '4-7 Days a Week'.

## **CONCLUSION**

This study found that both academic classes and sport competition in were equally likely to cause stress. The same proportion of student athletes who were 'Extremely' or 'Very' stressed from their classes or competition of their sport sustained an injury which caused them to sit out of one practice or game. Almost half of the student athletes who stated they sustained an injury which caused them to sit out for more than one practice or game worried about something 4-7 days a week. Females showed higher anxiety symptoms of feeling emotional and worrying about something. One out of five students sustain an injury while under high amounts of stress. Therefore, ATs must intervene and be able to assist the student athletes with the coping mechanisms needed to help improve the overall mental health of the student athlete.

**KEY WORDS:** *Stress, Anxiety, Injury, Predisposing*