



Emily Wilson, Marcus M. Lawrence, Merrill D. Funk

Department of Kinesiology and Outdoor Recreation, Southern Utah University, Cedar City, UT

ABSTRACT

A high prevalence of collegiate athletes experience some form of mental health issues during their athletic career. Research has mainly focused on collegiate football players or has utilized participants from a variety of sports. **PURPOSE:** The purpose of this study was to examine the prevalence and risk factors associated with mental health issues, specifically anxiety and depression, in division one collegiate track and field athletes. **METHODS:** Sixty-Eight (n=43 female, n=25 male) Division I National Collegiate Athletic Association (NCAA) track and field athletes who were on the active roster and/or competing during the 2021-2022 season completed the study (average age: 20.8 years). All participants completed a demographic questionnaire and the NRS-11 (a self-reported measure to evaluate pain in the past week) to assess factors that may be associated with symptoms of depression. Symptoms of depression were measured using the Center for Epidemiological Studies of Depression Scale (CES-D). Anxiety was measured with the State-Trait Anxiety Inventory (STAI). The number and proportion of athletes reporting symptoms of depression were calculated with differences between gender, race, collegiate class, history of injury, diagnosed depression, and pain levels analyzed using Chi-square tests. Average scores of state- and trait-anxiety were compared between gender, race, collegiate class, history of injury, diagnosed depression, and pain levels using independent t-tests. Spearman correlations were used to explain the relationship between symptoms of depression and state- and trait-anxiety and pain. Statistical significance was set at an alpha of <0.05. **RESULTS:** Ninety-five percent of participants reported experiencing symptoms of depression. Symptoms of depression were strongly correlated with state-anxiety, trait-anxiety, and pain (P<0.01). State- and trait-anxiety were highly correlated with each other (P<0.01) as well as with pain (P<0.01, P<0.05, respectively). Due to the high rates of depression symptoms, there were no significant differences between risk factors and prevalence of depressive symptoms. **CONCLUSION:** Our findings provide evidence for an urgent need for further investigation into the mental health of track and field athletes. Further studies on why track and field athletes are at increased risk of experiencing symptoms of depression are also warranted.

INTRODUCTION

- Collegiate student athletes are more likely to experience symptoms of depression compared to the general college student population (1).
- Risk factors have been identified that may increase an athlete's likelihood of experiencing depression symptoms such as their sex, academic class, scholarship status, season status, athletic identity, and injury (1).
- One study evaluated the prevalence of depressive symptoms in twelve different sports and found that track and field athletes reported the highest rate of depressive symptoms compared to athletes who participated in other sports (2).
- By understanding the prevalence and risk factors in this population, it provides the opportunity to implement resources and interventions for depression, anxiety, and other mental health disorders.

PURPOSE

The purpose of this study was to examine the prevalence and risk factors associated with mental health issues, specifically anxiety and depression, in division one collegiate track and field athletes.

RESULTS

Table 1. Symptoms of Depression by Characteristics of Student Athletes (n=68)

	Enrolled Student Athletes		Self-Reported Symptoms of Depression*		P†
	n	%	n	%	
All	68		65	95.6	
Gender					
Male	25	36.8	25	100.0	0.116
Female	43	63.2	39	90.7	
Race					
White	54	79.4	51	94.4	0.822
Other	14	20.6	13	92.9	
Collegiate Class					
Freshman	14	20.6	14	100.0	0.250
Sophomore	17	25.0	17	100.0	
Junior	20	29.4	17	85.0	
Senior	12	17.6	11	91.7	
Graduate	5	7.4	5	100.0	
History of Injury					
Yes	38	55.9	36	94.7	0.780
No	29	42.6	27	93.1	
History of clinically diagnosed depression					
Yes	14	20.6	12	85.7	0.134
No	54	79.4	52	96.3	
Pain					
Yes	64	94.1	60	93.8	0.606
No	4	5.9	4	100.0	

*Symptoms of depression were measured by the Center for Epidemiological Studies Depression Scale (CESD), with a score of 16 or higher indicating symptoms of depression.
†P values were based on chi-square tests.

Table 2. Average Score of State-anxiety and Trait-anxiety by Characteristics of Student Athletes (n=68)

	Score of State-anxiety* Mean (SD)	Score of Trait-anxiety* Mean (SD)
Overall	44.01 (12.42)	44.88 (11.84)
Gender		
Male	43.04 (12.23)	40.96 (10.55)
Female	44.58 (12.64)	47.16 (12.06)
P‡	0.625	0.036
Race		
White	45.06 (11.98)	44.96 (11.75)
Non-White	40.00 (13.73)	44.57 (12.62)
P‡	0.177	0.913
Collegiate Class		
Freshman	49.86 (10.52)	47.14 (13.33)
Other	42.5 (12.51)	44.3 (11.48)
P‡	0.047	0.427
History of Injury		
Yes	44.18 (12.43)	44.47 (11.57)
No	44.28 (12.57)	45.79 (12.37)
P‡	0.976	0.655
Reported pain		
Yes	44.53 (12.46)	45.28 (11.82)
No	35.75 (9.46)	38.5 (11.62)
P‡	0.172	0.269
Symptoms of Depression‡		
Yes	44.82 (12.15)	45.45 (11.71)
No	31.0 (10.30)	35.75 (11.50)
P‡	0.030	0.112

*State-anxiety and trait-anxiety were measured by the State-Trait Anxiety Inventory.
†P values were based on 2-sample independent t tests.
‡Symptoms of depression were measured by the Center for Epidemiological Studies Depression Scale (CESD), with a score of 16 or higher indicating symptoms of depression.

Table 3 Spearman Correlation of Symptoms of Depression, Anxiety, and Pain (n=68)

	Depressive symptoms	State-anxiety	Trait-anxiety	Pain
Symptoms of depression score.‡	1.00	.681** (P<0.001)	.654** (P<0.001)	.339** (P=0.005)
State-anxiety†	-	1.00	.795** (P<0.001)	.320** (P=0.008)
Trait-anxiety†	-	-	1.00	.277* (P=0.022)
Pain‡	-	-	-	1.00

‡Symptoms of depression were measured by the Center for Epidemiological Studies Depression Scale (CESD).
†State-anxiety and trait-anxiety were measured by the State-Trait Anxiety Inventory.
‡Pain was measured by an 11-point numeric rating scale (NRS-11), with 0 indicating "no pain" and 10 indicating "the worst pain the respondent had ever felt."
**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

METHODS

Set Up: Surveys were distributed by reaching out to eligible student athletes via social media and email. The student athletes' demographic characteristics, sports experience, self-reported pain, and symptoms of depression and anxiety were collected.

Survey Protocol: The demographic information included questions regarding participants age, gender, race, collegiate class, history of injury (any athletic injury sustained in the past 12 months), history of any clinically diagnosed depression, and a self-reported measure to evaluate pain in the past week using the NRS-11. The NRS-11 is an 11-point numeric rating scale that evaluates pain with 0 indicating "no pain" and 10 indicating "the worst pain ever felt". Symptoms of depression were evaluated using the Center for Epidemiological Studies Depression Scale (CESD).³ This scale is a 20 item self-report scale that asks how often individuals have experienced 20 different symptoms during the past week and responses are rated on a 4-point scale with 0 indicating "rarely or none of the time" and 3 indicating "most or all of the time". A score of 16 or higher indicated the presence of depressive symptoms. Anxiety was evaluated using the State-Trait Anxiety Inventory (STAI) which is used to measure anxiety symptoms.⁴ This is a self-reported 40 item (20 items for state anxiety, 20 items for trait anxiety) scale with total scores ranging from 20-80, with each item scoring from 1 to 4. An increased score is indicative of greater levels of anxiety.

Statistical Analysis: The number and proportion of athletes reporting symptoms of depression were calculated with differences between gender, race, collegiate class, history of injury, diagnosed depression, and pain levels analyzed using Chi-square tests. Average scores of state- and trait-anxiety were compared between gender, race, collegiate class, history of injury, diagnosed depression, and pain levels using independent t-tests. Spearman correlations were used to explain the relationship between symptoms of depression and state- and trait-anxiety and pain. Data are reported as Mean +/- (Standard Deviation) and the level of statistical significance was set at alpha of 0.05.

SUMMARY

- Ninety-five percent of participants reported a score of 16 or higher out of a possible total score of 60 on the CESD scale which indicates that almost the entire sample exhibited symptoms of depression (Table 1). Due to the high rates of depression symptoms, there were no significant differences between risk factors and prevalence of depressive symptoms.
- Although state-anxiety and trait-anxiety were strongly correlated with depressive symptoms, there were no significant demographics associated with the prevalence of self-reported depressive or anxiety symptoms in this study, therefore, more research needs to be done to determine why track and field collegiate athletes in this study reported an increased prevalence of depressive symptoms compared to other studies.
- Findings from this study provide evidence for an urgent need for further investigation into the mental health of track and field athletes.

REFERENCES

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