

THE EFFECTS OF ANXIETY AND DEPRESSION ON COLLEGIATE ATHLETES

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THESIS ABSTRACT

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Many collegiate student-athletes experience high levels of stress leading to anxiety and depression. Many of these athletes are at significant risk for developing psychological and physical long-term effects. This paper evaluated statistical information and comparative studies that indicated the levels of anxiety, stress, and depression that differ between the general population, college students, and collegiate student-athletes within the United States. This research revealed that collegiate student-athletes are often predisposed to a more extreme set of pressures than the general student population. A review of the extant literature confirmed that the percentage of collegiate student-athletes that suffer from anxiety and depression is not higher than the general population or non-athlete college students. However, these same studies revealed that collegiate student-athletes do suffer from more serious mental health issues including bulimia, depression, OCD, panic attacks, insomnia, and other sleep disorders that are found in the general college population. The demands and stressors placed on collegiate student-athletes predisposes them to more severe anxiety and a unique set of stressors than the rest of the general population. More rigorous research that links college sports programs to poor mental health is critical for understanding the mental health issues of today's collegiate student-athlete.

Exercise is a word associated with health. The list of physiological diseases that are supposed to be warded off with regular exercise continues to grow. Doctors routinely ask their patients about the amount of exercise they get and are quick to point out the amount of evidence linking regular physical activity to not only physical well being but also mental well being. As a result, children are taught at a young age, exercise is good, exercise is healthy. They are placed in sports at an early stage in life and they develop passion for activities that are meant to be healthy. But what happens when the same activity that was meant to be so physically and mentally healthy becomes an inescapable source of pressure and stress? What happens when the same activity that was supposed to be a fun way to stay fit is occurring within a stressful context full of competitive pressure that makes a person sick?

Some student athletes today, especially those in intercollegiate athletic programs, experience high levels of stress leading to anxiety and depression. As a result, they are at risk for developing psychological and physical long-term effects. Research that may link college sports programs to poor mental health is critical for understanding the mental health issues of today's collegiate student-athlete. Comparing rates of anxiety and depression between the general population of college students and college athletes alone would be misleadingly simple. It is not fair to assess mental health among college athletes by measuring them against a group of people not exposed to the same sources of stress they face. College athletes may be predisposed to a more extreme set of pressures than the general student population. Although the general student population and general public experience stress, it is plausible that student athletes experience a greater degree of

stress from the unique demands placed on them. This increased stress can result in distinct experiences of anxiety and depression.

Statistical information and comparative studies indicate that levels of anxiety, stress, and depression differ between the general population, college students, and collegiate student-athletes within the United States. The international population and universities outside of the U.S. were not included in this study to avoid cultural bias and other skewed data. Research studies reveal that specific environmental and social components can be isolated that may expose the unique aspects of anxiety and depression, especially concerning college student-athletes. Performance-based demands can lead to overwhelming anxiety and depression for intercollegiate student-athletics. It is not a question of whether student athletes experience more or less anxiety and depression than the rest of college students. College athletes are predisposed to a distinct experience of anxiety and depression, a topic which requires more study and attention. The conflicting emotions of being placed on a pedestal for sport performance while simultaneously experiencing the rigors of high academic standards might be quite unique to athletes. This paper will identify the potential prevention and treatment measures research solutions for these same intercollegiate student-athletes.

Definitions for Anxiety, Depression, and Stress

For the purpose of this paper, it is crucial to medically define anxiety and depression. Anxiety can be defined as “an unpleasant mood of tension and apprehension related to fear but not focused on an object of immediate danger. Anxiety is generally accompanied by autonomic symptoms including tachycardia (increased heart rate), perspiration, dry mouth, and sometimes hyperventilation (Andreoli & Cecil, 2015, p.

692). The autonomic symptoms may create a vicious circle in which perception of the autonomic changes, particularly palpitations (tachycardia) and lightheadedness (hyperventilation), are shown to increase” (Andreoli & Cecil, 2015, p. 692). Often, the cause of primary anxiety disorders (those that occur in the absence of identifiable physical or environmental cause) is difficult to diagnose. Clinically, anxiety can further be defined as leading to phobias. For example, this can vary from simple phobic fears of particular objects to fears of either being alone or being in public places.

Panic attacks can be defined as “spontaneous sudden episodes that are marked by fear, apprehension, and feelings of impending doom without underlying cause and a generalized constant feeling of fear and apprehension” (Andreoli & Cecil, 2015, p. 693).

Almost everyone experiences a certain amount of apprehension and feelings of nervousness when they are faced with a stressful situation. Often, the response is reasonable and adaptive, after which an individual can reasonably be expected to return to a normal physiologic state. However, some individuals will present symptoms of anxiety as seen in fears that may be prolonged, abnormal, irrational, and greatly impair normal daily functions. This response, commonly referred to as anxiety disorder, is seen in approximately 24.9% of the U.S. population over their lifetime (DiPiro, 1997, p. 1443). Whereas situational anxiety is a normal response to stressful situations, such as financial difficulties or relationship issues, they are often temporary and do not necessarily lead to anxiety disorders. More severe and longer-term examples of stressful situations can directly lead to anxiety disorders (DiPiro, 1997, p. 1443).

Depression can be defined as “a feeling of sadness and misery, usually accompanied by lowered self-esteem and ranging from feelings of inadequacy to

incompetence to a full-blown delusions. Individuals presenting as depressed suffer from physical symptoms as well as depression of mood...There may be loss of appetite, weight loss, or insomnia...severely depressed patients are slow in their responses and appear apathetic and indifferent. They frequently complain of aches, pains, and other somatic symptoms that may be either psychophysiological or delusional” (Andreoli & Cecil, 2015, p. 691).

Health professionals may be difficult to correctly diagnose depression as distinguished from physical illness. Depression can also be defined as mood disorders that can be further classified as either bipolar disorder and depressive disorders. A defining feature of these disorders is seen in a disturbance of mood of the individual. A mood disorder can occur when an individual experiences pervasive and sustained emotions that can severely alter that individual’s perception of the world. Whatever form of depression with which an individual is diagnosed, there are usually certain associated symptoms that impair the person’s ability to function for major durations of time. Additionally, individuals that are diagnosed with depression frequently report significantly poor social functioning and occasionally a serious desire to commit suicide (DiPiro, 1997, p. 1395).

According to Dr. William C. Shiel, as applied to a medical or biological context, “stress is a physical, mental, or emotional factor that causes bodily or mental tension. According to Shiel and Conrad (2008, p. 817), stresses can be external (from the environment, psychological, or social situations) or internal (illness, or from a medical procedure).” Stress can also trigger a “fight or flight” response that is a reaction of both

the endocrinology and neurologic systems. Stress very often leads to and contributes heavily to the psychological conditions of anxiety and depression.

Stress can also be defined by how the human body and brain respond to various demands. For example, performance at work or school or other significant social or life events can produce a stressful situation. The source of long-term stress is often constant, and therefore, the body may not receive clear signals to return to normal functioning. Physiological responses can affect the cardiovascular system, immune and digestive systems, and ability to establish normal healthy sleep patterns. Other symptoms of stress are often seen in irritability, anger, headaches, and other mood disturbances. Chronic stress may result in high blood pressure, heart disease, and other significant physical and mental disorders (National Institute of Mental Health, 2020).

In order to gain a wide perspective, it is significant to understand that anxiety and depression affect a vast majority of the world population. In 2012, over forty million Americans were diagnosed with anxiety disorders (Ratanasiripong, Sverduk, Prince & Hayashino., 2012, p.743). According to the World Health Organization, depression was the third most global consequential disease in 2018, and was predicted to be the second most prevalent in the current year of 2020 (Kim, 2018, p. 263).

Many forms of anxiety disorders are experienced by the general population. These anxiety disorders often interfere with personal relationships, job performance, and even day to day basic functions such as driving a car, socializing in public, and other routine activities. A very common anxiety disorder is generalized anxiety disorder that can be defined as an excessive amount of worry or anxiety that occurs over an extended period of time (at least six months). Generalized anxiety symptoms are numerous and

include; difficulty controlling a feeling of worry, irritability, feelings of restlessness or edginess, difficulty sleeping, fatigue, and muscle tension. (National Institute of Mental Health, 2020). Many other common anxiety disorders include panic disorder, phobia-related disorders, social anxiety disorders, separation anxiety disorder, and agoraphobia that involves a combined fear of situations such as being in open or enclosed spaces, using public transportation, etc... (National Institute of Mental Health, 2020).

There is consensus among many researchers and psychologists that a combination of genetic and environmental general risk factors contribute to most types of anxiety disorders in the general population. These include; an exposure to stressful and negative events that occurred in early childhood, personality traits such as behavioral inhibition or shyness in early childhood or adolescent years, or a history of mental illness in biological relatives (National Institute of Mental Health, 2020). The diagnostic interview data from the “National Comorbidity Study Replication (NCS-R)” reveals that in 2017, 19.1% of adults 18 years and older in the United States had an anxiety disorder within the past year. This study also found that 31.1% of the entire adult population of America will have experienced some form of anxiety disorder at some point in their lifetime. This study surveyed 9,282 English speaking, non-institutionalized civilian respondents (Harvard Medical School, 2017).

In a “National Comorbidity Survey Adolescent Supplement (NCSA)” by the Harvard Medical School, it was found that of the 19.1% of the U.S. general population that reported to have an anxiety disorder, 22.8% described their disorder as serious, while 43.5% reported it as moderate and 33.7% reported it to be only mild. Further statistics documented an estimated 31.9% of adolescents had an anxiety disorder, and among that

group, 8.3% reported that their anxiety disorder impaired them severely. The total adolescent population surveyed were a large sample of 9,244 males and females that were randomly selected.

There are a number of other studies that focus specifically on the general population of U.S. college and university students. Beiter (2015) examined the collegiate general population but did not target specific collegiate student-athletes. The research revealed that the most significant causes of stress were both self-induced and external pressure to produce high academic performances, similar pressure to succeed after school, and the pressure to develop meaningful post-graduation plans. As compared to the overall student population of both undergraduate and graduate students, the students that experienced the most stress and anxiety were upperclass undergraduate students, transfer students, and students that lived off-campus (Beiter, 2015, p. 92).

The Beiter study, based on the percentage of college students that identified themselves as suffering from either moderate to extreme stress levels, revealed a number of sources of stress and anxiety. These students ranked these sources from greatest to least as; academic performance, pressure to academically succeed, their post-graduate plans, their personal financial status, their quality of sleep, relationships with their friends, relationships with their family, their overall health, self-perception of body image, and individual self-esteem (Beiter, et al., 2015, p. 93-94).

The pursuit of academic goals is the most salient aspect of college life. Students that do not possess a healthy attitude regarding academic success are often susceptible to increased incidences of high levels of stress and anxiety. The cumulative effect of taking tests, the pressure of meeting academic deadlines, time management issues, and the

overwhelming volume of collegiate assignments and readings is directly correlated to increased stress for college students. While academic responsibilities can be perceived in a positive light, if interpreted with a negative viewpoint, can lead directly to the increased anxiety and stress that undermines the state of college student's mental health outcomes. Another aspect of this study revealed that females reported significantly greater levels of stress and anxiety due to self-induced academic pressure than males. Females also ranked body image much higher than the male study group as a major source of stress. The quality of sleep ranked equally among both males and females (Beiter, 2015, p. 94-95).

The Beiter study also revealed that upperclassmen were the most stressed, anxious, and depressed when compared with freshman and sophomores. While most schools have programs to help freshman settle into college life, as well as to help seniors prepare for jobs or graduate school, the results of this study indicated that university provided counseling services may be necessary to prepare juniors for what they will need to accomplish in their senior year and hopefully reduce their stress, anxiety, and depression.

When living status was compared, students who lived off-campus experienced higher levels of stress than students that lived on-campus. Students that lived on campus in dorms or college style apartments felt a stronger connection to school based activities. Both male and female transfer students reported the highest levels of stress and anxiety among the study group. Transfer students reported that they had more trouble acclimating to a new college environment that felt at times like a "second freshman year." Additionally, upperclassmen reported the highest overall levels of anxiety, stress,

and depression when compared to the sample of underclassmen. This may be due to the increased pressure they felt about their prospects of entering the work force immediately after graduation (Beiter, 2015, p. 94-95).

The Beiter study concluded that due to the growing causes of mental health issues among college students, it is of paramount importance that colleges and universities invest in resources and evaluations that adequately identifies the state of the mental health of their student population. This study concluded that these colleges and universities have a growing responsibility to design and implement specific intervention programs that target this increasingly vulnerable population. These programs can specifically be employed to combat mental health problems including the potential for the increase in risky behaviors such as alcohol and drug abuse. This study also concluded that it would be extremely beneficial for colleges and universities to encourage their students to join outside organizations such as The National Alliance on Mental Illness, Active Minds, etc.. that actively promote awareness about mental health. These organizations are united in the goal of removing the social stigma often associated with mental health issues. Collegiate student-athletes often feel that seeking help for a mental issues would be perceived as a sign of weakness and would be looked down upon by their teammates. Another factor was seen to be low levels of mental health literacy (Beiter, 2015, p. 95-96).

The Beiter study further concluded that colleges and universities urgently need to implement a method to consistently monitor the mental health of all their students regardless of whether or not they were athletes. Considering the high levels of anxiety, stress, and depression cited in his study, colleges and universities might begin by

administering frequent surveys and other assessment methods to evaluate the psychological health of their student population on a regular basis. The protocol of assessments should also serve to inform the counseling services of each college and university on a national level. The accumulation and integration of student mental health information would prove to be very beneficial in reducing some of the causes of anxiety and stress that further leads to depression and negative outcomes for today's college students (Beiter, 2015, p. 96)

In a 2016 study that surveyed a large segment of the American population, the American College Health Association-National College Health Assessment (ACHA-NCHA) researched three population groups; the first being the general student population, the second was intramural student athletes, and the third was collegiate student-athletes. A total of eight-hundred and fifty-four students were surveyed (ACHA-NCHA, 2017, p.8). Those surveyed were broken down further to include forty-eight varsity college athletes, two-hundred and fifty-three intramural athletes and the remaining general college population consisted of five-hundred and fifty-three students (ACHA-NCHA, 2017, p.8). Of the eight-hundred and fifty-four student surveyed, the demographics can be broken down to include forty-eight varsity athletes (5.6%) and two-hundred and fifty-three intramural athletes (29.6% (ACHA-NCHA, 2017, p. 8). The forty-eight varsity athletes contained 52.1% females and 47.9% were males (ACHA-NCHA, 2017, p. 8). The intramural athletes contained 32.4% females and 67.6% males (ACHA-NCHA, 2017, p. 8).

The following Table 1. shows the results of the ACHA-NCHA survey. This survey listed fifteen different diagnosis that ranged from mild to severe mental health

issues. These fifteen diagnosis included; anorexia, anxiety, ADHD, bipolar disorder, bulimia, depression, insomnia, “other” sleep disorder, OCD, panic attacks, phobia, schizophrenia, substance abuse, addiction, and “other” mental health issues. Students were encouraged to list as many issues that they felt applied to their lives in and out of the college environment. The following chart compared the three subject groups (ACHA-NCHA, 2017, p. 8):

Table 1. Participants Reporting Mental Health Problems in 2016 Utilizing ACHA-NCHA Test Design

	General College Student Population	College Student Athletes	Intramural Athletes
Anorexia	1.3%	4.2%	
1.2%			
Anxiety	16.1%	10.4%	
11.9%			
ADHD	5.1%	12.5%	
7.1%			
Bipolar Disorder	.9%	4.2%	
2.4%			
Bulimia	1.8%	6.3%	
2.0%			
Depression	12.7%	12.5%	
8.7%			
Insomnia	4.2%	4.2%	
3.2%			
Other Sleep Disorder	1.4%	6.3%	
4.3%			
OCD	2.4%	6.3%	
3.6%			
Panic Attacks	7.8%	6.3%	
4.1%			
Phobia	1.1	4.2%	
1.6%			
Schizophrenia	.0%	4.2%	
1.6%			

Substance Abuse	.2%	4.2%
2.0%		
Addiction	.2%	4.2%
2.0%		
Other Mental Health Addiction	3.4%	4.2%
2.0%		

(ACHA-NCHA, 2017, p. 8).

The ACHA-NCHA student survey revealed the following findings: The three most prevalent mental health issues cited by the general collegiate population were anxiety at 16.1%, depression at 12.5%, and panic attacks at 7.8% (ACHA-NCHA, 2017, p. 8). The three most prevalent mental health issues cited by college athletes were ADHD at 12.5%, anxiety at 10.4%, and depression at 12.5% (ACHA-NCHA, 2017, p. 8). The three most prevalent mental health issues cited by intramural college athletes was anxiety at 11.9%, depression at 8.7% and ADHD at 7.1% (ACHA-NCHA, 2017, p. 8). While anxiety was found to be higher for general college students than for collegiate student-athletes, ADHD was found in only 5.1% of the general college population, while over twice as many collegiate student-athletes (12.5%) were identified to suffer from ADHD. This may be because even at a young age, children with ADHD are drawn to sporting activities due to the known positive reinforcing and attentional activating effects of physical activity on children. It is also important to point out that out of the fifteen surveyed mental health issues, collegiate student-athletes reported a higher incidence in eleven categories than the general college student. Collegiate student-athletes also listed

a higher incidence of ADHD and bulimia than both intramural athletes and the general college population.

The results of the ACHA-NCHA study provide information about a wide range of health issues, many related and often comorbid to each other. This study also confirms a long standing concern that there is a meaningful increase in mental health issues found among the full population of college students, both athletes and the non-athlete. Also, a higher percentage of collegiate student-athletes reported mental disorders in fourteen of the fifteen categories as compared to intramural athletes. This suggests that intramural athletics may be a source of relaxation and diversion from the anxiety and stressors imposed by the demands of college academics. Most importantly, although anxiety listed lower for the general population than for both the varsity and intramural athlete, a wide range of potentially more serious mental health issues were found to be more prevalent in collegiate student-athletes.

Edwards (2018) researched mental health issues among collegiate student-athlete populations. In addition to researching anxiety and other mental health issues, he identified and reported various forms of stress that were reported by the same three student groups studied in the previously mentioned ACHA-NCHA study. The stressors documented by Edwards included; academic pressure, family issues, social relationships, personal appearance, personal health issues, finances, and sleep difficulties. The most common stressor found among all three study groups was academic stress. Finances were found to be a more prominent stressor for general college students, intramural athletes, and Division I athletes, since many athletes at the Division I level have scholarships that

many at the Division II and Division III levels do not have, thus lessening or eliminating the stress of paying for college (Edwards, 2018).

Edwards found that the biggest mental health issue that was reported by collegiate student-athletes was depression. Edwards further concluded that his study shared similar trends to the national data that measured mental health trends for the collegiate student-athlete population (Edwards, 2018, p. 14). Edwards also acknowledged an area that has a profound influence of the psychological well-being of the collegiate student-athlete, their response to serious injuries.

Edwards concluded that collegiate student-athletes often draw a considerable part of their self-identity from their personal athletic accomplishments, a serious injury often results in a virtual catastrophic impact on their mental state and subsequent self-esteem. The severity of a sports related injury often triggers a wide range of psychological responses from collegiate student-athletes. Edwards found that some collegiate student-athletes presented a more transient short-term psychological response. Other collegiate student-athletes presented a more long-term and significant psychological response (Edwards, 2018, p. 15)

In order to address the impact of anxiety on collegiate student-athletes, it is helpful to examine the causes of anxiety in other high stress environments such as the corporate workplace. Cheng and McCarthy (2018) concluded that more than ever in today's corporate workplace, the experience of anxiety is prevalent and results in significant consequences for employees and their organizations. Cheng and McCarthy have developed a multiprocess model of workplace anxiety called the theory of workplace anxiety (TWA) (Cheng & McCarthy, 2018, p. 539). Drawing on past theories

of anxiety and cognitive-motivational processing, they have attempted to define the debilitating and facilitative nature of dispositional anxiety (defined as one's natural mental and emotional state) and situational anxiety (defined as relating to or dependent on a set of circumstances). In their research, Cheng and McCarthy argue that anxiety isn't always negative as seen in occasional strategic actions that can avoid harm. They cited an example in which corporate employees that demonstrated high anxiety levels were also found to respond effectively when under pressure to complete work tasks to meet deadlines. Cheng and McCarthy provided examples where through corresponding empirical evidence, though very limited, there is a positive relationship between anxiety and performance (Cheng & McCarthy, 2018, p. 540). In essence, anxiety in the corporate workplace produces both positive and negative outcomes. Cheng and McCarthy have developed a model that broadly defines workplace anxiety and further refines it by distinguishing dispositional workplace anxiety that manifests as individual differences in feelings of nervousness, uneasiness, and tension about job performance while situational workplace anxiety is a transient emotional state reflecting nervousness, uneasiness, and tension about specific job performance episodes" (Cheng & McCarthy, 2018, p. 539). Cheng and McCarthy go on to distinguish workplace anxiety as different from general anxiety that commonly refers to an individual's general experience of their anxiety. They have found that workplace anxiety is very situation-specific as it relates to an individual's job. Specifically, dispositional workplace anxiety is similar to other situation-specific anxieties including test anxiety and competitive sports anxiety.

The Cheng and McCarthy study revealed that dispositional workplace anxiety often has a debilitating effect on individual workers since it qualifies as a chronic experience due to its long term nature (work over an extended period of years). Since workplace anxiety is long-term, it has a strong impact on typical job performance and has the potential to create more anxiety and resulting depression than situational anxiety. As individual workers feel more "burnout," their anxiety can lead to both physical and emotional exhaustion. This in turn can lead to less motivation to perform effectively in the workplace (Cheng & McCarthy, 2018, p. 541).

Dr. Scott Goldman, director of clinical and sports psychology at the University of Arizona, has evaluated research published by the NCAA concerning how anxiety disorders effect college athletes. Goldman found that collegiate athletic trainers believe almost 85 percent of certified athletic trainers feel that anxiety disorders are currently a major issue with collegiate student-athletes on their campus. The majority of these trainers have reported that the signs and symptoms of an anxiety disorder can include; feeling powerless, feeling apprehensive, having a sense of panic or impending danger, an increased heart rate (or even the perception of an increased heart rate), rapid breathing, sweating, and feeling tired or weak.

Goldman reported that while most people in the general public commonly experience some of these symptoms, collegiate student-athletes frequently present an anxiety disorder and often experience many of these symptoms. Additionally, some collegiate student-athletes experience one or more of these symptoms severely enough that it will significantly impact their ability to function on the court or field and in the classroom (Goldman, 2020). This may be due to the increased self-imposed demands

such as the pressure to win at all costs that many collegiate student-athletes place on themselves. Much of this pressure is the natural fruition of years of expectations for athletes to “become winners” and constantly beat the competition.

Goldman views anxiety as an emotional construct that exhibits a unique set of properties that are different from other emotions. Goldman states “For athletes and non-athletes, the thoughts and feelings that induce anxiety tend to be about the future. The future element causing anxiety for the individual is typically a perceived threat or danger” (Goldman, 2020). Goldman also believes that in addition to cognitive elements, anxiety manifests in clear physiological elements. These many include; headaches, muscular tension, increased heart rate, difficulty breathing, and even gastrointestinal issues (Goldman, 2020).

Goldman has found in his interaction with University of Arizona athletes that many were experiencing high levels of anxiety from the pressure to succeed both academically and in collegiate athletic competitions. As a result, Goldman believes that athletes develop specific anxiety issues from their unique athletic experiences when compared to non-athletes. For example, an athlete who experiences a traumatic championship game loss may perceive the experience as a personal failure resulting in increased levels of anxiety. However, as negative as this experience may be, it may not meet the criteria for an anxiety disorder. Sports psychologists are left to assess the full spectrum of the impact of traumatic losses and to teach athletes effective coping mechanisms (Goldman, 2002).

Hwang and Choi (2016) analyzed nationally representative data collected by the National Collegiate Athletic Association on student athletes from 2010. They examined

the relationships, personal characteristics, and social contexts of these collegiate student-athletes. This was a very large study that collected samples from almost twenty thousand collegiate student-athletes from all over the United States (Hwang & Choi, 2016, p. 788). The results of the study revealed that three areas of collegiate student-athletes significantly raised their stress levels. They were the social context of interacting with their classmates, their overall physical well-being, and academic pressure to succeed and match the success of other students. They conclude that stress levels were most heightened by academic demands.

Hwang and Choi also concluded that the role coaches played in creating a team culture played a major factor in determining a college student-athletes' stress and anxiety levels. The results showed that when a coach created a positive and inclusive team environment, the anxiety levels of collegiate student-athletes were diminished. Specifically, when coaches were empathetic to their athletes' goals and individual personality traits, then athletes responded with less stress and anxiety. For example, coaches that took the time to learn the individual and team goals of their athletes found that those same athletes developed a stronger comfort level with the entire coaching staff. This resulted in a more relaxed team atmosphere and a decrease in stress levels. However, when aggressive and even abusive coaching styles were experienced by collegiate student-athletes, stress levels rose significantly. Another aspect of this study found that the quality of sleep has been linked to the overall physiological well being of collegiate student-athletes (Hwang & Choi, 2016, p. 788). Collegiate student-athletes may become susceptible to inconsistent sleep patterns as a result of a demanding

schedule. Varying sporting events such as practices, games, and travel were found to impede traditional sleeping patterns (Hwang & Choi, 2016, p. 790).

Hwang and Choi also concluded that women are very susceptible than men to experiencing feelings of depression. Furthermore, athletes who play an individual sport as opposed to a team sport may be more susceptible to feelings of anxiety and depression. This may be attributed to the lack of teammates and support for a collegiate student-athlete playing an individual sport as opposed to athletes who are members of a team. Additionally, athletes who play an individual sport may be more focused on their own performance and individual statistics as opposed to members of a team. A study titled, “Team Sport Athletes May Be Less Likely To Suffer Anxiety or Depression than Individual Sport Athletes” concluded that athletes eighteen years old and younger, that participate in an individual sport are more likely to experience feelings of anxiety and depression as compared to athletes of the same age who play a team sport (Pluhar, et al., 2019, p. 494). This study is relevant because these high-school aged athletes are susceptible to the same issues created by individual and team sport participation. This particular study, that consisted of seven-hundred and fifty-six athletes showed that thirteen percent of the athletes who had played an individual sport had experienced feelings of anxiety or depression as compared to seven percent of athletes who had played a team sport that had also confirmed experiencing feelings of anxiety or depression (Pluhar, et al., 2019, p. 493).

One possible explanation for this finding, as mentioned by the study, may derive from the concepts of self-determination theory and the achievement goal theory (Pluhar, et al., 2019, p.494). Self determination theory includes aspiring to achieve the “three

psychological needs for competence, autonomy, and relatedness” (Pluhar, et al., 2019, p. 494). The achievement goal theory can be defined as the desire to perform a specific task with success as well as the component of ego, and completing the task with more success when compared to others (Pluhar, et al., 2019, p. 494). However, it may be beneficial for future research to further their specificity regarding both self-determination theory and the achievement goal theory in both individual and team sports.

Unfortunately, an athlete may experience a diminished sense of their self-worth and self-identity as a result of becoming injured. They may experience a similar perception that they have under-performed athletically (Rao & Hong, pg.136). Experiencing a season-ending sports injury is one of the most traumatic events a collegiate student-athlete may endure during their collegiate athletic career (Li, Moreland, Yang, & Peek-Asa, 2017, p. 2148). Approximately forty to fifty percent of NCAA athletes will suffer a sports injury during their collegiate athletic career (Li, et al., 2017, p. 2148). Another study identified risk factors that resulted in sports injuries collegiate athletes had suffered that included symptoms of anxiety and depression. A journal article titled, “Anxiety and Depressive Symptoms and Prospective Injury Risk in Collegiate Athletes” determined that anxiety and symptoms of depression experienced by collegiate athletes during the preseason, can enhance an athletes susceptibility to the risk of injury (Li, et al., 2017, p. 2154). One potential explanation cause of the relationship between the symptoms of anxiety and depression increasing the likelihood of injury is a concept that anxiety can cause a lack of attentiveness and concentration (Li, et al., 2017, p. 2152). Another factor included a theory that injuries interfered with the psychological

pathways that would affect the muscle tension and coordination of an athlete (Li, et al., 2017, p. 2153).

The overall performance of a collegiate student-athlete may be adversely affected due to the psychological and physiological effects resulting from anxiety and depression. In a published study titled “Challenge and threat imagery manipulates heart rate and anxiety responses to stress,” researchers at both the School of School of Sport, Exercise and Rehabilitation Sciences at the University of Birmingham and the Department of Psychology and Neuroscience at Baylor University combined to research the psychological and cardiovascular responses to the psychological stress effect on health and performance. The study focused on various techniques that used mental imagery to help facilitate the treatment of anxiety, phobias, and post-traumatic stress disorders to reduce the possible negative consequences of stressful situations. Mental imagery was described as the natural internalization of thought and feelings (Williams et al., 2017, p. 115).

The study revealed that mental imagery techniques were found to reduce anxiety and stress in individuals that participated in tasks such as training under pressure, athletic events, and other unfamiliar tasks (Williams et al., 2017, p. 116). These techniques a mind-body therapy that produced a calming effect by lowering the blood pressure and heart rates of individuals. The intensity of emotions that directly influenced higher levels of anxiety was also lessened through positive mental imagery techniques. Specifically, various techniques of mental imagery could include a self-actualized internal image of a positive performance. For example, an internal image of a game winning jump shot was shown to positively alter the heightened cardiovascular (as seen in a lowered heart rate)

and psychological responses that produced higher levels of stress for athletes (and non-athletes) (Williams et al., 2017, p. 116). This study further concluded that the use of positive imagery could also increase feelings of confidence and a positive self-image that could result in lessened anxiety (Williams et al., 2017, p. 117).

Prevention Strategies and Solutions for Anxiety and Depression for the General Population and Collegiate Student-Athletes

Depression has become a significant health issue due to the illnesses' capability of affecting an individual's mental health and socioeconomic viewpoint. It is crucial that successful prevention methods are utilized to prevent depression (Kim, 2018, p. 263). Unfortunately, depression is a recurring illness, as prevention and intervention methods should be implemented during both childhood and adolescence, in order to sufficiently prevent the illness (Kim, 2018, pg.263). Interestingly, depression which occurs during adolescence has been associated with factors such as; problematic peer relationships, parental neglect, and childhood family adversity" (Kim, 2018, p .266).

A study by the National Institute of Mental Health concluded that both genetic and environmental factors contribute to the risk of developing an anxiety disorder. "There are many types of anxiety disorders, including generalized anxiety disorder, panic disorder, and various phobia related disorders" (National Institute of Mental Health, 2020). With all of the general risks factors that can trigger a variety of anxiety disorders, it is imperative that athletes receive a complete physical health evaluation. Collegiate student-athletes experience elevated physical stress on their bodies due to strenuous physical activity. Therefore, physical evaluations can reveal conditions such as thyroid issues or heart arrhythmias substance/medications that could initiate or further aggravate

anxiety symptoms. Panic attacks may be experienced both prior or during a sporting event. “During a panic attack, people may experience, heart palpitations, an accelerated heart rate, sweating, trembling or shaking, sensations of shortness of breath, smothering, or choking, feelings of impending doom, as well as feelings of being out of control” (National Institute of Mental Health, 2020).

Potential Future Strategies for the Prevention and Treatment of Depression for College Athletes

There are various potential strategies that can be implemented and practiced to prevent and treat depression for collegiate athletes. One specific method involves increasing the overall awareness of collegiate coaches. For example, coaches can implement one on one meetings with their players to discuss how they are currently coping with the pressures of the expectations imposed on them by the coaching staff and the fanbase to have a a successful and winning program. Another effective method would be conducting team meetings with the coaching staff, the athletic director, student counseling services, and sports psychologists to discuss the importance of mental health and to assist with any past or present cases of anxiety or depression related to their own athletic performances. The concept of promoting collegiate coaches’ overall awareness and knowledge of anxiety and depression could assist in both the prevention and the management of collegiate student-athletes suffering from anxiety and depression (Hegarty, 2017, p. 2). Mental health issues and illness experienced by collegiate student-athletes can become identified as the overall awareness of mental health increases (Rao & Hong, 2016, p. 137). The increase of total awareness of mental health can assist in the

prevention and overall management of mental health issues and illnesses such as depression (Rao & Hong, 2016, p. 137).

A second method of treatment, referred to as “biofeedback” has been shown to decrease symptoms of anxiety, when combined with counseling. The method of “biofeedback” is comprised of three steps (Ratanasiripong, et al., 2012, p. 746). The first step includes measuring physiological responses such as blood pressure, heart rate, muscle tension, the temperature of the skin, activity of the brain, and the activity of sweat glands to discover specific physiological responses (Ratanasiripong, et al., 2012, p. 743). The second step is focused on learning how to regulate the responses, while the third step of biofeedback is aimed at implementing the regulation of the physiological responses during daily activity (Ratanasiripong, et al., 2012, p.743).

The article titled “Biofeedback and Counseling for Stress and Anxiety Among College Students” presented a study comprised of thirty participants (all students receiving counseling) that were placed in two separate groups; a treatment group, and a placebo control group (Ratanasiripong, et al., 2012, p. 744). The participants in the treatment group received both biofeedback and counseling sessions, while the placebo control group received only counseling services (Ratanasiripong, et al., 2012, p. 745). After four weeks of participating in the study, the the participants that received both counseling services as well as biofeedback sessions had reported a significant decrease of their symptoms of anxiety, as opposed to the placebo control group which had only participated in counseling services (Ratanasiripong, et al., 2012, p.747). This study revealed that a combination of counseling services, with the implementation of biofeedback sessions, produced results where individuals were able to decrease their

symptoms of anxiety. Biofeedback may prove to be beneficial for collegiate student-athletes who are suffering from anxiety.

Moreland (2018) conducted a study concerning U.S. colleges and universities regarding their involvement of the use of mental health services (Moreland, et al., 2018, p. 57). This review utilized a socio-ecological framework that focused on the specific context in which collegiate student-athletes study and perform. The results of this study indicated that various barriers existed that often prevented athletes from obtaining quality mental health services. Although collegiate athletes are very willing to use whatever mental health services are in place, various factors such as gender, peer norms, and perceived stigmas for athletes and coaches played a significant role in preventing the successful use of these services (Moreland, et al., 2018, p. 58).

Collegiate student-athletes make-up a unique population of young adults and the general population. While sharing many similarities with their non-athlete peers, collegiate student-athletes face the challenges of college academics while simultaneously attempting to reach a peak physical fitness level and adhere to the rigors of competing at a very competitive level with their collegiate team (Moreland, et al., 2018, p. 59). As seen earlier in the literature review of this paper, the evidence of numerous studies revealed that collegiate student-athletes are at substantial risk for sleep disorders, intense pressure to succeed on the court or field, and all of the demands felt by the general college student population. Additionally, these same collegiate student-athletes face a social stigma associated with seeking mental health treatment. This can be an overwhelming barrier for many collegiate student-athletes.

University administrators, athletic directors, athletic departments, and coaches are beginning to allocate more resources and time to focusing on the development of mental health services. These services are often not well organized because a variety of health professionals must be coordinated that include clinical social workers, psychiatrists, sports psychologists, athletic trainers, mental health nurses, and primary care physicians. The difficulty lies in the fact that these health professionals come from varied educational and training backgrounds. This presents a challenge since such highly individual support and treatment services are both stretched very thin and allocated to both individualized sport athletes and entire team rosters (Moreland, et al., 2018, p. 59).

The Moreland study addressed the role of the head coach and coaching staff in the assessment of collegiate student-athletes. A salient goal of the study was to understand a coach's attitude toward seeking and using the assistance of a sports psychologist for their players, coaching staff, and themselves. Other important health professionals that coaches can create access for their players and staff are dietitians, general therapists, and other specialized professionals such as eating disorder specialists. These specialists may be engaged to help athletes in specific sports such as wrestling, football, gymnastics, and dance an athletes weight is often monitored as it relates to their performance. The guidance all of these health professionals is paramount to building a team relationship that involves everyone and can help remove the stigma that only the players feel the stress and anxiety of competitive sports (Moreland, et al., 2018, p. 63).

The Moreland study systematically reviewed over twenty different current studies on collegiate athletes' MHSU. The study concluded that further research and resources were needed to develop a greater awareness and expansion of mental health services

dedicated to the complex needs of collegiate student-athletes. Additionally, it was concluded that collegiate student-athletes also face an ongoing challenge to transition to adulthood and must adjust to life “after competitive collegiate athletics” (Moreland, et al., 2018, p. 60). A stronger partnership between colleges and universities and the NCAA is needed to coordinate the needs and health of the over 460,000 collegiate student-athletes, college athletic departments, and the general demands of collegiate life (Moreland, et al., 2018, p. 60).

The article titled “Who is coaching the coach? - Knowledge of Depression and Attitudes Toward Continuing Education in Coaches” examines the expertise of various coaches’ knowledge and awareness of depression regarding their own athletes (Hegarty, Weight, Register-Mihalik, 2018). Additionally, the article examines coaches’ overall interest in furthering their education pertaining to knowledge and awareness of depression experienced by athletes (Hegarty et al., 2018, p.1). In order to accomplish this goal, one thousand and fifty three Division I collegiate track coaches were asked to participate in a survey (Hegarty et al., 2018, p.2). As a result, 253 three coaches responded by completing the survey (Hegarty et al., 2018, p. 2).

The results of this survey revealed that coaches had found their past athletes had experienced some form of depression (Hegarty et al., 2018, p. 5). However, the study also revealed that “depression among college athletes ranges from 16% to 23%, with particularly high findings of prevalence in track and field athletes at 34%” (Hegarty et al., 2018, p. 5). Fortunately, 77% of the coaches who had taken the survey had indicated a “strong interest” in furthering their education pertaining to the topics of injury prevention, nutrition, and sports psychology (Hegarty et al., 2018, p. 5). A potential

solution to increase coaches' awareness and knowledge of depression affecting athletes involves developing stronger communication between coaches and athletic department medical staff. Due to constraints of information sharing through the HIPAA Act, the collegiate student-athlete would need to grant his or her permission that information may be communicated between the coach to the athletic department medical staff. This could be accomplished with the implementation of a HIPAA release form. This in turn could lead to better detection of the various signs and symptoms of depression exemplified by collegiate student-athletes (Hegarty et al., 2018, p. 6).

Personal Reflection

The author of this paper was a former Division III collegiate athlete who played college basketball. During his collegiate career, the author suffered multiple injuries which led to a shortened career. As a result of various season-ending injuries, the author of this paper was granted two extra years of collegiate eligibility. However, the author was only able to use one of the two additional years of eligibility because of both prior and existing injuries. The author would like to state that both of the institutions which he had played for had training and coaching staffs that were extremely helpful and supportive throughout his entire athletic collegiate career.

The anxiety and depression that was experienced by the author was largely a result of an injury riddled collegiate athletic career. The author's anxiety manifested itself in various ways which lead to both physiological and psychological symptoms. The physiological symptoms included; increased heart rate, heart palpitations, blurred vision, induced sweating, loss of appetite, shortness of breath, dry mouth, and involuntary trembling. Additional psychological symptoms included; generalized anxiety, panic

attacks, nightmares, social anxiety, irritability, depression, as well as feelings of low self-esteem. Unfortunately, anxiety and depression had significantly impacted his sports performance. The author who had once achieved a great deal of success during the freshman year of his athletic career, saw some of his success decline after each one of his major injuries. The authors statistical measurements such as minutes per game, points per game, assists per game, and rebounds per game decreased each year from the year prior. Furthermore, the decline in the author's performance led to additional feelings of generalized anxiety and depression as the outcome of his personal aspirations were compromised.

After having participated in five years of collegiate basketball, the author is still affected by his previous injury riddled collegiate athletic career. Injuries which can greatly impact an athletic career, can also hinder an athlete's self-esteem. Athletes who dedicate their lives to playing a sport, such as college basketball, may identify themselves strictly as an "athlete," as opposed to perceiving athletics as only being a part of their overall self-identity. Therefore, feelings of depression and hopelessness may result after experiencing a sports career in which they identified themselves failing to meet theirs (and others) expectations. Athletes often suffer burnout and heightened stress as a result of the high expectations by both others and self.

Furthermore, for the athletes who achieve the milestone of being able to play a sport in college, it is often their last opportunity to play a sport in which they had participated in for a majority of their lives. When a collegiate student-athlete fails to reach his or her athletic goals, they essentially end their sports career in a negative manner. As a result, past high school and youth sports accomplishments may be

perceived as insignificant, since he or she had underperformed at their highest competitive stage.

Conclusions

The literature review examined in this paper found that the percentage of collegiate student-athletes that suffer from anxiety and depression is *not higher* than the general population or non-athlete college students. The literature review also revealed that adults in often stressful workplace environment often experience high levels of anxiety and depression similar to both college students and collegiate student-athletes. However, these same studies revealed that collegiate student-athletes *do suffer from more serious* mental health issues including bulimia, depression, OCD, panic attacks, insomnia, and other sleep disorders that are found in the general college population.

In many instances, collegiate student-athletes in particular are ashamed or embarrassed to ask for help or receive counseling when it comes to their mental health. Athletes may view their own anxiety and depression as a sign of weakness. Unfortunately there is a stigma surrounding collegiate student-athletes, that impresses upon them the concept that individuals who ask for help are essentially weak. This may lead athletes to refute the notion of reaching out for professional help or guidance pertaining to feelings of anxiety or depression. However, an increased awareness of mental health treatment for collegiate athletes could enable student-athletes to better cope with their anxiety and overall depression.

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This “multi-stress” environment needs further research to fully understand it’s impact on collegiate student-athletes. Collegiate student-athletes also represent a unique population group as defined by their age (18- approximately 22). This population group has limited life-experiences and is therefore, more vulnerable to the stressors of the collegiate academic and high-pressure athletic environment.

More research that identifies the causation of anxiety, stress, and depression in collegiate student-athletes is needed to better identify and understand the factors that define the complete world of collegiate student-athletes. Currently, the collegiate student-athlete is arguably under more stress than the non-student athlete. This stress predisposes them to more severe anxiety and a unique set of stressors than the rest of the general population. Much of the current literature is based on surveys and campus wide statistics. More thorough studies are needed to better understand the mindset and detailed lifestyle demands that are imposed on today’s collegiate student-athletes. The extant literature is also incomplete in terms of documenting how collegiate student-athletes currently access and use mental health services. An increased awareness of the state of

mental health services on college and university campuses is crucial for the continued improvement of mental health outcomes as applied to the lives of collegiate student-athletes.

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