

Mental health issues in college athletes:

A synthesis of the research literature

A Synthesis Project

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Table of Contents

Abstract.....	1
Chapter 1	
Introduction.....	2-6
Chapter 2	
Methods.....	7-9
Chapter 3	
Review of Literature.....	10-23
Chapter 4	
Discussion.....	24-29
Chapter 5	
Conclusion/Future Research.....	30-32
References.....	33-34
Appendix	
Data Analysis Coding	
Grid.....	35-44

Abstract

Mental health is a vital part of the success of student-athletes, but in a ten-year time frame, 477 athletes died from suicide (Velasco, 2017). The purpose of this synthesis was to determine which mental health issues are most prevalent among college athletes, how they handle them and what colleges and universities are doing to help.

The studies that were selected for this synthesis were found using the EBSCOHOST database. All literature had to be peer-reviewed to be considered, along with containing the key words *mental health* and *collegiate/college athlete*. There were a total of ten articles considered in the critical mass. All articles were coded into an article grid and then separated into different categories such as purpose, methods & procedures, analysis and findings.

The findings from these articles conclude that college athletes do suffer from mental health issues, with the most prevalent being depression (Wolanin et al., 2016). It was determined that there is a stigma that surrounds mental health, which leaves athletes reluctant to seek help (Sudano et al., 2017). Practices for implementing mental health screenings along with the best practices for treatment were discussed. Pre-participation screenings of each athlete for each academic year are recommended to recognize the symptoms of mental health issues early so that treatment can begin immediately (Kroshus, 2016).

Introduction

Chapter 1

In the United States there are over 1,000 National Collegiate Athletic Association (NCAA) Institutions that house over 400,000 student-athletes across 23 sports (Sudano, 2017). As the governing body of the majority of collegiate athletics the NCAA has begun to consider ways that they can help protect their athletes during their careers. As many athletes know physical exercise can have many health benefits that have been proven through a wealth of research. As of recently mental health problems have been on the rise with approximately one in five adults suffering from a mental illness, with the highest rates being seen in younger populations (NCAA, 2016). This is alarming to many adults working with younger populations and has been brought to the attention of the nation through some unfortunate circumstances.

Poor mental health has taken the lives of many NCAA athletes. Madison Holleran, for example, was a track athlete who decided to take her life by jumping off of a nine-story parking garage after texting her father that she would find a therapist on campus (Born, 2017). Following Holleran's death the National Athletic Trainer Association pushed colleges to take mental health as seriously as an athletes physical health. Among student-athletes, suicide is the third leading cause of death behind accidents and heart problems (Born, 2017). According to the National Protection of Student-Athlete Mental Health article student-athletes are more susceptible to depression and suicidal ideals than their non-athlete peers (Born, 2017). It has also been determined that there is a significant increase of student-athletes who suffer from a psychological issue that is severe enough to seek counseling. As stated in the Mental Health Best

Practices article, the best way to help athletes is to provide them access to a licensed practitioner who is familiar with athletes and an athletic environment (NCAA, 2017).

It is becoming more common for colleges and universities to employ professionals in the mental health field. This is typically done through the hiring of a sports psychologist who is a licensed practitioner both with sports performance and mental health. According to an article in USA Today College, 33% of all college students experience symptoms of depression or anxiety in their college career (Velasco, 2017). There is a stigma that surrounds mental health as a whole in the United States. People who suffer from mental health issues, especially athletes, often feel as though other people perceive them differently. Athletes never want to appear weak or injured to their coaches because it could potentially impact their playing time or the way their coach perceives their abilities. This is one of many reasons athletes often avoid seeking help for mental health issues. According to Margot Putukian, the director of athletic medicine at Princeton University, claims that non-athletes aren't under the same microscope as athletes so their stressors aren't as high (Velasco, 2017). This clearly shows that athletes are under more pressure to maintain an appearance of mental strength, therefore causing them to seek help less. Because of this, athletes are not attaining the guidance or assistance that they need from professionals in order to help their mental illnesses. It is important that colleges create changes so students and athletes are able to feel comfortable seeking help for their mental illnesses. It is important that institutions understand that there has to be a change in this belief to help those in need.

Significance of the Issue

Mental health has not been a widely discussed topic in the world and many times athletes are left out of the conversation because they are thought to be an elite group of individuals who should not show weakness or vulnerability. The reality is that athletes often suffer from mental health issues based on the everyday stressors that they endure through being both a student and an athlete. Therefore, in order to prevent suicides, depression and other mental health issues, it's important to understand what the issues are, how athletes deal with them and what colleges and universities can do to help.

Statement of the Problem

Within the United States, mental health is not a widely discussed topic, especially among college athletes, who are considered an elite group in the collegiate community. The stigma that surrounds mental health leads to it being more problematic for athletes to seek help. The fear of being seen as weak or as a lesser individual prevents treatment from occurring in those who truly need it.

Purpose of the Study

The purpose of this study is to determine which mental health issues are most prevalent among college athletes, how they handle them and what colleges and universities are doing and can do in the future to help.

Research Questions

1. What are the most prevalent mental health issues in college athletes?
2. How do athletes handle mental health issues?

3. How are mental health issues different in male and female college athletes?
4. How are mental health issues different in collegiate athletes versus non-athletes?
5. What are colleges and coaches doing to help athletes with mental health issues?

Operational Definitions

- Mental health- In this study mental health refers to a person's emotional, psychological and social well being. These can be caused by a multitude of factors including biological, life experiences and family history of mental health problems (What is mental health, 2018).
- Collegiate Student-Athlete- Refers to an athlete who is enrolled full time (12 Credit Hours) in their institutions academic course work and is a participant of a varsity sport at the Division I, II or III level.

Assumptions

- It can be assumed that all data collected for the literature was provided truthfully and as accurately as possible.
- It can also be assumed that the entire search has been exhausted on this topic of literature.

Delimitations

- All literature must discuss collegiate student-athletes and mental health.
- Delimited to colleges in the United States.
- Delimited to studies from 2000-2018.

Limitations

- There is limited research on the amount of actual studies that have been conducted on this topic.
- A large portion of the data is self-reported so accuracy of the answers can be questionable.

Chapter 2

Methods

The purpose of this chapter is to present the methods used to collect the literature surrounding mental health issues in college athletes. This chapter will discuss the methods and procedures used for data collection. All data was collected through the Drake Memorial Library Database at The College of Brockport, State University of New York.

Data Collection

For this synthesis paper all data was collected through the Drake Memorial Library Database at The College of Brockport, State University of New York. The database provided articles that were strictly peer-reviewed and scholarly. The primary database used for this research was EBSCOHOST. SPORTDiscus and PSYCHInfo were the two search engines used to collect the literature. All searches used the key words *mental health* and *collegiate/college athletes*. Other keywords such as *depression, anxiety, screening practices, women, barriers, protection, gender differences and prevalence* were used to collect the literature selected for review.

Under the EBSCOHOST database, the first search was found in SPORTDiscus search engine. The keywords *mental health and college athletes and women* produced 24 hits. From those hits one article was selected for the critical mass. The second search that took place within this search engine used the keywords *mental health, college athletes and help*. This yielded 95 hits, resulting with one article being selected for the critical

mass. Only one article was selected because others only contained the word student and did not specify if the study was done with the collegiate population. To continue the search in SPORTDiscus the word help was exchanged for *screening practices* and produced another article for the critical mass.

To further the research study the search engines of SPORTDiscus and PSYCHInfo were used in a combined search. When the terms *protection, mental health and college athletes* were searched one article was the result. This article was not included in the critical mass due to the fact that it was not peer-reviewed. When the word protection was replaced with *barriers*, 42 results were found. Out of these 42 results one article was used in the critical mass because the others did not include an appropriate amount of information.

The next step was to limit the research just to use the search engine PSYCHInfo. Under this search engine the key words *prevalence, mental health and college athletics* were searched and yielded 6 hits. One article was chosen to add to the critical mass. Within the same search engine the key words *gender differences, mental health and college athletes* were searched developing 7 hits and producing a single article to be used for the critical mass.

The articles in the final critical mass were from the following journals: The *Journal of Sports Medicine*, the *Journal of Athletic Training*, the *Journal of Women's Health & Gender-Based Medicine*, the *Journal of College Student Psychotherapy*, the *Journal of Clinical Sports Psychology*, and the *Journal of American College Health*.

Data Analysis

An article grid was created from the articles selected to extract the information necessary for the synthesis. Within this grid are the purpose, data methods, analysis and results, taken from the ten critical mass articles. Also included in this information are any limitations within the studies and recommendations for future studies. Out of the ten articles selected eight used quantitative methods, while two were qualitative.

The eight quantitative studies used many different methods to analyze the data. Three of these studies (Yang, Peek-Asa, Corlette, Cheng, Foster, & Albright, 2007 and Armstrong & Oomen-Early, 2009 and Gross, Wolanin, Press & Hong, 2017) used the Center for Epidemiological Studies Depression Scale (CES-D). This scale questions how individuals may have felt or behaved within the last week or month. One of the studies (Gross, Wolanin, Press & Hong, 2017) used the Marlowe- Crowne Social Desirability Scale Short form C (MC-C). This assessment is used to determine self-presentation of the individual in question. Two of the studies used unspecified electronic surveys to collect their data.

For the two qualitative studies, (Sudano, L. E., Collins, G., & Miles, C. M. 2017 and Gulliver, A., Griffiths, K. M., & Christensen, H. 2012), focus groups and integrated models were used to collect data. The study containing the focus groups (Gulliver, A., Griffiths, K. M., & Christensen, H. 2012) consisted of three separate groups with each interview lasting an hour. Responses from the focus group were initially collected through audio recordings and then transcribed and organized by theme. In total, there were approximately 6,500 participants across ten different studies on mental health issues.

Chapter 3

Review of Literature

The purpose for this chapter is to review the literature that was selected for this synthesis. In all, there were 10 articles selected for the critical mass of this study. The results will be reported across four different themes: (a) Prevalence of mental health issues among college athletes, (b) attitudes about mental health issues, (c) screening and services for mental health issues, (d) barriers to help for mental health issues among athletes.

Prevalence of mental health issues among collegiate athletes

The first article used was written by Wolanin, Hong, Marks, Panchoo, and Gross (2016). This study was performed over the course of three consecutive years with 465 participants. The purpose of this study was to determine the prevalence of depression symptoms in athletes from an NCAA division I university over the course of three years. Participants were selected during their annual sports medicine physical and were all undergraduate students at a Division I university. A total of 12 sports were represented and a majority of the population was Caucasian. The primary measure used to collect data in this study was the Center for Epidemiological Studies Depression Scale (CES-D). This scale looked to measure common symptoms of depression over the course of the week prior to data collection. Results indicated that 23.7% of the sample (n=110) have clinical depressive symptoms, while 6.3% of participants showed moderate to severe depressive symptoms. There were no significant differences in the symptoms based on time of year they were collected and year in school. There was a significant difference

based on the gender of participants. Female student-athletes have a much higher level of depressive symptoms than male student-athletes, but when comparing prevalence of moderate to severe depressive symptoms there was no significant difference between genders. It was determined that female track and field athletes had the highest prevalence level of depression, significantly higher than the sample as a whole, on the other hand, male lacrosse athletes had a significantly lower prevalence than the sample as a whole. This study is indicative that depressive symptoms are common in college athletes. It also suggests that female athletes may be at a higher risk of suffering from depression than male athletes. The findings from this study show that college athletes are not immune to clinically relevant depressive symptoms. The results from this study show that there is a need for increased mental health screening practices to be incorporated into sports medicine care.

The next article was written by Wishak (2001) and the purpose of this paper is to determine the association between women's' athletic activity in college/precollege years and physician-diagnosed depression after college. Participants consisted of women who were both former athletes and former non-athletes at different institutions. This study used self-reported questionnaires' that looked into the participant's health histories including any previous diagnoses and current psychological symptoms. The mean response rate for this study was 71.4%. Women in this study were followed up with 15 years after their graduation from college to determine their health status. They were again questioned on things such as their living environment, medical history, exercise activity and mental health. This study concluded that women who were athletes in college and in high school or earlier have less reported diagnosed depression in their middle to older

ages. It was found that former college athletes had more than one third less physician-diagnosed depression than non-athletes. This study concluded that athletes have an overall lower risk of depression than non-athletes and there were one third less diagnosed cases of depression in athletes than non-athletes.

Shelly Armstrong and Jody Oomen-Early (2009) wrote the next article in the critical mass. This study compared athletes versus non-athletes to see if there is a difference in social connectedness, self-esteem and depression. There were 227 participants in this study, all of whom were college students. The surveys used in this study were the Center for Epidemiologic Studies Depression Scale, the Rosenberg Self-Esteem Scale, and the Social Connectedness Scale-Revised. More than half of the participants in this study were females and the average age of the participants was twenty years old. Out of all of the participants, 104 of them were NCAA athletes playing on a Division I team.

The data was collected during regular lunch and dinner hours and was analyzed by a computer system called Statistical Package for Social Sciences (SPSS). It was found that college athletes have higher self-esteem than non-athletes. It was also determined that college athletes have significantly greater social connectedness than their non-athlete peers. When comparing males and females there were significant differences found. Females had higher levels of depression than males. As for self-esteem and self-connectedness, there were no significant differences based on gender. The overall findings were that social connectedness, gender, sleep, and self-esteem were significant in predicting depression. Athletes were found to have lower levels of depression than their non-athlete peers. This study suggests that a positive social network and team

support may be the best possible way to protect collegiate athletes from depressive symptoms. This study concluded that a greater focus on mental health of college athletes is needed. Faculty and staff on college campuses need to be aware of the symptoms, along with prevention steps and treatment methods.

The critical mass included an article by Yang, Peek-Asa, Corlette, Cheng, Foster and Albright (2007). The purpose of this study was to determine the prevalence of symptoms of depression and to examine the factors associated with depressive symptoms in collegiate athletes. Data was collected using surveys, which were conducted during the team's preseason meetings. Researchers used the Center for Epidemiological Studies Depression Scale, the State-Trait Anxiety Inventory, and the Generalized Estimating Equations. This study was conducted between September 2005 and January of 2006 at one Big Ten University. The surveys were distributed during preseason meetings and information that was collected that included demographic characteristics, sports experience, pain and symptoms of depression and anxiety. In total, there were 257 participants in this study consisting of both males and female ages 18 and older. Two-thirds of the participants were male and the majorities were Caucasian. Each sport and team was grouped together for data analysis because it was thought that athletes who belong to the same team might have common characteristics. Four percent of the participants reported already having a history of clinically diagnosed depression. The results indicated many different aspects of why depression could increase in college athletes. These included the new life stressors, decreased parental support and a strong commitment to competitive collegiate sports. Twenty one percent of the participants scored a 16 or higher on the CES-D, indicating symptoms of depression. There were no

differences found in anxiety scores. Gender and collegiate class were significant factors that were associated with depression and the highest risk for developing symptoms was seen in females in the freshman class. It is unclear why females have higher symptoms of depression than males. One reason presented in this study is that women are more willing to seek help for mental illnesses than men. It should be noted that this study looked at Division I athletes, a level that requires more athletic dedication while an athlete tries to maintain academic and social activities. The findings in this study suggest a focus on the ways to reduce psychological stressors. Focusing on screening and prevention on campus is one of the beginning steps to this process.

Attitudes about mental health issues

The next article in this synthesis of literature was written by Barnard (2016). This study looked at the attitudes around mental health issues and help seeking in college athletes and non-athletes. The participants in this study were from three schools all of different competitive NCAA Divisions. Two of the colleges are private and one is public. Participants from both the athlete and non-athlete group answered questions from three different scales. These included the Devaluation-Discrimination Scale with revisions, a social distance scale and the ATSPPHS. Both groups also completed an athletic identity scale. This study was conducted across the course of three months. Results indicated that athletes and non-athletes are becoming more similar when it comes to seeking help. This study determined that a student-athlete's identity as an athlete may "protect" them from the negative label that is put on mental illness. Student-athletes have been found to be very accepting of those who are in need of psychological assistance.

When athletes seek help it was found that consulting a sports psychologist may be viewed as task-oriented meaning to help with sports performance, where as consulting a general mental health practitioner may be seen as an athlete having more personal problems. Overall this study shows the need to support awareness of mental health issues on all college campuses. This article offers advice for future research stating that more variables need to be explored, such as gender, race and specific sports.

Screening and services for mental health issues

Kroshus (2016) did a study to determine if there were policies in place on college campuses to identify student athletes with mental health issues. The participants in this study were the supervising clinicians at NCAA membership institutions and were eligible for the study if they were a head athletic trainer or a team physician providing patient care to student-athletes. The total number of participants in this study was 365 clinicians. Of those 307 were athletic trainers, 54 were physicians and four did not offer their credentials. The participants were asked four different general questions about their institution. First, they were asked what their department policy was pertaining to identifying athletes with potential mental health issues; the second question was to determine if the pre-participation examination screening included questions regarding whether the athlete had ever been diagnosed with depression or anxiety. As part of this question, they were also asked if any part of the athletic department screened for health issues such as problematic alcohol use, prescription drug abuse or illegal drug use. Third, each participant was asked to complete a questionnaire pertaining to whether or not their institution screened athletes for six common mental health concerns. They were rated on

a score of zero to six, earning a point for every concern for which they screened. Finally they were asked for institutional characteristics, including their division of competition, the approximate number athletes at the school, how many fulltime athletic trainers or physicians that were employed by the athletic department. From this information, the ratio of athletic trainers/physicians to athletes was determined. They were also asked if their athletic department employed a clinical psychologist.

In this study, a majority (53.4%) of participants came from Division I Institutions. It was determined that the sports medicine department at the college typically employed six full-time athletic trainers and one full-time physician. Across the sample size there were approximately 100 student-athletes per athletic trainer and about 376 student-athletes per physician. Less than half of the participants in this study had a written plan for identifying student-athletes with mental health concerns. Thirty one and a half percent of institutions did not screen for any of the six mental health concerns and only 19.5% screened for all six. An important finding was that in Division II and III athletics there were fewer concerns being screened for than at the Division I level. As with many health issues, it is important to identify mental health issues early to help limit the detrimental effects that they have on the student-athlete's athletic performance. From this study, it is the author's recommendation that each institution should have a written plan to identify athletes with mental health concerns.

Another article in this synthesis study by Sudano, Collins & Miles (2017) looked to create an integrated model for assessing and treating mental health issues in athletic training facilities. The assumption is that incorporating mental health care into the athletic training room can help to reduce the stigma that surrounds mental health issues

for athletes. This study used a “three world view” consisting of three different components: clinical, operational and financial. The integration model was looked at based on different levels. In a level one system, the mental and physical health providers work in separate systems and facilities, while in a level 6-system mental health and physical health provider’s work together in a shared system. The model combines mental and medical health services to aid student-athletes. Combining this research with the NCAA Mental Health Best Practices research provides for a comprehensive care plan that can benefit all athletes. This research found that the most effective way for athletes to find/seek help is for resources to be readily available. This is defined in the research as being in close physical proximity to the athletic facilities. The clinical component urges colleges and universities to incorporate questions pertaining to mental health into their athletics pre-participation examination. The next step in the integrated care model is to monitor how well it is being operated. This component is simply used to determine the efficiency of the program and to determine if there are any changes that need to be implemented. It is evident from the research that mental health professionals need to be made more available to student-athletes. This study showed that approximately only 20% of mental health professionals are available for two and a half days a week. This model supports the idea that a mental health provider should have an appointment with student-athletes once every two weeks as a baseline goal. The next component in this model is the financial component. On a college campus only 73% of mental health providers are paid for their services. It is common that these professionals are paid either through the athletic department or through the student health services on the college campus. Sometimes it is even part of a specific sports team’s budget. This component becomes

challenging when athletic departments and other programs cannot afford to hire a mental health provider. The fourth and final components of the integrated care model are the implications. The key steps in this process are to establish an interdisciplinary team to review protocol that has been implemented. The next step in this process would be to hire mental health staff that supports the vision of the athletic department and the athletic trainers. The mental health professional must be someone who is well versed in the needs of student-athletes and someone who understands athletics. This system ensures that a student-athlete's mental health status will be considered as seriously as their physical health.

Continuing the study, the next article used in this literature review is by Gross, Wolanin, Pess and Hong (2017). This research was completed to test the validity of self-reported answers when depressive symptoms were being evaluated. It is believed that people will "fake good" to present a positive body image. When presented in a high stakes situation, some people try to present themselves as healthier than they are; this is called impression management. This is considered socially desirable responding (SDR) and many times is done subconsciously. Athletes who want to appear more positively when it comes to questions on depression, anxiety, and substance use may use this method. It has been found that SDR occurs most frequently when the surveys are not anonymous but SDR must be taken into consideration to properly identify at-risk athletes. Although this study on SDR isn't directly correlated with underreporting symptoms it proves that athletes are not always transparent with their answers on mental health questionnaires'.

This study consisted of 244 student-athletes from three Division I and III schools. The subjects were 62.3% females and 37.7% males. The study was conducted prior to the athlete's pre-participation physical. In order to collect data on SDR, the Marlowe-Crowne Social Desirability Scale Short Form-C was used. With this survey scores of ten or above indicated that the participant was responding in a socially desirable manner. When measuring depressive symptoms the Center for Epidemiological Studies Depression Scale (CES-D) was used. This study looked for depressive symptoms that occurred in the past week. A score of 16 or higher indicated clinically relevant depressive symptoms. Results found that 25% of the participants had scores on the MC-C scale that were more than 10, which indicated SDR. Female participants were found to have MC-C scores that were below a 10, showing that females have less of a tendency to respond in the desired way compared to the male participants. It is not common for studies to screen for SDR when assessing student-athletes and self-reported studies. It is suggested that this assessment be added to all screenings that require the student-athlete to self-report. This study found that one out of every four student-athletes met the criteria for SDR. Overall this study determined that when SDR increased, self-reported depressive symptoms decreased. If a student-athlete was found to be using SDR, it didn't imply that the athlete is trying to hide depressive symptoms.

The next article included in the critical mass is written by Sudano and Miles (2016). The purpose of this study was to identify the current practices that are in place to help the mental well being of college athletes. This study was comprised of 127 head athletic trainers at Division I colleges. The survey was completely web based with no specifications regarding which surveys were used. It was created on Qualtrics and lasted

approximately five to ten minutes. According to this article, Division I college athletes have high levels of stress that could lead to depressive symptoms. Due to the increased discussion of mental health recently, the NCAA created a task force to address the issues the student-athletes face. There were 336 head athletic trainers, at the Division I level that were sent the survey with only 127 responding. Overall, it was found that 98% of trainers knew that student-athletes have the option to receive mental health care. More than half of the participants said that services could be received in the student-counseling center and about 20.5% stated that there is a mental health resource in the athletic training room. Of those that reported on site mental health services, 73.1% of mental health professionals were employed by the athletic department, 7.7% were employed by student health and another 7.7% were from a sport specific budget, while the remaining 4% was billed to the insurance. A large finding in this study is that there is a lack of uniformity in the help that athletes can seek. This research notes that the ATCs are typically the first line of connection when facing athletes with mental health issues. Due to the close interaction between ATCs and athletes it is important that ATCs know the proper steps to take. This begins with using the proper screening tools to assess athletes who may be at risk early on. It is vital that the institution, under the guidance of the NCAA, look into the implementation of an integrated care model to monitor the mental health of their student-athletes.

Barriers to help mental health issues among athletes

Another article selected for the critical mass was written by Gulliver, Griffiths and Christensen (2012). This study focused on identifying the barriers that athletes

believe prevent them from seeking help for a mental health issue. This study was composed of fifteen participants who were considered elite athletes and each participated in one of three focus groups. The focus groups contained predetermined topics and were directed by the primary author and a research assistant. Although there were predetermined topics, other topics could be discussed as they arose. All participants were informed that the focus of the group was to engage in discussion about help-seeking behaviors for mental health issues and open-ended questions were asked. This study determined that elite athletes are less likely to seek help than non-athletes. The reasons given in this study for athletes not seeking help are listed as: poor mental health literacy; attitudes and personal characteristics; stigma and practical barriers. This research was conducted from a qualitative standpoint. When it comes to athletes seeking help, this research found that male and younger athletes have less positive attitudes than females and older athletes when it comes to speaking with a sport psychologist. Males are less willing to seek help than females and the stigma that surrounds mental health can lead to athletes not wanting to seek help. Athletes don't want to be viewed as "injured" or "weak" to their teammates or coaches. This research touches on the fact that non-athletes can affect athletes when it comes to help seeking for mental health issues. All of the topics discussed in the focus groups were analyzed based on themes that emerged. The different themes that emerged were broken down into, barriers or facilitators.

The themes that were derived from the barriers discussion in the focus group were lack of knowledge about mental health services, lack of knowledge about the symptoms of mental health disorders and negative past experiences. Lack of knowledge about services for mental health is a significant barrier for athletes. If they don't know

where to seek help, they are less likely to do so. This can come into play more often when athletes live in off campus housing. Participants felt that lack of knowing what will happen during a session is another thing that holds them back from seeking help. Some athletes believed that the health provider they would be speaking to might not understand their problem and they were unsure when it was appropriate to see a mental health professional. Another barrier discussed was a lack of knowledge surrounding the symptoms of mental health disorders. The participants stated that mood swings and high to low moods are frequent occurrences for elite athletes. They questioned whether athletes could tell the difference between strain caused by physical exertion or by depression and anxiety. Along with knowing what the causes of the emotions are it was acknowledged that many athletes might not see the symptoms within themselves. Even if they have knowledge of the symptoms they may be blinded when it comes to their own emotions. Due to this difficulty to recognizing their own emotions it was common for coaches or teammates to see the need for help. The final barrier that was discussed was negative past experiences with seeking help. If the participant had a poor first experience and felt that they did not relate to the counselor then they were less likely to return for another session. Participants felt that if this occurred the first time then it could prevent the athlete from seeking help with a different mental health professional. If there was a breach in confidentiality, to a coach or another athlete, then there was a very high chance the athlete will not seek help in the future.

The themes that emerged when the topic turned to facilitators were: encouragement and positive attitudes from others and establishing a relationship with your provider. With encouragement and positive attitudes from a coach, athletes were

more likely to seek help. Participants mentioned that encouragement to seek help would only be useful if the athlete wanted the help. Establishing a good relationship with a health professional was a significant facilitator. Knowing the mental health care provider made it easier for athletes to seek help. Through this research it was found that more than 40% of the barriers discussed focused on the stigma and potential embarrassment that an athlete would feel in seeking help. From the focus group it became apparent that many athletes have self-stigmatizing attitudes towards their own mental health. The findings on stigma in these situations are consistent with previous studies done on this topic.

Chapter 4

Discussion

The purpose of this chapter is to synthesize and discuss what the critical mass of articles have found regarding mental health in collegiate athletes and to answer the original research question presented in chapter 1. For this synthesis, there were a total of ten articles that were examined. In these studies, the participants included college athletes and head athletic trainers.

One of the most essential questions in understanding mental health in college athletes is to know what the most prevalent issue is. Through this research it has been found that depression is the most prevalent mental health issue that athletes are facing. Overall, the depression rate for young adults ranges from 10% to 85% (Wolanin, et al., 2016). This leaves college students and college athletes within that age range. In a study conducted, it was found that 21.4% of college athletes self-reported symptoms of depression (Gulliver et al., 2012). Due to the fact that these studies are self-reported, that number could potentially be much higher. This data begs the question whether athletes who truly need professional help ask for it or if they even recognize the need for it. Based on one study (Wolanin et al., 2016), the overall prevalence for clinically relevant depressive symptoms in college athletes was 23.7%. However, according to Yang et al., 2007, the research on the prevalence of depression in college student athletes is minimal it was found that more than 20% had symptoms of depression.

Understanding how athletes handle mental health issues allows for many questions to be answered about this issue. When it comes to seeking help for a mental

illness the data is consistent with the notion that there is a stigma that surrounds mental health when it comes to athletes. Many college athletes feel that they lack the necessary knowledge about mental health issues, including when seeking help is needed (Gulliver et al., 2012). Based on this study, a major reason for athletes to not seek help is due to the stigma that surrounds mental health. This stigma includes embarrassment, the fear of privacy and confidentiality and also a negative self-perception (Gulliver et al., 2012). Athletes feel that mental health problems can be viewed as a sign of weakness by coaches or other athletes. This research found that non-athletes could stigmatize athletes as well. The stigma from non-athletes is typically directed at male athletes who consulted a sports psychologist. These reasons alone show the need for greater education on the topic of mental health issues.

When asking the question in how to compare male and female college athletes with mental health issues it is clear that the results produced consistent information. Wolanin et al., 2016, found that female athletes reported depressive symptoms to a greater extent than male athletes. It was found that female track athletes are 37.5% more likely to experience depressive symptoms (Wolanin et al., 2016). These findings suggest that female athletes could potentially be at a higher risk for depression than their male counterparts. Through the same study it was found that male lacrosse players have a significantly lower prevalence of depressive symptoms. It is apparent that gender plays a significant role in experiencing symptoms of depression. It was also found that female athletes in the freshman class had an increased risk of experiencing depressive symptoms (Yang et al., 2007).

Another study found that female athletes who played a college sport, but began athletic activity in high school or prior, have significantly less physician diagnosed depression (Wyshak, 2001). It has been found that male athletes are more unwilling than female athletes to seek help from a medical professional for mental health issues (Gulliver et al., 2012). Another study found that males might be victims of discrimination when attempting to seek help for mental health issues based on their athlete status (Barnard, 2016). This clearly shows the difference in males and females regarding mental health.

It is important to discuss the question of how athletes and non-athletes differ when researching mental health issues. As with males and females there are differences in mental health issues when comparing college athletes to non-athletes. When looking at athletes versus non-athletes and levels of depression the research is inconsistent. Wolanin et al., 2016 found that college athletes have lower levels of depression than non-athletes. This is thought to be because athletes have a greater social network and team support than non-athletes. Based on the findings of Wyshak, 2001, former college athletes had more than one- third less physician-diagnosed depression than non-athletes. When measuring the help seeking attitudes of athletes versus non-athletes it was found that non-athletes had a higher expectation of discriminatory attitudes on mental illness than the athlete population (Barnard, 2016). Barnard, 2016 also found a commonality among athletes and non-athletes, their ability to cope and the ability to handle life stressors. In addition, student-athletes seem to be just as likely to seek help as non-athletes (Barnard, 2016). It is apparent that the findings from study to study are not consistent when it comes to comparing males and females.

After understanding the prevalence of mental health issues in college athletes, the next question that needs to be addressed is what institutions are doing to make a change. It is vital that colleges and coaches implement procedures in order to detect mental health issues among athletes. As stated by Kroshus, (2016), many mental health issues are hard to detect in their early stages, but identification and successful treatment is based on an individual seeking help. Identifying mental health issues early is important when it comes to the treatment of such issues.

Across the mass of research one practice is consistent, pre-participation screening. A majority of the data in all of these studies was collected during preseason medical examinations. There is hope that through the recently published NCAA mental health best-practice guidelines published that more consistency in screening can be implemented (Kroshus, 2016). A separate study (Sudano, Collins & Miles, 2017) believes that an integrated care model is the best way to help those with mental health issues. Through this model the goal is to assess and treat mental health issues within an athletic training facility to aid student-athletes with these issues (Sudano et al., 2017).

During screening practices athletes are required to fill out a survey and a team of ATCs, mental health professionals and other important personnel work together in order for the proper lines of communication to be created through the college for the student-athlete (Sudano et al., 2017). Through this integrated care model there are four components. These include clinical, operational, financial, and implications. “Clinically” it is important to assess each athlete for their possible mental health conditions and the ability to refer them to a mental health care provider. The next step in the model is the “operational” step; this determines how services will be provided. This research

recommends that a student-athlete with mental health issues see a “mental health” provider once every two weeks (Sudano et al., 2017). The “financial” part of this model is vital, in general mental health providers are paid through the athletic department, student health services, a sport-specific budget or billing the student-athlete’s insurance. This is important to consider when creating the framework necessary for an integrated care model (Sudano et al., 2017). The “implications” for this integrated model would include an established framework that the institution must follow along with a mental health staff that works closely with the athletic training certified staff (ATCs), since the ATCs are typically an athlete’s first contact.

When looking at another study completed using ATCs from Division I colleges, it was discovered that the best place for mental health treatment for athletes was in close physical proximity to the athletic department or athletic training room (Sudano & Miles, 2016). In 98% of schools there is an option to receive mental health treatment, leaving only 2% without that option (Sudano & Miles, 2016). It was reported that 72% of schools had a mental health clinician in the student counseling center, approximately 20% were located in the athletic training room, 18% were within the athletic department, 17% were off site, while 11% were located on campus and 6% answered there were different arrangements for those who needed it (Sudano et al., 2016). Based on this study, there has been significant information indicating that mental health professionals that are located on campus are not available as frequently as one may need (Sudano et al., 2016).

When looking further into the research surrounding mental health and college athletes it is important to recognize that all of the studies are done through self-reported surveys. It is important to understand socially desirable responding (SDR) when it comes

to analyzing data on depression. According to Gross, Wolanin, Pess and Hong, 2017, socially desirable responding can occur intentionally or unintentionally to endorse the favorable characteristic. This is very important to consider when performing research on this topic. It is another factor that needs to be measured. SDR is measured through the Marlowe-Crowne Social Desirability Scale with score of ten or higher being indicative of SDR (Gross et al., 2017). With all possibilities considered for uncovering mental health issues, it is important to realize the role that early detection and treatment have on college athletes and their mental health.

Chapter 5

Conclusion/Future Research

This section of the synthesis discusses the results of the critical mass articles as well as what future research can be done to examine mental health on collegiate athletes.

Conclusion

The findings from these articles conclude that college athletes do suffer from mental health issues, with the most prevalent being depression (Wolanin et al., 2016). It was determined that there is a stigma that surrounds mental health, which leaves athletes reluctant to seek help (Sudano et al., 2017). Practices for implementing mental health screenings along with the best practices for treatment were discussed. Pre-participation screenings of each athlete for each academic year are recommended to recognize the symptoms of mental health issues early so that treatment can begin immediately (Kroshus, 2016).

When looking at the variables that can affect depression and mental health it was found that there are significant differences. Upon comparing gender it was discovered that female athletes are at a higher risk for depression than males (Armstrong & Oomen-Early, 2009). It was also found that female athletes are more willing to seek help than their male counterparts (Gulliver et al., 2012). Also, female athletes who were also freshman at the institution were found to have high rates of depression (Yang et al., 2007). This was believed to be caused from the new stressors that have been put on the

athletes through distance from home, school and collegiate athletics (Barnard, 2016). When looking at the variable of athletes versus non-athletes, it was determined that athletes tend to have lower levels of depression than their peers, but also the gap in the levels is decreasing, making athletes increasingly similar to non-athletes (Armstrong & Oomen-Early, 2009). Overall, mental health has a large affect on the collegiate athlete population and more policies need to be set in place to help those who suffer from it.

In order for colleges to help with the mental health issues of athletes, the implementation of an integrated care model is needed. It is also beneficial if colleges place mental health providers within the athletic training room or in close proximity to the athletic department.

Future Research

In order to fully understand the extent of mental health issues in college athletes, there is more research that is needed. More research needs to be conducted on the specifics of mental health issues based on gender and sport to see if there is a pattern that emerges. It is important that studies are conducted with the same sample group for an extended period of time to determine the full extent of each variable being measured. Much of the research that has been conducted thus far has been limited to a single year.

There is an extensive amount of research missing when it comes to what is considered the best methods of screening and prevention for athletes with mental health problems. Many colleges currently have the staff to assist athletes, but there is an overall lack of pre-screening that takes place before the athlete begins playing. When it comes to knowing which professional is best suited for this role there is very little data, so that is

needed in future research. It is important to consider whether a clinician is able to work with student-athletes.

For the future, research needs to be conducted to determine how to decrease the stigma that surrounds mental health and how to help more people recognize the issue and seek help. In order for this to occur more research must be done to determine whether education about mental health conditions can improve the frequency of seeking-help.

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Author	Title	Source	Purpose	Methods & Procedures	Analysis	Findings	Discussion/ Recommendations Research Notes – Commonalities/Differences
Andrew Wolanin , Eugene Hong, Donald Marks, Kelly Panchoo , Michael Gross	Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport	Wolanin, A., Hong, E., Marks, D., Panchoo, K., & Gross, M. (2016). Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport. <i>British Journal Of Sports Medicine</i> , 50(3), 167-171.	To determine the prevalence of depression symptoms in athletes from an NCAA division I university over the course of three years.	Data was collected during 3 consecutive years during the spring sports medical physical. This included a Center for Epidemiological Studies Depression Scale (CES-D) along with a demographic questionnaire. There were 465 participants in this study.	This data was looked at statistically through the CES-D to help determine if there is a significant difference between depressive symptoms in males or females and also athletes and non-athletes.	Female athletes more frequently report experiencing depressive symptoms and social anxiety more often than male athletes.	This study shows that athletes are not immune to clinical depression based on the fact that they are active.
Emily Kroshus	Variability in Institutional Screening Practices Related to	Kroshus, E. e. (2016). Variability in Institutional Screening Practices	To determine if there are policies set into place for	An electronic survey through email was used to	This study was a cross-sectional study that used an electronic study to collect	There is much room for improvement when it comes to the availability of	Early identification and treatment can be highly beneficial when it come

	Collegiate Student-Athlete Mental Health	Related to Collegiate Student-Athlete Mental Health. Journal Of Athletic Training (Allen Press), 51(5), 389-397. doi:10.4085/1062-6050-51.5.07	determining mental health screenings within NCAA institutions .	collect data. The only participants in this study included were head ATCs or team physicians.	its data. Data was analyzed through Pearson's Chi-Squared test for independence to determine the difference in institutions that screen athletes for mental health and those that do not. Comparisons were done based on athlete to physician ratio as well.	professional help in many institutions. The screenings necessary to protect and aid athletes may be a challenge to complete due to lack of staffing at many institutions.	to reducing the harm of the mental health issues. *This usually occurs when the individual seeks help on his or her own, fairly early in the process. Limitations: To perform research in order to discover if these best practices is being implemented. Extensive research is missing when it comes to short-form screening instruments to lead to recommendations for screenings.
Grace Wyshak	Women's College Physical Activity and Self-Reports of Physician-Diagnosed Depression and of Current Symptoms of Psychiatric	Wyshak, G. (2001). Women's College Physical Activity and Self-Reports of Physician-Diagnosed Depression and of Current Symptoms of Psychiatric	The purpose of this paper is to determine the association between women's' athletic activity in college/pre college years and	This study used self-reported questionnaires' that looked into the participant's health histories including any previous diagnoses	In this study statistical methods of analysis were used. The medical history questionnaire used was the Rand Mental Health Inventory (RMHI-5).	This study determined that overall athletes have a lower risk of depression than non-athletes. Also that there were one third less diagnosed cases of depression in	This study is the first of its kind, reporting on the long-term effects of a women's colligate physical activity and clinically diagnosed depression

	Distress	Distress. Journal Of Women's Health & Gender-Based Medicine, 10(4), 363-370. doi:10.1089/152460901750269689	physician-diagnosed depression after college.	and current psychological symptoms.		athletes than non-athletes.	symptoms after there colligate careers.
Laura E. Sudano PhD, Greg Collins ATC & Christopher M. Miles, MD	Reducing Barriers to Mental Health Care for Student-Athletes: An Integrated Care Model	Sudano, L. E., Collins, G., & Miles, C. M. (2017). Reducing barriers to mental health care for student-athletes: An integrated care model. Families, Systems, & Health, 35(1), 77-84. doi:10.1037/fsh0000242	To create an integrated model for assessing and treating mental health issues within an athletic training facility to aid student-athletes with these issues.	Requiring athletes to take a preparatory physical examination (PPE). This screening includes mental health questions to determine if the athlete has been diagnosed or has a condition that has not been discovered. A team of ATCs, mental health professionals and other important personnel needs to be established	Due to this study focusing on the integration of care, there are four different categories that are addressed. These include clinical, operational, financial, and implications.	In order to erase the stigma or fear associated with mental health it is vital for athletes to feel secure with whom they are working with. This can be simplified when schools include clinical, operational and financial components.	Find cooperation within the university, preferably the athletic department to have cooperation between the ATCs and mental health staff along with administration. The payment of mental health can be joining through any campus department. Answers research question #4

				in order for the proper line of communication to be created through the college and the student-athlete.			
Amelia Gulliver, Kathleen M. Griffiths and Helen Christensen	Barriers and Facilitators to Mental Health Help-Seeking for Young Elite Athletes: A Qualitative Study	Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help seeking for young elite athletes: A qualitative study. <i>BMC Psychiatry</i> , 12	To determine what young elite athletes consider to be barriers and facilitators to seeking help with mental health problems.	There were 15 participants within this study with a mean age of 19 years old. The focus groups were structured and contained predetermined topics.	Data was collected through one of three focus group discussions, lasting an hour each and through written data. Audio recording was used with verbal responses and then transcribed and analyzed by theme. There was a thematic analysis done in NVivo 8 where themes emerged.	The largest barriers to seeking help for mental health issues are the stigma that surrounds it. There is a perceived fear of being seen as weak when seeking help from coaches and other athletes. The data showed that the most prevalent barrier was the stigma that surrounds help seeking. Other barriers include lack of knowledge on mental health issues along with negative past experiences with mental health care providers.	Due to the stigma surrounding help seeking and mental health male athletes are less likely to seek help over the female athletes. Male athletes fear being seen as weak by their teammates and coaches.
Jordan D. Barnard	Student-Athletes' Perceptions	Barnard, J. D. (2016). Student-	This study looks at the	The participants in this are	Participants from both the athlete and	It was determined that there is	It is important to note that the student-

	of Mental Illness and Attitudes Toward Help-Seeking	Athletes' Perceptions of Mental Illness and Attitudes Toward Help-Seeking. Journal Of College Student Psychotherapy, 30(3), 161-175. doi:10.1080/87568225.2016.1177421	attitudes around mental health issues and help seeking in college athletes and non-athletes.	two different groups, one consists of collegiate athletes and the other is non-athletes from three different institutions.	non-athlete group answer questions from three different scales. These include the Devaluation-Discrimination Scale with revisions, a social distance scale and the ATSPPHS. Both groups also completed an athletic identity scale.	no significant difference between the willingness of athletes to seek-help compared to their peers.	athlete group in this study scored significantly lower than their peers on 2 out of 5 factors to define wellness, but both groups scored low in coping self and their abilities to handle life stressors. It was also found that gender predicted of the individual would seek help with women more likely to seek help than men.
Mike B. Gross, Andrew T. Wolanin , Rachel A. Press & Eugene S. Hong	Socially desirable responding by student-athletes in the context of depressive symptom evaluation.	Gross, M. B., Wolanin, A. T., Pess, R. A., & Hong, E. S. (2017). Socially desirable responding by student-athletes in the context of depressive symptom evaluation. Journal Of Clinical Sport Psychology, 11(2), 148-	The purpose of this study is to determine how much of self-reported documents limit validity based on the individual responding in a socially desirable	This study was conducted during the athlete's sports medicine physical for Division I and Division 3 athletes. Each athlete was asked to complete an	Through the MC-C scores that were over a 10 indicated that the individual was responding in a socially desirable manner.	It was determined that it was more common for males to SDR than females. If an athlete is scoring highly on the SDR Scale that doesn't mean they are doing it purposefully to conceal a problem. Not definitive	Assume that this did not occur in the other studies.

		157. doi:10.1123/j csp.2017- 0020	way.	informed consent and a demograph ic questionnai re. They were also given the Marlowe- Crowne Social Desirability Scale Short Form C (MC-C). This form consists of 13 items that require a true/false answer. The second scale that was used was the Center for Epidemiolo gical Studies Depression Scale (CES-D), this was used to measure depressive symptoms. This contains 20 items that determine which depressive symptoms have		conclusion can be made.	
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				occurred over the past week.			
Shelley Armstrong, PhD, MAT & Jody Oomen-Early, PhD, MS, CHES	Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus non-athletes.	Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus non-athletes. <i>Journal Of American College Health, 57(5)</i> , 521-526. doi:10.3200/JACH.57.5.521-526	The purpose of this study is to compare athletes and non-athletes to determine if there are significant differences between social connectedness, self-esteem, and depression. They were also broken down into variables and determined if there was an associated with athlete status, GPA, BMI, weekly exercise and sleep and depressive symptoms.	This study used the Epidemiological Studies Depression Scale (CES-D), the Rosenberg Self-Esteem Scale and the Social Connectedness Scale –Revised. The data was collected on the college campus in the dining hall during lunch and dinner hours. Participants must have approached the research table to be in the study once the informed consent was signed the participants were given a survey	A computer system was used to analyze the collected data. Many significant relationships were found between each of the variables measured in this study.	This study concluded that athletes had higher self-esteem and a greater social connectedness than non-athletes. Athletes also had lower depression symptoms than non-athletes. The only significance found when comparing gender was that females are more likely to suffer from depression than males. Also, as one would expect athletes have more hours of exercise per week than their non-athlete peers.	Proves that there is limited and inconsistent research on the topic at hand.

				packet and directed into a private dinning room to complete them and once returned the data was given a unique code.			
Yang, J., Peek-Asa, C., Corlette, J. D., Cheng, G., Foster, D. T., & Albright, J.	Prevalence of and Risk Factors Associated With Symptoms of Depression in Competitive Collegiate Student Athletes	Yang, J., Peek-Asa, C., Corlette, J. D., Cheng, G., Foster, D. T., & Albright, J. (2007). Prevalence of and Risk Factors Associated With Symptoms of Depression in Competitive Collegiate Student Athletes. Clinical Journal Of Sport Medicine, 17(6), 481-487.	The main objective in this study is to determine the factors associated with depressive symptoms within this population while determining the prevalence of depressive symptoms among collegiate student athletes.	Surveys were given at preseason meetings and included 257 college student athletes. These athletes were participants at a Division I institution. Symptoms of depression were measured on the Center for Epidemiological Studies Depression Scale (CES-D). The General	The data was analyzed statistically. Chi-Squared tests are used to determine the differences in symptoms of depression when it came to the differences in gender, race, team, and college class. The study used clustering variables to group each sports team to identify if teams shared specific traits.	21% of participants were identified as being symptomatic for depression. There were no significant differences among anxiety scores in any of the categorized fields. When it comes to gender and collegiate class, there were proven to be significant factors associated with depressive symptoms. More specifically the female gender and	Further research needs to be done on what is the best method/ way of implementing mental health screenings into the pre-participation screenings required by the NCAA. This needs to be done to aid the athletes in their recovery or more methods of protection. Further research needs to be done as women increase their involvement in sport to determine why they are

				Estimating Equations scale (GEE) was used in this study to evaluate the factors leading to symptoms of depression.		those in the freshman class were more likely to experience symptoms of depression. The study concluded that 21% of the collegiate student athletes in Division I have depressive symptoms, but that is consistent with studies done with a typical college population. This study showed that there was a high proportion of female athletes reporting depressive symptoms than males.	at greater risk for developing depressive symptoms.
Sudano, L. E., & Miles, C. M	Mental Health Services in NCAA Division I Athletics: A Survey of Head ATCs	Sudano, L. E., & Miles, C. M. (2016). Mental Health Services in NCAA Division I Athletics: A Survey of Head	The purpose of this study is to identify the services available for mental health care to student-	Data was collected through a 5-10 minute online survey created in Qualtrics. This survey contained	Descriptive statistics were used for all variables and to determine the frequency of the responses. The statistical analysis was completed through SPSS,	According to the study, in 98% of schools there is an option to receive mental health treatment, leaving only 2% without that option. It	Based on this study there has been significant information showing that mental health professionals that are located on campus are

		<p>ATCs. <i>Sports Health: A Multidisciplinary Approach</i>, 9(3), 262-267. doi:10.1177/1941738116679127</p>	<p>athletes at Division I institutions .</p>	<p>31 questions of different formats. The participants in this study were 336 NCAA Division I Head Athletic Trainers (ATCs). The ATCs were contacted through email to complete this survey within 13 months. Only 127 of those 336 participated in the study. Giving the study a 36% response rate.</p>	<p>version 22.0 to determine the quantitative results.</p>	<p>was reported that 72% of schools had a mental health clinician in the student counseling center, approximately 20% were located in the athletic training room, 18% were within the athletic department, 17% were off site, while 11% were located on campus and 6% answered there were different arrangements for those who needed it.</p>	<p>not available as frequently as one may need (see chart). The majority of these professionals are psychologists.</p>
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