CAUSES AND TREATMENT OF DEPRESSION IN COMPETITIVE ATHLETES: A SCOPING REVIEW

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CAUSES AND TREATMENT OF DEPRESSION IN COMPETITIVE ATHLETES: A SCOPING REVIEW

by

Franklin Curtis

B.S., Southern Illinois University, 2020

A Research Paper
Submitted in Partial Fulfillment of the Requirements for the Master of Science in Education

School of Human Sciences
in the Graduate School
Southern Illinois University Carbondale
August 2023
CAUSES AND TREATMENT OF DEPRESSION IN COMPETITIVE ATHLETES: A SCOPING REVIEW

by
Franklin Curtis

A Research Paper Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Education in the field of Kinesiology

Approved by:
Meungguk Park, Chair

Graduate School
Southern Illinois University Carbondale
June 23, 2023
AN ABSTRACT OF THE RESEARCH PAPER OF

Franklin Curtis, for the Master of Science degree in Kinesiology, presented on June 23, 2023, at Southern Illinois University Carbondale.

TITLE: CAUSES AND TREATMENT OF DEPRESSION IN COMPETITIVE ATHLETES: A SCOPING REVIEW

MAJOR PROFESSOR: Dr. Meungguk Park

Objective: Investigate causes and treatments of depression in competitive athletes and whether depression can be mitigated or eradicated in athletes, based on findings of results.

Participants: This scoping review includes participants of elite athletes, ranging from the professional level to middle school student-athletes, all competitive in their respect. Results: The primary causes and or risk factors of depression in athletes were: overtraining, injury, and loss of athletic identity. The primary treatments or potential treatments for depression in competitive athletes, both implicitly and explicitly addressed were: emotional support, coping (formal and informal), and refined intangibles. Conclusion: Athletes will not discuss or report mental health struggles, including struggles with depression, due to negative stigmas that suggest athletes are both pillars of physical and mental well-being. Coping mechanisms, emotional support, and developing intangibles were the most common methods of treatment. An athlete that diversifies their identity, pursues a life of virtue and formulates their identity through values that they can control could reduce their risk for depression.
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High Profile Athletes Suffering from Depression

Michael Phelps, the most decorated Olympic athlete of all time, winning 28 medals with 23 of them being gold; struggled with depression. In the HBO Sports documentary, “The Weight of Gold,” Phelps voices his struggles with both identity and depression, which often go hand in hand with athletes. “If your whole life was about building up to one race, one performance, or one event, how does that sustain everything that comes afterward?... Eventually, for me at least, there was one question that hit me like a ton of bricks: Who was I outside of the swimming pool?” ... “Yeah, I won a s—t ton of medals. I had a great career” ... “So what? I thought of myself as just a swimmer, not a human being.” (Prahl, 2020, p.2)

Ronda Rousey, the first female to be inducted into the UFC Hall of Fame (Markazi, 2018), and the youngest judoka to qualify for the Olympic games at the age of 17 (USJF, 2018); also struggled with depression. The reported catalyst, despite her prolific UFC career, winning her first 12 fights; in which 11 ended in the first round (BBC News, 2015), was when she lost to Holly Holm in UFC 193. As a guest on the Ellen DeGeneres show, Rousey was transparent with her true feelings post-UFC 193. “What am I anymore if I’m not this... I was literally sitting there, thinking about killing myself.” “I’m nothing, what am I going to do anymore? No one gives a sh-t about me without this.” (TheEllenShow, 2016, 2:57-3:09)

To many, the success exhibited by both Ronda Rousey and Michael Phelps is otherworldly. Despite achieving some of the greatest feats of fame, wealth, persona, and family, depression is alive and well in the world’s greatest athletes. This conundrum is paradoxical, despite having impeccable mental and physical conditioning in their sport, as with many other
elite athletes, one would think they have no reason to be depressed. Physical activity, by itself in healthy adults, is estimated to be 1.5 times more effective in treating mild-to-moderate symptoms of depression, anxiety, and mental stress when compared to medication or cognitive behavior therapy (Singh et al., 2023). This is in the context of everyday adults, elite athletes train and refine themselves to the highest standards of peak performance, maximizing the positive effects obtained through physical activity. The question at hand, is how could elite athletes suffer from depression; when numerous amounts of studies and data, support the notion that their lifestyle is a natural combatant to depression?

**Athletes Affected by Depression**

Depression among athletes, formerly a taboo topic, is now surfacing into the limelight. According to the American College of Sports Medicine, roughly 30% of females and 25% of males who are student-athletes report experiencing anxiety, yet; only 10% of college athletes struggling with a known mental illness will seek professional healthcare. Data also illustrates that around 35% of elite athletes suffer from an eating disorder, burnout, anxiety, and or depression (American College of Sports Medicine, 2021).

College athletes face stress in the same way the traditional student body does, however; there are external stresses placed on college athletes that the regular student body will not experience. According to the NCAA Student-athlete Well-being study, 94% of female and 78% of male student-athletes reported feeling overwhelmed balancing school, sports, and additional responsibilities (NCAA Student-Athlete Well-Being Study, 2021).

Alarmingly, nearly half of the female athletes in the study reported feeling overwhelmed every day. In addition, 45% of men and 72% of women reported overwhelming anxiety at least once in the past month, at the time of the study. Roughly 24% of men and 36% of women
reported experiencing some type of depression once in the past month, at the time of the study (NCAA Student-Athlete Well-Being Study, 2021).

Around 6% of men and 9% of women reported experiencing depression constantly or almost every day. Stressors that were reported to affect college athletes’ mental health were: academic worries, planning for the future, financial worries, playing time, coach relationships, family worries, team environment, and COVID-19 concerns (NCAA Student-Athlete Well-Being Study, 2021).

It is important to have both concrete and universal definitions of depression and anxiety, as oftentimes they are used interchangeably in research. While depression and anxiety are similar, they are certainly not the same, however; the two mental illnesses are commonly witnessed in a pair. Common symptoms of general depression include but are not limited to: sadness, worthlessness, anxiousness, loss of hope, lethargy, changes in dietary habits, sleeping in abundance or scarcity, brain fog, etc. (WebMD Editorial Contributors & Casarella, 2021). Common symptoms of general anxiety include but are not limited to: irritability, worry, being overwhelmed with worry, feeling out of control, etc. (WebMD Editorial Contributors & Casarella, 2021). The main difference between depression and anxiety is when a person is depressed, they will consistently feel feelings of sadness and things associated. Symptoms stemming from intense feelings of sadness are typically lethargy and loss of interest or enjoyment in things that were once appealing. Anxiety is concerned with fear and worry. The type of anxiety is dependent on the type of fear and or worry. For example, if someone is fearful or worried about meeting new people, they could be diagnosed with social anxiety instead of general anxiety (WebMD Editorial Contributors & Casarella, 2023).

The symptoms of depression in elite athletes and the general population are typically the
same, with occasional variances among men and women. Common symptoms among athletes and the general population might include: loss of interest in things one used to enjoy, inability to feel pleasure or joy, isolation, feelings of sadness, feelings of hopelessness, feelings of emptiness, body aches, rumination on past failures, self-hate or blame, etc. (Sawchuk, 2022). The consequences of depression in the lives of elite athletes and the general population, however, will vary, as depression will directly affect an athlete’s sport and things associated.

Chris Bader, a counseling and sport psychologist for the University of Colorado, is allotted an excerpt on the NCAA’s website discussing student-athlete mental wellness, with a primary topic being depression. Symptoms of depression and mental disorders associated with depression are discussed, relating to athletes however; is how depression will affect them.

It is inferred in the excerpt that an athlete’s performance in their sport and life outside of sport will decline, and if not addressed; depression will spiral into a deeper depression that will prolong an athlete’s suffering. Due to a lack of concentration and focus from depression, an athlete will be at an increased risk for injury. An injured athlete, even if not previously suffering from depression, may spiral into a deep depression if their identity as an athlete is threatened or diminishes completely. Depression increases the risk of suicide in athletes astronomically. Suicide risk has often been liked to feelings of hopelessness, lack of meaning, and lack of purpose. Awareness of an athlete’s symptoms is crucial, whether trivial or monumental. The ambiguity of sports participation for a depressed athlete is noteworthy. The paradox is, an athlete’s athletic identity is threatened at the onset of depression due to fear of losing their position. If professional help interferes with athletic practice and competition, the loss of athletic identity could feel insurmountable. At the same time, an athlete that continues to perform in a state of depression will affect their performance in their sport, and their depression is likely,
although not certain, to worsen without help (Bader, 2014).

Athletes being vocal about their struggles with depression is slowly becoming normalized. Simone Biles, the most decorated female gymnast of all time, withdrew from the Tokyo Olympics due to mental health issues (Sanchez, 2021). The stigma that athletes are more than human, and beyond human struggles is slowly fading.

A scoping review is needed to address depression in athletes because depression in athletes needs to be targeted specifically. Current research is aimed at mental health for athletes in a general sense. The primary purpose of a scoping review is to combine evidence and research in existing literature (Levac et al. 2010; Peters et al., 2015). A scoping review is necessary for depression in competitive athletes because this topic is a novelty in development. A scoping review will fill gaps in existing knowledge, as well as determine if further research is needed (Romund, 2017).

**Purpose of Study**

The purpose of this study is to investigate the causes of depression and potential treatments for depression in competitive athletes. Paradoxically, an athlete’s lifestyle is a natural remedy to depression, as constant physical activity and competition are key to producing endorphins. Endorphins produce a euphoric feeling in the body, similar to the euphoric feeling produced by morphine (Bruce, 2022). Athletes suffer from not only minor depression but severe depression even to the point of suicide. Causes and treatments for competitive athletes suffering from depression will benefit the athletic world and academia.

**Significance of Study**

The significance of this study is to prevent the extreme outcomes of depression from surfacing in athletes. Suicide rates in the general population have increased by almost 60% from
2007 to 2018. The Center for Disease Control has reported that suicide is the second leading cause of death among the ages of 10-34 (UC Davis Health, 2021). The odds of someone successfully committing suicide in men is 7 out of every hundred, and 1 out of every hundred for women (American Association of Suicidology, 2009). Five reported NCAA athletes took their life between March and April of 2022: Sarah Shulze, Katie Meyer, Jayden Hill, Robert Martin, and Lauren Bennett (Siefert, 2022). Depression in competitive athletes is as necessary as it is pertinent to both academia and athletics, as human life is priceless and invaluable, to prevent unprecedented suicide rates from occurring in future generations of athletes.
LITERATURE REVIEW

General Depression in Athletes

Depression is prevalent in both male and female athletes. However, research indicates that symptoms of depression will manifest differently in the sexes. Both men and women are subject to the same symptoms of depression indiscriminately. In a research study investigating the patterns of mental health behaviors among college athletes, females were shown to report about an hour less of sleep compared to males. However, males were shown to consume alcohol more often than females. Diet, sleep, alcohol use, social connectedness, etc.; were all potential indicators that an athlete needed to address their mental health, as they are all affected by depression in male and female athletes (Souza, Esopenko, Conway, Todaro, Buckman, 2021).

Physical activity benefits athletes and the general population, with the exception of injuries. Injured athletes and the general population are unable to participate in physical activity when injured. Athletes and the general population alike are shown to have improved mental health, and elevated levels of self-esteem when partaking in physical exercise (Lukanovic, Babic, Katic, Zovko, Martinac, Pavlovic, Babic, 2020). Roughly half of collegiate athletes suffer an injury that will require professional intervention, whether it be through a doctor or another form of professional examination (Heiden, 2014; Hootman, Dick, Agel, 2007; Yang, Schaefer, Zhang, Covassin, Ding). An athlete that sustains an injury as such will be unable to practice or compete for an unknown amount of time. Athletes that are injured are more prone to depression and symptoms of depression (Dahab, Potter, Provance, Albright, Howell, 2019).

Another major factor contributing to depression in athletes is athletic identity. Athletic
Identity and an athlete’s self-esteem are concurrently found in many research studies. When an athlete’s athletic identity is threatened, the risk for depression and symptoms of depression increases astronomically. This is evident in a study that measured Olympic athletes’ mental health after the postponement of the 2020 Tokyo Olympics. It was hypothesized that the postponement of the 2020 Tokyo Olympics would have a negative impact on athletes’ mental health. A clear association was found between self-reported depression and the postponement of the 2020 Tokyo Olympics. Athletes reported feeling: a loss of motivation, meaning, identity, and ambition toward professional competition (Lambert et al., 2022). Both professional and collegiate athletes suffer from depression due to loss of athletic identity in numerous studies. Specifically preparing college athletes to transition to life outside of sport is imperative, as it may prevent sudden onset distress such as depression (Menke, Germany, 2018). Multiple studies reference how forced retirement can impact an athlete negatively, whether it be through injury, being cut from a team, etc. Athletes have been shown to have a greater sense of self-esteem upon voluntary retirement, while involuntary retirement was shown to negatively affect athletes with a strong athletic identity (Marin-Urquiza, Pedro Ferreira, Van Biesen, 2018).

**Significance of Depression in Athletes**

As of 2017, suicide was the 10th leading cause of death in the nation, and was 2nd overall among young adults. Men are two to three times more likely to succeed in suicidal attempts, while women are two times more likely to attempt suicide. Student-athletes, in most cases, are at less risk for attempting suicide or things related to suicide. Student-athletes are even at less risk for suicidal behavior when compared to the general population or even students of the same age (Anchuri, Davoren, Shanahan, Torres, Wilcox, 2019). This can be misleading however, as athletes are unlikely to seek professional help if they are struggling with their mental health; let
alone report if they are struggling with their mental health (Donohue, Gavrilova, Danlag, Perry, Kuhn, Allen, Benning, 2020).

Many studies report that athletes will not utilize mental health services due to negative stigmas attached to them such as: perceived weakness from teammates, loss of starting position, perceived unreliability, etc. (Drew, Matthews, 2019; Moreland, Coxe, Yang, 2018). However, a study measuring the utilization of mental health services from athletes bridged gaps in knowledge as to why this claim may be unreliable. It was shown that whether sports were in season or off-season, it did not affect an athlete’s utilization of mental health services (Donohue, Gavrilova, Danlag, Perry, Kuhn, Allen, Benning, 2020). In addition, a competitive elite athlete or a competitive intramural athlete showed no differences in the utilization of mental health services. Gender or ethnic differences among athletes also made no difference as to whether or not athletes used mental health services. Many confounding variables can be suggested as to why this is so, but what remains consistent, including in this study; is that utilizing mental health services comes with a negative stigma in the athletic world (Donohue, Gavrilova, Danlag, Perry, Kuhn, Allen, Benning, 2020).

Depression is particularly significant in athletes, because while their reported cases and severity might be lower than those of the same age and general population; it is reasonably concluded that mental health issues among athletes are underrepresented. Thus, according to the American College of Sports Medicine, data indicates that of the athletes tested, around 35% of athletes will struggle with: an eating disorder, burnout in their sport, anxiety, depression, or a combination of such things. It is also estimated that roughly 20% of adults in regular society will experience some degree of mental health issue, making athletes more susceptible than standard adults (American College of Sports Medicine, 2021).
Causes and Risk Factors of Depression in Athletes

There are many factors that cause depression. The most common causes and risk factors for depression in athletes found in research include but are not limited to in no specific order: loss of athletic identity, weak social bonds, injury, overtraining, performance-enhancing drug or steroid use, concussions, poor nutrition or insufficient diet, impoverished upbringing, genetics more susceptible to depression, chemical or hormonal imbalances in the body making one more susceptible to depression, etc.

As stated previously, loss of athletic identity can be a cause of depression. Whether the loss of athletic identity may be due to: injury, loss of starting position, change of teams, involuntary retirement, etc., many athletes struggle with their mental health after their sport ends. Research conducted by the American Psychiatric Association indicates that the most common time for depression is between the ages of 20 and 30 (Weigand, Cohen, Merenstein, 2013); there is a correlation in athletics. Typically, this age range tends to be when the majority of college athletes will put an end to their sporting career. Not only that, athletes have a strong sense of social connectedness with their teammates and people associated with their sports, when their sporting career ends; many of those social connections will weaken (Weigand, Cohen, Merenstein, 2013).

Participating in sports increases one’s likeliness of injury and future chronic injuries of various severities, this is no different for athletes; in consequence, may make way for depression. Many competitive athletes have been subjected to overtraining, due to the competitive nature of sport, and can develop unhealthy behaviors over time. Coping mechanisms that have been adopted by athletes later in life included: inactive lifestyle, poor diet and nutrition, chronic diseases from sport or lack of self-care, etc. Former Division I athletes were shown to struggle
more in life compared to noncollegiate athletes. Former Division I athletes generally showed more: fatigue, depression, pain, less physical function, trends of osteoarthritis, less physical activity, limitations in daily activities, etc., and on average; demonstrated a poorer quality of life than their peers who did not participate in NCAA regulated sports (Simon, Lorence, Docherty, 2021).

Performance-enhancing drugs or steroid use will contribute to underlying mental health issues among athletes. Daria Piacentino and her coauthors investigated anabolic-androgenic steroid use and psychopathology in athletes. It is estimated that over 2 million people have used some type of steroid or performance-enhancing drug in the United States. It is also estimated that over 500,000 high school students have used steroids or performance-enhancing drugs for performance. In most studies, men will use steroids or performance-enhancing drugs at higher frequencies and dosages than women. Men in general, will also use performance-enhancing drugs and steroids more than women. Steroids have been associated with: dysthymia, refractory depression, hypomania, mania, apathy, anhedonia, difficulty concentrating, an erratic sleep schedule, decreased libido, suicidal ideation, psychopathology, mood swings, myocardial infarction, anxiety, muscle dysmorphia, anorexia, obsessive personality tendencies, anhedonia, perfectionistic personality tendencies, narcissistic personality tendencies, etc. (Piacentino, Kotzalidis, Casale, Aromatario, Pomara, Girardi, Sani, 2015).

Concussions have an impact on an athlete’s mental and physical well-being, both long and short-term. Many former NFL players that have committed suicide had a history of concussions (Vargas, Rabinowitz, Meyer, Arnett, 2015).

Diet and nutrition have been both a staple for maintaining optimum performance in athletes, as well as promoting well-being in their daily lives. The United States military
conducted a study investigating the effects of vitamin D on tactical athletes. It was shown that vitamin D deficiency in tactical athletes did increase their risk of being diagnosed with depression or depressive symptoms (Schaad, Bukhari, Brooks, Docker, Barringer, 2019). It is important to note, just like tactical athletes that are stationed in submarines or in very cold environments where the sun doesn’t shine as vibrantly or directly; athletes that practice in indoor facilities could be prone to vitamin D deficiency.

Studies vary in statistical reports of how many athletes come from impoverished backgrounds. Oftentimes, areas of poverty have consistent features such as: poor education, desensitization to violence, and things that come with it such as drugs, high unemployment rates, hunger, substandard housing, etc. Athletes that come from poverty, or specifically, athletes that have been exposed to extreme violence could develop some degree of PTSD (Post Traumatic Stress Disorder) (Fernandes Jr., Silva Jr., Ramos, Gama, Lobo, Leal Souza, Sanchez, 2021). Depression is a common occurrence in those who develop PTSD.

Genetic and chemical influences on athletes’ symptoms of depression, or potential sources for depression are common topics in research. The relationship between 5HTT polymorphisms, or in simple terms, what transports serotonin, and depressive symptoms in athletes was investigated. Athletes with the s allele, or the short version of the serotonin transporter, were shown to be at higher risk for: neuroticism, anxiety, depressive symptoms, and depression. Athletes with the l allele, or the long version of the serotonin transporter, were shown to have less: neuroticism, anxiety, depressive symptoms and depression (Petito, Altamura, Iuso, Padalino, Sessa, Andrea, Margaglione, Bellomo, 2016).

A recent theory proposed by Weronika Forys and Tracey Tokuhama-Espinosa (Forys, Tokuhama-Espinosa, 2022) is the concept of adaptable depression. This concept also includes
research on the 5-HTTLPR polymorphisms or serotonin transporters. The ideas behind this concept are that, for starters, athletes have a different serotonin baseline than the general population (Forys, Tokuhama-Espinosa, 2022). It is hypothesized, in simple terms, intense physical exercise will promote strong feelings of well-being. Athletes who do a lot of intense physical exercise will have higher baseline levels of a chemical called serotonin in their bodies. It is believed that athletes’ bodies adapt to having higher levels of serotonin, numbing their sensitivity to feelings of sadness and or depression. This goes into the second notion that athletes are not as sensitive to stress stimuli compared to the general population, due to desensitization linked to years of intense athletic training. Inappropriate responses to external or internal stimuli that would normally cause stress in the general population might not occur the same way in athletes, this could lead to misdiagnoses in tools used to deduce depression in people. Lastly, negative social stigma and athletic culture could cause an athlete to trivialize their symptoms of depression, if they even notice them at all based on this theory (Forys, Tokuhama-Espinosa, 2022).

**Treatments and Coping Mechanisms of Athletes with Depression or Depressive Symptoms**

Successful treatments and coping mechanisms for athletes suffering from depression are available in research but are scarcer when compared to causes and risk factors. High-profile athletes such as Kevin Love, Michael Phelps, and Brandon Marshall have discussed their experiences with different types of therapy in media outlets. Whether it was working with a licensed clinical therapist, or a therapist that specialized in cognitive behavioral therapy, group therapy, etc.; these men found healing and relief in their mental health battles (Sutton, Sernasie, HeadsUpGuys, 2021). More commonly, athletes will not seek professional help due to negative stigmas attached, they’re more likely to seek unprofessional help or resort to mechanisms of self-
coping. Common treatments methods and coping mechanisms athletes utilize include but are not limited to in no specific order: refined intangibles such as gratitude or psychological resilience, problem-based coping, emotional coping, appraisal-focused coping, avoidance coping, proper emotional regulation, healthy perception of life and events, healthy generalization of performance, life, and events, emotional support both external and internal, proper self-care routines, well-being therapy, autonomous motives in relation to present and future goals, religious service, quality social bonds, surfing, etc.

Intangibles are useful in every aspect of life, specifically in reference to athletes, gratitude has been suggested to be a mediator to negative states of well-being, as well as promoting an overall higher quality of life. Gratitude was studied in adolescent athletes, and was suggested that an athlete full of gratitude was prone to positive psychological effects. A grateful athlete was more likely to accept and receive social support from coaches and teammates. A grateful athlete was also more likely to perceive positive social support from coaches and teammates, compared to an athlete not as grateful, who was more likely to both dismiss positive social support and or not recognize it at all (Chen, 2012).

Gratitude has been linked to self-reported positive life satisfaction in athletes. Shockingly, strong team cohesion could make up for an athlete being less grateful, and allow them to still self-report a high perception of life satisfaction. In addition, an athlete filled with gratitude was more likely to perceive positive team cohesion. Athletes were also shown to feel less academic stress or competitive pressure from sport and were not affected by burnout in their sport compared to other athletes (Chen, Kee, Chen, 2014).

Due to the fact many athletes will never seek professional help for a variety of reasons, athletes will cope in healthy and unhealthy ways. Athletes tend to cope with depression in four
ways: problem-based coping, emotional coping, appraisal-focused coping, and avoidance coping (Lebrun, MacNamara, Collins, Rodgers, 2019). All coping strategies can be used in both a positive and negative way, each having its own strengths and weaknesses. Problem-based coping tries to solve a problem or change a situation. Emotional coping addresses the negative emotions caused by depression or the adversity at hand causing depression. Appraisal-focused coping addresses the thought patterns in relation to depression and circumstances. Lastly, avoidance coping focuses on moving oneself away from a situation or emotion causing depression through a variety of methods (Lebrun, MacNamara, Collins, Rodgers, 2019).

Emotional regulation and perception of events are reoccurring themes for treating athletes with depression. The development of psychological resilience has been a key component in reducing stress, anxiety, and depression in athletes, or at the very least, has been a successful deterrent. In a study conducted at the University College Dublin (Drew, Matthews, 2019), resilience could be paraphrased as developing intangibles that buffer an athlete’s mental health from negative stress stimuli (Drew, Matthews, 2019). Another study conducted at Ataturk University (Turkey) (Ozan, Secer, 2022) suggests that psychological resilience is very similar to coping mechanisms and mental toughness, the key difference being, psychological resilience is dependent on the athlete’s ability to humbly accept their limitations and work with the talents that they have been blessed with; and continuing to refine such talents to be the best version of themselves that they can be (Ozan, Secer, 2022).

Generalization occurs in society as well as in elite athletes, how athletes generalize can affect their performance and mental well-being. Generalization, in the context of a study investigating how athletes process failures and successes, could be paraphrased as, the way athletes project future failures or successes; based on a single event of success or failure. An
athlete that generalizes in a positive fashion will take a single failure or success and disassociate it from other aspects of their life and use it as a tool for future success; despite the outcome. An athlete that generalizes in a negative fashion will attribute a single event to every aspect of their life, and that event will follow them into all of their future endeavors. This is only as good as long as performance is good, but even then, simple performance mistakes such as missing a shot in a soccer or a basketball game will impact an athlete’s self-esteem and future performance negatively (Van Lier, Raes, 2016).

It is important that an athlete does not generalize negatively, as perfection in life and sports is unobtainable, athletes need to process failure and success in a positive way to prevent mental health issues. Negative generalization could be described as a symptom of underlying depression that is dormant and now becoming active, or has been active but has gone undiagnosed by an individual or others. Generally, a dysphoric athlete will negatively generalize and internalize an event such as performing poorly in a game, and attribute their poor performance to who they are as a person, in consequence; plummeting their self-esteem. Athletes that can positively generalize events, such as performing poorly in a game or being yelled at by a coach will not associate it with their self-worth and will have healthier mindsets and greater life satisfaction (Van Lier, Raes, 2016).

Quality and an adequate amount of sleep, emotional support through: self-care, clinical settings, external influences, and goal setting have been key themes across multiple studies; in promoting and optimizing the well-being of athletes.

By itself, quality sleep and an adequate amount of it, have proven to reduce symptoms of anxiety and depression, as well as buffer athletes from academic stress (Benjamin, Curtis, Huggins, Sekiguchi, Jain, McFadden, Casa, 2020).
Athletes have been shown to benefit from external emotional support from: friends, teammates, family, athletic trainers, coaches, physicians, and family; especially during periods of injury (Wayment, Huffman, 2019).

Emotional need thwarting in relation to attachment theory in psychology has been applied to athletes. Athletes with insecure attachment styles such as anxious ambivalent and avoidant will react differently to the same methods of coaching styles and treatment from teammates. Being sensitive to athletes with such needs could prove to mitigate symptoms of depression, or depression altogether (Felton, Jowett, 2015).

The suggestion of well-being therapy being applied to athletes is a useful one, as it has been successful in both clinical and non-clinical settings; but has not been fully adopted by sport psychology and athletics (Thompson, Schary, 2021). The notion of motivation and how an athlete sets their goals and achieves them is also valid for treating depression (Ntoumanis, Healy, Sedikides, Duda, Stewart, Smith, Bond, 2013). Goals that are not considered internally autonomous for athletes, such as being coerced to perform for the sake of survival, whether it be through financial matters or for athletic identity, have shown to be harmful to an athlete’s mental health (Ntoumanis, Healy, Sedikides, Duda, Stewart, Smith, Bond, 2013). Autonomous motives in goal setting for athletes will trigger greater intangibles of handling failure and success, and produce greater life satisfaction than goal setting based outside of autonomous motivations (Ntoumanis, Healy, Sedikides, Duda, Stewart, Smith, Bond, 2013).

Aberrative treatments for depression in research include religion and surfing. NFL players who attended religious services reported better overall health and mental well-being, specifically due to social bonds formed through religious functions. Religious services especially helped NFL players’ well-being if they lacked strong social bonds before attending religious
services. NFL players with strong social bonds before attending religious service were not affected as positively as NFL players with weak or no social bonds before attending religious service. NFL players that did not form strong social bonds at religious services still obtained positive health benefits from religious services (Cupery et al., 2021). Surfer’s Healing is a private, nonprofit organization that was formed to act as therapy for autistic children. This nonprofit organization has been described by former participants as something that had brought them tranquility and relief from their day-to-day struggles in an unprecedented fashion. Physical activity, including surfing, is proven to produce dopamine which can be associated with reduced symptoms of depression and anxiety. Although not a direct solution, surfing could prove to act as a treatment method for athletes suffering from depression or symptoms of depression (Levin, Taylor, 2011).

Need For Scoping Review

A scoping review is needed for depression in athletes because there are knowledge gaps and obfuscations in relation to: causes, risk factors, and treatments in competitive athletes. Sport psychology was not considered a separate entity from traditional psychology for quite some time, it is estimated that the International Journal of Sport Psychology was established in 1970, and in succession; the Journal of Sport Psychology in 1979. Mental health awareness has recently become a media spotlight, specifically for athletes. Kerri Strug broke her ankle during the 1996 Olympic games on vault, she continued to perform in a crippled state, Team USA Women’s Gymnastics won gold during the 1996 Olympic games. In contrast, Naomi Osaka withdrew from the French Open in 2021 due to struggles with depression, and Simone Biles mid-competition from the 2021 Tokyo Olympics for mental health reasons (Asmelash, 2022).

The main benefit of conducting a scoping review on competitive athletes suffering from
depression will be the synthetization of evidence from credible sources. An ultimate cure for depression in competitive athletes may not be found immediately, but finding: factors, causes and treatments for depression will bring researchers closer to finding solutions; and will create awareness for: coaches, trainers, medical physicians, family members, and even athletes to optimize their environments and mentality. Scoping reviews work best for new topics because they have not been researched in depth. A scoping review will allow current and future researchers to formulate concrete conclusions on depression within competitive athletes (Levac et al., 2010; Peters et al., 2015).

The need for a scoping review resides in its specificity in depression. To the author’s best knowledge, scoping reviews located only discussed general mental health in athletes, they did not address depression specifically. Or of the few that did address depression, would only address symptoms or very specific aspects of depression such as athletic identity (Tahtinen, Shelley, Morris, 2021; Kuettel, Larsen, 2019; Renton, Peterson, Kennedy, 2020; Kegalaers et al., 2022).

Depending on the source, depression will typically rank between 1st to 5th among the leading mental illnesses in the United States. Athletes have already been shown to not seek help or express if they are having any problems whatsoever; a scoping review could prove to be useful in spreading awareness for athletes struggling with depression. Depression and Anxiety Disorders often go hand in hand, although different; anxiety disorders are commonly listed as the leading mental illnesses in many sources. Synthesizing evidence dealing with depression in athletes could translate to helping athletes with anxiety disorders.

This scoping review synthesized evidence related to: causes, factors, and treatments of depression; both implicit and explicit. During the research, the author noticed that there was a
lack of research pertaining to female athletes, this research included both male and female examples to the best of its ability. The author noticed during the research that many articles addressed causes and symptoms of depression but rarely were articles primed to advocate or discuss effective treatment methods for athletes. Many articles focused on measuring variables and numerical conclusions. Researching effective treatment methods for depression could be risky as treatments are not one size fits all, each athlete is different and has different needs. An effective treatment plan could only prove to be useful to less than 1% of athletes, and could prove to be a waste of resources in the world of academia. However, if an athlete’s mental health needs are placed above fiscal resources, deadlines, and attractive headlines; trials for effective treatments for athletes suffering from depression could prove to be fiscally rewarding and noble. Most of all, human life is invaluable, the satisfaction of finding a solution to one of the most debilitating mental illnesses in both athletes and society is incomparable, and will affect every future athlete and individual in the most meaningful way possible.
METHODODOLOGY

Methods

The general framework of conducting a scoping review is to: formulate a research question or questions, set aside a specific amount of time to conduct said research, formulate exclusion and inclusion criteria, and collect data from existing research. An appraisal, risk of bias assessment, and formal synthesis of data are optional in a scoping review, compared to a systematic review or meta-analysis. However, if they are included, they make the scoping review more pragmatic (Levac et al., 2010; Peters et al., 2015). The author decided to do a formal synthesis of data, which will be evident in the results section, as well as include charts. In consequence, future academia will be able to formulate conclusions about causes, risks, and treatment for depression in competitive athletes. This way, future researchers can understand the current state of the literature and apply findings in future research. A risk of bias assessment and critical appraisal was not conducted.

The questions of research formulated and addressed by the author were: what are the causes or risk factors of depression in competitive athletes and what are the treatments or potential treatments for depression in competitive athletes? The time set aside to complete the scoping review started in February of 2023 and ended in July of 2023. Data was collected through the use of EBSCOhost, provided by the University of Southern Illinois, Carbondale.

The inclusion criteria consisted of the following:

- Data accessed must be between the years of 2010 and 2023
- Data will include both male and female competitive athletes
- Data will include active master’s athletes, on the condition they are still
competitive athletes

- Data referring to past experiences of retired athletes will be used, on the condition that their experiences are referring to when they were active competitive athletes or future findings relating to their competitive years
- Data will be peer-reviewed as distinguished by EBSCOhost
- Data will include empirical text
- Data will only include full-text research and articles
- Data will specifically refer or relate to depression in competitive athletes
- Data will clearly illustrate potential causes, factors, treatments, or potential treatment pertaining to competitive athletes and depression
- Data will only use sports recognized by large portions of the world to accent valid, immediate, and effective applications (baseball, basketball, etc.)
- Data will be sourced from academic journals
- Data will be in English

The exclusion criteria consisted of the following:

- Will not include recreational athletes
- Will not include kids or youth, but adolescents are included (ages 10 to 19)
- Will not include non-peer-reviewed articles
- Will not include data from non-academic journals
- Will not include data that is not published in English or does not have an English version

Literature Review: Data Collection and Chart Fabrication

The Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols
(PRISMA-P) guidelines for a scoping review were followed (Tricco, Lillie, Zarin, O'Brien, Colquhoun, Levac, et al., 2018). The PRISMA flow diagram for scoping reviews, developed by Arksey and O’Malley, was adapted for this scoping review. The steps for conducting this scoping review were compliant with PRISMA Scoping Reviews Checklist (Tricco, Lillie, Zarin, O’Brien, Colquhoun, Levac, et al., 2018).

The author started by affirming the protocol and registration of the articles. The author utilized EBSCOhost provided by Morris Library, affiliated with the University of Southern Illinois, Carbondale, to ensure all the databases searched would contain full-text articles accessible to the University of Southern Illinois, Carbondale.

Eligibility criteria were confined to the parameters created from the inclusion and exclusion criteria. All articles were obtained from an accredited academic journal, via filter option on EBSCOhost. Articles were used from accredited journals such as the Journal of Clinical Sport Psychology or the British Journal of Sports Medicine for small examples, to ensure that the articles that the author was using for data synthetization were of high quality. The inclusion and exclusion criteria are geared towards the research paper answering the research questions efficiently, and the journals’ criteria are geared towards ensuring the findings of the research are legitimate, thorough, detailed, etc. Using research articles from journals increases the likelihood that the author’s findings are legitimate findings that will help future researchers.

All articles used were in the English language or translated into the English language, as English is the recognized language in the United States of America, another language would not be useful in an immediate and direct application for a research paper in the Department of Kinesiology at the University of Southern Illinois, Carbondale. All dates for references and citations of the articles used are at the time of publication in their respective journal, not the
original date of publishment; as all articles were found within academic journals. The years 2010 and 2023 were selected to ensure articles and findings addressing the research questions were current and relevant.

All data was collected during the months of February and April, ending around April 27th, 2023. No contact was made with any of the authors in the references or citations, as the author did not utilize direct quotations from any of the sources. Charts were formed at the same time as data collection, when data collection ceased; the tables were finished.

The keywords used for searching in EBSCOhost were depression AND athletes. After the keywords were searched, filters were set. The filters that were set were: full-text only, 2010 to 2023, peer-reviewed and academic journals. The databases that were searched through EBSCOhost were: HealthSource Nursing Academic Edition, MEDLINE, Professional Development Collection, PubMed, SocINDEX, and SPORTDiscus. The same keywords of depression AND athletes were also searched in google scholar, however; the use of the articles found risked invalidating PRISMA criteria, so such articles were not utilized in regards to PRISMA data collection criteria. After filters and keywords were applied, hours of manual searching through pages of databases were spent, and articles were seemingly found to meet PRISMA criteria.

6,307 articles did not pertain directly to depression in competitive athletes. Most of the time, the article would talk about mental health issues in athletes, but never mention depression or symptoms of depression, excluding them from the scoping review. 3,048 articles addressed depression in athletes, but the athletes mentioned were often a mix of competitive and recreational athletes, excluding them from the scoping review. Lastly, 3,138 articles were completely irrelevant or included youth. Irrelevant meaning not relating to depression are
athletes at all, the algorithm in EBSCOhost included articles not pertaining to the research questions. Youth was defined as below the age of 10, or otherwise not an adolescent. After articles were assessed through the basic exclusion and inclusion criteria, only 43 articles remained for final assessment.

Thirteen articles were excluded from the 43 remaining articles. After rigorous analysis, 1 article was deemed to have an agenda in the way data was portrayed and explained, including the sources used to back the data. This article was excluded because bias was evidently present. 3 articles, while not directly referring to youth, used youth in their data panels and evidence; and were excluded. 5 articles seemed to address depression or treatment directly, however; after heavy scrutiny, depression and treatments were mentioned only in a general sense. No reliable or helpful data was presented with respect to depression and or treatment methods, these articles were excluded. 3 articles included information about athletes but ultimately did not address competitive athletes in an explicit manner, there were only small excerpts pertaining to athletes; these articles were excluded. Lastly, there was 1 article with an extremely small sample size, and it was not a qualitative study. The findings seemed to be farfetched due to the small sample size and the nature of the research question, this article was excluded. 30 articles were deemed eligible for use after the final eligibility assessment, meeting PRISMA criteria.

The author charted all the data in the PRISMA flowchart, action plan, and factors for depression chart independently; no results were formally synthesized in their charts. There were too many findings to synthesize formally within every article; the author paraphrased the findings in the action plan and factors for depression charts, so that a reader could have a general idea of what to expect in the article if they were to read it. The author was inspired to adapt their action plan chart based on a scoping review conducted by Ana Monteiro Pereira, Julio A. Costa,
Evert Verhagen, Pedro Figueiredo, and Joao Brito, titled Associations Between Esports Participation and Health: A Scoping Review. The PRISMA flowchart was adapted from the Arksey and O’Malley PRISMA flow diagram for scoping reviews. The three charts were made using Lucidchart, Lucidspark, and Microsoft Word programs.

The PRISMA flowchart consisted of three sections: Identification, Screening, and Inclusion (Refer to Figure 1). Identification consisted simply of collecting data that might answer or pertain to the research questions. Screening consisted of quality abstracts, brief reviews of the articles themselves, etc. to determine if they would be adequate candidates for final inclusion. After the articles were initially screened, the remaining articles the author had were thoroughly annotated to ensure they met PRISMA criteria. The author printed all 43 articles for in-person copies, highlighting and annotating factors that would qualify or disqualify them from the PRISMA eligibility criteria. The inclusion section consisted of the articles that met PRISMA criteria and were included in this scoping review.

There was no specific method by which data was gathered. As this is a scoping review, the author’s aim was to collect data from all viewpoints and perspectives, in hopes of answering the research questions in the broadest ways possible. In addition, it inspires future researchers to think of perspectives that otherwise might seem foreign or irrelevant without legitimate findings. No assumptions or simplifications were made in data gathering or findings to the author’s knowledge.
Figure 1 | Scoping Review Framework (Adapted from Arksey and O’Malley, 2005)
<table>
<thead>
<tr>
<th>Main Findings</th>
<th>Table 1</th>
<th>Action Plan (Adapted from A. Monteiro Pereria et al., 2022)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Aims</td>
<td>Cross-Sectional Study</td>
<td>Examines the factors that influence how athletes utilize mental health services.</td>
</tr>
<tr>
<td>Date</td>
<td>2020</td>
<td>2020</td>
</tr>
<tr>
<td>Title</td>
<td>Mental Health and Self-Esteem of Active Athletes</td>
<td>A comprehensive examination of factors influencing the psychological well-being of athletic and non-athletic individuals.</td>
</tr>
<tr>
<td>Title</td>
<td>When the Going Gets Tough: The “Why” of Coal Striving</td>
<td>Social Support from the Athletic Trainer: A Systematic Review</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

A comprehensive examination of factors influencing the psychological well-being of athletic and non-athletic individuals.

Steroid use in athletes is associated with mood, anxiety, multiple disorders, and associated mental illnesses.

Adolescents who are injured may experience increased cortisol levels in athletes, and reported feeling more anxious and decreased their psychological well-being.
<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Study Aims</th>
<th>Design</th>
<th>Population + Sample Size</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconstructing Athletic Identity: College Athletes and Sport Retirement</td>
<td>2018</td>
<td>Examines how college athletes transition and cope with no longer being involved in NCAA athletics.</td>
<td>Qualitative Study</td>
<td>Population: Division I Athletes \ n = 15</td>
<td>Athletes who prepare for a career outside of sport have a smoother transition when facing retirement. They’re less likely to struggle with depression, anxiety, etc.</td>
</tr>
<tr>
<td>Gratitude and Adolescent Athletes’ Well-Being: The Multiple Mediating Roles of Perceived Social Support from Coaches and Teammates</td>
<td>2012</td>
<td>Examines how gratitude contributes to an athlete’s overall well-being.</td>
<td>Cross-Sectional Study</td>
<td>Population: Taiwanese High School Athletes \ n = 291 \ 192 Male \ 99 Female</td>
<td>As positive psychology suggests, gratitude is a factor that can help athletes perceive positive social support and enhance overall well-being.</td>
</tr>
<tr>
<td>Why Grateful Adolescent Athletes are More Satisfied with their Life: The Mediating Role of Perceived Team Cohesion</td>
<td>2014</td>
<td>Investigate the relationship between an adolescent athlete’s gratitude and life satisfaction.</td>
<td>Cross-Sectional Study</td>
<td>Population: Taiwanese High School Athletes \ n = 300 \ 197 Male \ 103 Female</td>
<td>The model and findings support the notion that gratitude improves perceived team cohesion, and in consequence, promotes life satisfaction.</td>
</tr>
<tr>
<td>Well-Being Therapy: An Approach to Increase Athlete Well-Being and Performance</td>
<td>2021</td>
<td>Examines if Well-being Therapy is an effective technique for increasing well-being and performance among athletes.</td>
<td>Literature Review</td>
<td>N/A Well-being Therapy research doesn’t exist in the context of athletes</td>
<td>In the clinical setting, Well-being Therapy is effective, research should be directed towards the relationship of Well-being Therapy and athletes.</td>
</tr>
<tr>
<td>The Prevalence of Depressive and Anxiety Symptoms in Student-Athletes and the Relationship With Resilience and Help-Seeking Behavior</td>
<td>2019</td>
<td>Investigate the occurrence of symptoms of depression and anxiety within student-athletes, and analyze the protective factors that may combat ill mental health.</td>
<td>Cross-Sectional Study</td>
<td>Population: Irish Athletes \ n = 185 \ 117 Male \ 65 Female</td>
<td>Elite student-athletes are at higher risk for symptoms of anxiety and depression, compared to student-athletes. Informal help-seeking is rampant among athletes, while seeking professional help tends to be neglected.</td>
</tr>
<tr>
<td>Title</td>
<td>Date</td>
<td>Study Aims</td>
<td>Design</td>
<td>Population + Sample Size</td>
<td>Main Findings</td>
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<tr>
<td>Generalization in Sport: The Impact of How Athletes Process Their Failures and Successes</td>
<td>2016</td>
<td>Focuses on answering the “why” rather than the “how” in regards to athletes processing their failures and successes.</td>
<td>Cross-Sectional Study</td>
<td>Population: Belgian Athletes n = 798</td>
<td>How an athlete processes success will influence their mental health. An abstract processing style with functional internal, controllable and stable attributions can really boost the belief in a positive outcome of future performances and may enhance self-no.</td>
</tr>
</tbody>
</table>
| Investigation of The Relationship Between Athletes’ Psychological Resilience, Emotional Reactivity, Psychological Maladjustment and Trait Anger Control | 2022 | Examines the relationship between athletes’ psychological resilience, emotional reactivity, psychological maladjustment and trait anger levels and the mediating role of psychological resilience in this relationship. | Cross-Sectional Study | Population: Turkish Athletes n = 972  
298 Female  
674 Male                                                  | Resilience will curb or mediate the negative pressure of emotional reactivity such as depression. |
| Elite Athletes Coping With Depression: A Qualitative Study           | 2019 | Examines coping strategies utilized by elite athletes facing clinical depression. | Qualitative Study    | Population: Elite Athletes n = 4  
1 Female  
3 Male                                                  | Athletes should use the coping skills they’ve learned in sports, and implement them in their daily life, as they tend to be separate. Negative stigma related to mental health should be decreased, to encourage athletes to seek professional help. |
52 Female  
33 Male                                                  | Olympians suffered from uncertainty due to the delay of the Olympic games. Despite such suffering, athletes rarely sought professional help. |
| Depression, Anxiety and Coping in Surfers                            | 2011 | To investigate if the meditative experience and exercise relished by surfers endorses fewer symptoms of anxiety and depression. | Cross-Sectional Study | Population: Surfers n = 100  
74 Male  
26 Female                                                  | Surfers endorsed significantly lower levels of depressive and anxious symptoms. Surfers utilized emotion based coping significantly less than the general population average. |

Table 1: Action Plan (Adapted from A. Monteiro Pereria et al., 2022)
<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
<th>Study Aims</th>
<th>Design</th>
<th>Population + Sample Size</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Athlete's Paradox: Adaptable Depression</td>
<td>2022</td>
<td>To investigate the proposal of athlete’s depressive symptoms may be different from the general population in etiology, in terms of depressive disorder.</td>
<td>Literature Review</td>
<td>N/A</td>
<td>Elite athletes have adapted a new serotonin baseline compared to non-athletes. Elite athletes’ reaction to prolonged stress is blunted. Elite athletes don’t exhibit the same symptoms of depression compared to non-athletes, but they suffer equally as much.</td>
</tr>
<tr>
<td>Athletic identity and self-esteem among active and retired Paralympic athletes</td>
<td>2018</td>
<td>To provide more insight on the transition out of elite sport, by assessing and comparing the extent of athletic identity and self-esteem, among two groups of Paralympic athletes</td>
<td>Cross-Sectional Study</td>
<td>Population: Paralympic Athletes</td>
<td>Retired elite athletes had lower athletic identity than active elite athletes, but had similar levels of self-esteem. Elite athletes that involuntarily retired had significantly lower levels of self-esteem than elite athletes who retired voluntarily.</td>
</tr>
<tr>
<td>Positive Effects of Religion and Social Ties on the Health of Former NFL Athletes</td>
<td>2021</td>
<td>To explore the relationship between religious service attendance, social ties, and health among former NFL players.</td>
<td>Cross-Sectional Study</td>
<td>Population: Former NFL Athletes</td>
<td>Frequent religious service attendance was associated with better self-rated health, and especially helpful for individuals lacking strong social ties.</td>
</tr>
<tr>
<td>The impact of a violent community on mental health and the benefits of a sport program for social development</td>
<td>2021</td>
<td>Evaluate the impact of a violent environment on mental health and the impact of a sport for social development program on quality of life, etc.</td>
<td>Randomized Controlled Trial</td>
<td>Population: Brazilian Athletes  n = 40</td>
<td>Causality couldn’t be determined in many instances, social sports-based programs can: promote welfare in the community, higher quality of life, and positive effect.</td>
</tr>
<tr>
<td>Susceptibility for Depression in Current and Retired Student Athletes</td>
<td>2013</td>
<td>To investigate if lifestyle changes and loss of athletic and or personal identity, would put former college athletes at an increased risk for depression.</td>
<td>Cross-Sectional Study</td>
<td>Population: Former and Current Division I Athletes n = 280</td>
<td>Many factors potentially correlate with depression, however, depression levels need further comparison to former athletes. Loss of athletic identity and social support seemed to not correlate with large enough strain to increase levels of depression.</td>
</tr>
<tr>
<td>Title</td>
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<tr>
<td>Health-Related Quality of Life in Former National Collegiate Athletic Association Division I Collegiate Athletes Compared With Non-collegiate Athletes: A 5-Year Follow-Up</td>
<td>2021</td>
<td>Determine the current health-related quality of life of former National Collegiate Athletic Association Division I athletes compared with non-collegiate athletes 5 years after an initial assessment.</td>
<td>Cohort Study</td>
<td>Population: Division I Athletes n = 362 193 Responses 169 Surveys</td>
<td>Former Division I athletes experienced health declines in health-related quality of life compared to college athletes that didn't play for the university team. Former Division I athletes were more limited in daily physical activity, exerted less, weighed more, and had increased prevalence of osteoarthritis. Elite athlete status at an even higher risk for reduced health-related quality of life.</td>
</tr>
<tr>
<td>Predictors and Prevalence of Postconcussion Depression Symptoms in Collegiate Athletes</td>
<td>2015</td>
<td>Describe the prevalence of depressive symptoms in a collegiate athlete sample at baseline and post-concussion, compare these levels of symptoms and change in symptoms with those of a control group with no reported concussions in the past year, and examine the baseline predictors for Postconcussion Depression Symptoms.</td>
<td>Case-Control Study</td>
<td>Population: Division I Athletes n = 84</td>
<td>Many baseline symptoms were used as successful predictors for depression; many athletes showed an increase in depression after a concussion.</td>
</tr>
<tr>
<td>Nonsuicidal self-injury, suicidal ideation, and suicide attempt from collegiate athletes: Findings from the National College Health Assessment</td>
<td>2019</td>
<td>To evaluate whether collegiate athletes and non-athlete college students differ in non-suicidal injury, suicidal ideation, suicide attempt, and help-seeking behaviors.</td>
<td>Cross-Sectional Study</td>
<td>Population: Collegiate Student Athletes n = 165,210</td>
<td>A strain or conflict in a social relationship may translate to a strain on one's identity - a phenomenon potentially underlying the findings is that social difficulties are more closely associated with suicide attempt among student-athletes than nonathletes who may benefit from wider-ranging social networks.</td>
</tr>
<tr>
<td>Sleep Dysfunction and Mood in Collegiate Soccer Athletes</td>
<td>2020</td>
<td>To see if sleep dysfunction will be related to poor mood and increased anxiety, and to see the variety of differences between male and female athletes.</td>
<td>Prospective Cohort Study</td>
<td>Population: Division I Athletes n = 230 110 Male 120 Female</td>
<td>Sleep dysfunction coincides with many mental health issues such as anxiety and depression. Females hold the greatest risk of reporting sleep dysfunction.</td>
</tr>
<tr>
<td>Sport Specialization, Club Sport Participation, Quality of Life, and Injury History Among High School Athletes</td>
<td>2019</td>
<td>Investigate patient-reported quality-of-life and injury/history measures among adolescent athletes at different sport-specialization levels, and to compare the findings to adolescents who did not participate in sports.</td>
<td>Cross-Sectional Study</td>
<td>Population: High School Athletes n = 97 61 Male 36 Female</td>
<td>The level of sport specialization was not associated with differences in overall quality-of-life, etc. Musculoskeletal injuries were more common in those that played sports, also resulting in substantial time loss.</td>
</tr>
<tr>
<td>Title</td>
<td>Date</td>
<td>Study Aims</td>
<td>Design</td>
<td>Population + Sample Size</td>
<td>Main Findings</td>
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</tbody>
</table>
| On understanding the role of need thwarting in the association between athlete and well-being | 2015 | Examine the mediating role of basic psychological need thwarting between perceptions of athlete attachment to the coach and indexes of athlete well-being.                                                   | Cross-Sectional Study | British Athletes  
  n = 241  
  154 Female  
  87 Male | Anxiously attached athletes desire intimacy but can feel overwhelmed by it, while avoidantly attached athletes desire independence but can feel rejected and neglected in both coaching and sporting contexts. |
| The Relationship between Personality Traits, the 5HTT Polymorphisms, and the Occurrence of Anxiety and Depressive Symptoms in Elite Athletes | 2016 | Determine the relationship between personality, the serotonin transporter polymorphisms and the occurrence of anxiety and depressive symptoms in elite athletes.                                         | Cross-Sectional Study | Population: Elite Italian Athletes  
  n = 133 Men  
  Women excluded due to small sample size | 5-HTTLPR s/s genotype is associated with symptoms of anxiety and depression in this study.                                                                                                                                               |
| The relationship between vitamin D status and depression in a tactical athlete population | 2019 | To determine if vitamin D status was associated with depression diagnosis and if geographic location mattered.                                                                                           | Cohort Study       | Population: American Soldiers  
  n = 381,818 | Vitamin D deficiency significantly increased the likelihood of diagnosed depression in service members.                                                                                                                                  |
| Psychosocial experiences of concussed collegiate athletes: The role of emotional support in the recovery process | 2019 | To seek understanding from whom concussed football players seek and receive emotional support, and whether this support is associated with injury perceptions.                                         | Cross-Sectional Study | Population: Division I American Football Players  
  n = 26 | Athletes did not see concussions as severe, and even saw them as a normal consequence of football. Athletes desired the most support from: parents, athletic trainers, and team physicians; and the least support from coaches. |
| Patterns of health behaviors affecting mental health in collegiate athletes | 2021 | Examine the association of multiple health behaviors to mental health functioning in male and female collegiate athletes.                                                                                 | Cross-Sectional Study | Population: Division I Athletes  
  n = 183 | Diet, sleep, exercise, alcohol use, social connectedness, etc; may circumvent an athlete’s need to address their mental health.                                                                                                                  |
### Table 2 | Causes, Factors, Treatments, and Potential Treatments Pertaining to Depression

**Factors Influencing Depression and Strategies for Coping with Depression (Effective Treatment)**

<table>
<thead>
<tr>
<th>Study (Author Names, Year)</th>
<th>Causes or Factors Influencing Depression</th>
<th>Treatments or Potential Treatments for Depression</th>
</tr>
</thead>
</table>
| Mental Health and Self-Esteem of Active Athletes (Lukanovic, Babic, Katic, Zovko, Martinac, Pavlovic, Babic, 2020) | • Lack of Physical Activity  
• Undeveloped Moral Characteristics (Determination, Honesty, Perseverance, etc.)  
• Poor Self Esteem and Motivation | • Sports Provide Opportunities to Increase Interpersonal Skills, Emotional Regulation, etc.  
• Sports Reduce Anxiety and Depression and are a Significant Predictor of Addiction Prevention |
| A comprehensive examination of factors impacting collegiate athletes' utilization of psychological assessment and intervention services (Donohue, Gavrilova, Danlag, Perry, Kuhn, Allen, Benning, 2020) | • Athletes are not Seeking or Utilizing Professional Help  
• Athletes are Less Accepting of Psychological Services due to the Perception of Weakness  
• Athletes Report Positive Associations with Sport Psychological Services, in Contrast to a Negative Perception of Clinical Psychological Services | • Support from: Coaches, Athletic Trainers, Family Members, Peers, and Teammates Towards Mental Health Services  
• Sport Focused Psychological Interventions Promote Positive Feelings Towards Seeking Professional Help |
| Anabolic-androgenic Steroid use and Psychopathology in Athletes. A Systematic Review (Piacentino, Kotzalidis, Casale, Aromatario, Pomara, Girardi, Sani, 2015) | • Anabolic-Androgenic Steroid Use is Linked with Depressive Symptoms in Users  
• Persistence of Steroid Use Despite Adverse Effects  
• Suicidal Ideation Linked with Substance Abuse | • Cease Usage of Anabolic-Androgenic Steroid Use  
• Resolve Mental Illnesses, Mood, and or Anxiety Orders that Might Lead to Steroid Use Such as Muscle Dysmorphia |
| Social Support from the Athletic Trainer and Symptoms of Depression and Anxiety at Return to Play (Yang, Schaefer, Zhang, Covassin, Ding, Heiden, | • Lack of Social Support During an Injury  
• Lack of Emotional Support During an Injury  
• Clinical Psychologists May be Unable to Fulfill | • Social Support from Athletic Trainers is Considered Reliable to Athletes  
• An Increase in Support from Coaches and Teammates could |
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<tr>
<th>2014)</th>
<th>an Athlete’s Needs</th>
<th>Increase an Athlete’s Wellbeing</th>
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<tr>
<td><strong>When the Going Gets Tough: The &quot;Why&quot; of Goal Striving Matters</strong> (Ntoumanis, Healy, Sedikides, Duda, Stewart, Smith, Bond, 2013)</td>
<td>• Motives Towards Goals that aren’t Autonomous &lt;br&gt;• Goals that Aren’t Difficult or Stimulating</td>
<td>• Autonomous Goal Motives &lt;br&gt;• Appropriate Goal Difficulty and Efficacy</td>
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<tr>
<td><strong>Reconstructing Athletic Identity: College Athletes and Sport Retirement</strong> (Menke, Germany, 2018)</td>
<td>• Lack of Identity Outside of Athletic Identity &lt;br&gt;• Onset of Forced Retirement</td>
<td>• Prepare Athletes for the World and Career Beyond their Sport</td>
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<td><strong>Gratitude and Adolescent Athletes' Well-Being: The Multiple Mediating Roles of Perceived Social Support from Coaches and Teammates</strong> (Chen 2012)</td>
<td>• Lack of Awareness of Positive Psychology in Sport Psychology &lt;br&gt;• Stress and Pressure from Sport &lt;br&gt;• Lack of Gratitude</td>
<td>• With Strong Feelings of Gratitude, Athletes are More Likely to be Receptive Towards Positive Psychology, Social Support, Have Increased Well-being, Increased Life Satisfaction, etc.</td>
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<td><strong>Why Grateful Adolescent Athletes are More Satisfied with their Life: The Mediating Role of Perceived Team Cohesion</strong> (Chen, Kee, Chen, 2014)</td>
<td>• Lack of Team Cohesion &lt;br&gt;• Athletes Pushed Beyond Their Limits Leading to Burnout and Depression &lt;br&gt;• Low Levels of Gratitude</td>
<td>• Gratitude has Direct Evidence with Increased Life Satisfaction &lt;br&gt;• Team Cohesion can Mediate Lower Levels of Gratitude &lt;br&gt;• High Levels of Gratitude Improve Perceived Levels of Team Cohesion</td>
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<td><strong>Well-Being Therapy: An Approach to Increase Athlete Well-Being and Performance</strong> (Thompson, Schary, 2021)</td>
<td>• Improper Applications of Hedonic and Eudaimonic Visions of Well-being &lt;br&gt;• Lack of Well-Being Therapy in the Athletic World, Despite Success in Clinical and Non-Clinical Populations</td>
<td>• Adaptation and Implementation of Well-Being Therapy in the Athletic World</td>
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<td>Title</td>
<td>Lack of Social Connectedness</td>
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<td>The Prevalence of Depressive and Anxiety Symptoms in Student-Athletes and the Relationship with Resilience and Help-Seeking Behavior (Drew, Matthews, 2019)</td>
<td>• Low Self-Esteem</td>
<td>• Willingness and Ability to Engage and Ask for Help</td>
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<td>• Stress of College and Things Associated</td>
<td>• Self-Care Behavior</td>
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<td>• Fear of Failure</td>
<td>• Friends and Family May Act as Buffers</td>
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<td>• Loss of Athletic Identity</td>
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<td>Generalization in Sport: The Impact of How Athletes Process Their Failures and Successes (Van Lier, Raes, 2016)</td>
<td>• Worry and Rumination</td>
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<td>• Poor or Weak Emotional Recovery Skills</td>
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<td>Investigation of The Relationship Between Athletes’ Psychological Resilience, Emotional Reactivity, Psychological Resilience, Emotional Reactivity, Psychological Maladjustment and Trait Anger Control (Ozan, Secer, 2022)</td>
<td>• Pessimistic Thinking</td>
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<td>• Wild Emotional Reactivity</td>
<td>• Governed Emotional Reactivity</td>
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<td>Elite Athletes Coping with Depression: A Qualitative Study (Lebrun, MacNamara, Collins, Rodgers, 2019)</td>
<td>• Substance Abuse</td>
<td>• Positive Thinking</td>
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<td>• Stress of Life</td>
<td>• Engaging in Pleasant or Neutral Activities</td>
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<td>Depressive symptoms among Olympic athletes during the Covid-19 pandemic (Lambert, Schuetz, Rice, Rosemary, Purcell, Stoll, Trajdos, Ritzmann, Bohm, Walz, 2022)</td>
<td>• Loss of Motivation</td>
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<td>• Stress of Life</td>
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<td>The Athlete’s Paradox: Adaptable Depression (Forys, Tokuhama-</td>
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<td>Athletic identity and self-esteem among active and retired Paralympic athletes (Marin-Urquiza, Pedro Ferreira, Van Biesen, 2018)</td>
<td>• Alcohol Abuse</td>
<td>• Religious Participation in Various Forms</td>
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<td>• Strong Social Bonds, Ties, and Connections</td>
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<td>Positive Effects of Religion and Social Ties on the Health of Former NFL Athletes (Cupery, Bush, Turner, Sonnega, Rosales, Vissa, Whitfield, Jackson, Weir, 2021)</td>
<td>• Weak Social Bonds, Ties, and Connections</td>
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<td>The impact of a violent community on mental health and the benefits of a sport program for social development (Fernandes Jr., Marra da Silva Jr., Rego Ramos, Gama, Lobo, Guerra Leal Souza, Arruda Sanchez, 2021)</td>
<td>• Witnessing, Living, and Experiencing Extreme Violence</td>
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<td>Susceptibility for Depression in Current and Retired Student Athletes (Weigand, Cohen, Merenstein, 2013)</td>
<td>• End of Athletic Career</td>
<td>• Adequate Training</td>
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<td>• Stresses Associated with Athletic Career</td>
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<td>• Lack of Exercise After Athletic Career Ends</td>
<td>• Reduced Schoolwork</td>
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<td>• Reduced Pressure to Perform</td>
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<td>Health-Related Quality of Life in Former National Collegiate Athletic Association Division I Collegiate Athletes Compared With Noncollegiate Athletes: A 5-Year Follow-Up (Simon, Lorence, Docherty, 2021)</td>
<td>• Inactive Lifestyle</td>
<td>• Sustainable Plans for Athletes for Lifelong Health and Wellbeing After Sport</td>
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<td>• Injury and Lifelong Debilitation Stemming from Sport or Injury</td>
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<td>Predictors and Prevalence of</td>
<td>• Concussions</td>
<td>• Recognition of Concussive and Traumatic Brain</td>
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| Topic                                                                 | Injuries                                                                 | Traumatic Brain Injury
|----------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------|
| Postconcussion Depression Symptoms in Collegiate Athletes (Vargas,  | Lack of Meaningful Relationships, Weak Social Network, Lack of Sense of Belonging, Binge Drinking, Romantic Breakup | Symptoms to Mitigate Further Damage
<p>| Rabinowitz, Meyer, Arnett, 2015)                                      |                                                                          | Willingness to not Trivialize Concussions and Symptoms of Concussions from Athletes |
| Sleep Dysfunction and Mood in Collegiate Soccer Athletes (Benjamin, Curtis, Huggins, Sekiguchi, Jain, McFadden, Casa, 2020) | Travel Fatigue, Sleep Loss, Academic Demands, Poor Sleep Quality, Minimal Sleep Duration | High-Quality Sleep, Adequate Sleep Duration |
| Sport Specialization, Club Sport Participation, Quality of Life, and Injury History Among High School Athletes (Dahab, Potter, Provance, Albright, Howell, 2019) | Injury, Overtraining, Early Sport Specialization | Adequate Balance Between Everyday Life and Sport Life, Adequate Training Hours |
| On understanding the role of need thwarting in the association between athlete attachment and well/ill-being (Felton, Jowett, 2015) | Coaches, Teammates, and Family Members Fail to Meet an Athlete’s Needs in the Context of Attachment Theory and Psychological Needs Theory | Coaches, Teammates, and Family Members Satisfactorily Meet an Athlete’s Needs in the Context of Attachment Theory and Psychological Needs Theory |
| The Relationship between Personality Traits, the 5HTR Polymorphisms, and the Occurrence of Anxiety and Depressive Symptoms in Elite | Neuroticism, 5HTTLPR Genotypes | Professional Help |</p>
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<tr>
<th>Study</th>
<th>Key Findings</th>
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<td>Athletes (Petito, Altamura, Iuso, Padalino, Sessa, D'Andrea, Margaglione, Bellomo, 2016)</td>
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<td>The relationship between vitamin D status and depression in a tactical athlete population (Schaad, Bukhari, Brooks, Kocher, Barringer, 2019)</td>
<td>• Concussions · Lack of Emotional Support · Unwillingness to Report Symptoms of Concussions and Mental Health Issues Due to Negative Stigmas · Adequate Emotional Support · Professional Help</td>
</tr>
<tr>
<td>Psychosocial experiences of concussed collegiate athletes: The role of emotional support in the recovery process (Wayment, Huffman, 2019)</td>
<td>• Poor Diet · Minimal Sleep · Substance Use · Athletes Unwilling to Disclose Mental Health Issues · Implementation of Healthy Lifestyle Habits and Healthy Coping Mechanisms · Willingness to Seek Professional Help if Needed</td>
</tr>
<tr>
<td>Patterns of health behaviors affecting mental health in collegiate athletes (L. de Souza, Esopenko, Conway, Todaro, Buckman, 2021)</td>
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HEADING 4

RESULTS

Demographics of PRISMA Articles

Thirteen of the thirty (13/30 (43.33%)) articles targeted causes and or risk factors of depression in athletes. Six of the thirty (6/30 (20%)) articles addressed treatment in athletes. Lastly, eleven of the thirty (11/30 (36.67%)) articles covered both treatment and risk factors and the causes of depression in athletes.

Three clear trends of cited causes and or risk factors for depression were: overtraining, injury, and loss of athletic identity. Six of the thirty (6/30 (20%)) articles cited overtraining as a cause and or risk factor for depression. Ten of the thirty (10/30 (33.33%)) articles cited injury as a cause and or risk factor for depression. Six of the thirty (6/30 (20%)) articles cited loss of athletic identity as a cause and or risk factor for depression.

While not explicitly addressed in all articles, three trends of treatment in athletes were observed throughout the research, they are: emotional support, coping (formal/professional and informal), and intangibles (gratitude, psychological resilience, cognitive behavior therapy, etc.). Six of the thirty (6/30) (20%) cited emotional support as beneficial for athletes. Seven of the thirty (7/30 (23.33%)) articles mentioned effective and ineffective measures of coping, that benefit the athletes when used properly. Eight of the thirty (8/30 (26.67%)) articles addressed some type of intangible that successfully helped an athlete, either in the context of changing the cognitive functioning in an individual, or developing a virtuous trait such as gratitude or resilience.

Common Causes and or Risk Factors of Depression in Competitive Athletes

Potential causes and risk factors for depression were consistent in the literature, as well as
the acknowledgment that depression in athletes is a multifaceted problem, in causes and risk factors; as well as personality deviations within each athlete.


Depression levels compared in current Division I college athletes were higher than former college athletes (Weigand, et al. 2013). Speculation was that current college athletes suffered from: overtraining, pressure to perform, sleep deprivation, etc. in ways that former college athletes did not in their day-to-day lives. Loss of athletic identity and social support was shown to cause strain in an athlete, but may not induce depression by themselves in an athlete. Overtraining was shown to potentially cause enough strain to induce depression by itself in an athlete (Weigand, et al. 2013).

In regards to sport specialization in high school athletes, specializing in a sport at an early age was not associated with burnout or depression (Dahab, et al. 2019). However, high school athletes that specialized in a sport were more likely to report severe injuries linked to overtraining, a common risk factor for depression. Sport specialization significantly impacted
loss of time in high school athletes, as well as increased musculoskeletal injuries (Dahab, et al. 2019).

**Supplementary Risk Factors and or Causes of Depression in Competitive Athletes**

In one study, female student-athletes and male student-athletes reported depression at the same rate. However, when female student-athletes did report depression or symptoms of depression, they were more severe in nature compared to male student-athletes. In the same study, student-athletes that were classified as elite, reported significantly elevated levels of depressive symptoms than student-athletes classified as competitive. There were no significant differences in anxiety levels between elite student-athletes and competitive student-athletes (Drew, et al. 2019).

High emotional reactivity could be said to lead to psychological maladjustment and trait anger in athletes, deemed to impact athletic performance negatively. In addition, high emotional reactivity and the effects that come with it can raise an athlete’s risk for depression and anxiety. An athlete weak in their psychological resilience will be more likely to be highly emotionally reactive, have higher levels of psychological maladjustment and higher levels of trait anger (Ozan, et al. 2022).

Both male and female athletes report that poor sleep quantity and quality affect their performance and susceptibility to negative moods such as depression and or anxiety. Both male and female athletes demonstrated that poor sleep quality increased levels of: depression, anger, fatigue, and confusion. Males were reported to have higher levels of vigor than female athletes when deprived of sleep. Females hold the greatest risk of reporting sleep dysfunction as males were 55% less likely to report any problems pertaining to their sleep (Benjamin, et al. 2020).

Athletes that suffered from concussions did not perceive them as serious, but did perceive
concussions to affect their life negatively, as well as their future goals in their respective sport. Concussions themselves did not cause athletes direct distress, the consequences of concussions such as: losing a starting position, being isolated from their teammates, or future goals being affected were more drastic in the athlete’s eyes. An athlete’s depression levels decreased throughout the recovery process of the concussion (Wayment, et al., 2019).

Athletes that had a higher increase post-concussion did not have higher levels of depression pre-concussion that instigated high levels of depression post-concussion. Age and sex were not related to depression among concussed athletes. More athletes reported clinical depression post-concussion compared to the reported depression levels pre-concussion. Ironically, athletes who played organized sports for fewer years reported more post-concussion depression symptoms than athletes who played for more years in organized sports (Vargas, et al., 2015).

Athletes that processed success and failures in a concrete way rather than an abstract way were more likely to negatively generalize events, impacting their self-esteem negatively, impacting their susceptibility to depression negatively (Van Lier, et al., 2016).

Weak or low-quality social ties resulted in a poor quality of self-rated health in former NFL players. One’s ability to get out of the house was significantly correlated to self-rated health in former NFL players. If one was unable to get out of the house due to injury or poor well-being, they were more likely to report poor self-rated health (Cupery, et al., 2021).

Anabolic-androgenic steroid use was shown to have a direct link with psychopathological symptoms. The higher the anabolic-androgenic steroid use, the more severe the psychopathological symptoms. The paradox that could not be distinguished was if psychopathological symptoms were because of steroid use, or if steroid use was because of
preexisting psychopathological symptoms or tendencies. Athletes suspected of steroid use were 4.6 times more likely to die from suicide or a heart attack. The suicidal tendencies among steroid users tended to be very risky such as: jumping in front of a train, an explosion, hanging, etc. Steroid users were more likely to use other substances such as: psychostimulants, benzodiazepines, and opioids. Steroid use among men is significantly more prevalent than among women. Typically, men use steroids to gain muscle mass and often suffer from body dysmorphe, women will utilize steroids for a thin or toned physique (Piacentino, et al., 2015).

Genetics and hormones were shown to have an influence on an athlete’s susceptibility to depression. Elite athletes were shown to potentially be desensitized to stress stimuli and have developed a new serotonin baseline due to years of rigorous training. These concepts coin the term adaptable depression within athletes, as reduced reactions to stress and changes in baseline serotonin levels would register elite athletes at subclinical levels for depression if professionally tested. In the same study, it was reiterated that athletes are unlikely to seek help for depression to a negative stigma of perceived weakness (Forys, et al., 2022). Short genotypes of the 5-HTTLPR polymorphism in athletes were shown to put an athlete at risk for increased neuroticism, depression, and anxiety compared to athletes with long 5-HTTLPR polymorphism genotypes (Petito, et al., 2016).

High-performance athletes from underprivileged backgrounds involved in sport for social development programs were shown to report a higher quality of life compared to a population that did not attend sport for social development programs. However, traumatic events such as witnessing a murder or other crimes impacted athletes negatively, and quality of life was predicted by both sport for social development programs and the number of traumatic events experienced by an athlete. Athletes witnessing violent or traumatic events are at high risk for
PTSD (Post Traumatic Stress Disorder), social vulnerability, and mental disorders such as depression or anxiety; despite the impact of sport for social development programs (Fernandes Jr., et al., 2021).

Vitamin D deficiency in tactical athletes was significantly associated with diagnoses of depression. However, many tactical athletes that were diagnosed by a doctor were not tested for vitamin D deficiency, therefore; vitamin D supplementation could mitigate depression (Schaad, et al., 2019).

A follow-up study was conducted on former Division I athletes and competitive athletes that did not play at the Division I level. The follow-up took place five years after college or a Division I athlete’s respective sport ended. Former Division I athletes were overweight and out of shape, compared to athletes that did not compete at the Division I level. Former Division I athletes reported significantly higher levels of osteoarthritis and factors that limited them in their daily, compared to athletes who participated in competitive sports or leagues that were not NCAA Division I affiliated (Simon, et al., 2021).

NCAA athletes may be more susceptible to social relationships, as their social relationships are typically linked with their athletic identity. Athletes traditionally operate in homogenous social circles when compared with the regular college student, a romantic breakup or fallout with teammates may impact an athlete more negatively due to their narrowed social environments. Social difficulty was linked robustly with suicide attempts in student-athletes compared to non-student athletes (Anchuri, et al., 2019).

During Covid-19, team sport athletes suffered from depression more than athletes in individual sports. Depression correlated with: fear, worry, decreased motivation, and an inability to see anything positive with a postponement of the 2020 Tokyo Olympic Games (Lambert et al.,
In a study assessing patterns of health behaviors affecting mental health in collegiate athletes, males reported more hours of sleep than females. However, female athletes were more attentive to nutrition than male athletes, as well as general health concerns. Males and females consumed alcohol at similar rates, but males reported more binge drinking than females; while females reported consuming alcohol more frequently but binged less. Males reported more drug use than females, specifically marijuana, the majority of both male and female athletes reported no drug use at all. Males were more likely to partake in aggressive behaviors than females. Mental stress and general stress were met with: increased aggressive behaviors, increased alcohol use, and lower feelings of energy in both sexes. Specific to females, mental stress and general stress were met with an unhealthy diet and less frequent alcohol use (Souza, et al., 2021).

**Treatments or Potential Mediators for Depression in Athletes**

Student-athletes primarily sought informal routes of help-seeking. If student-athletes did not seek any type of help, they were more likely to report heightened symptoms of depression. Student-athletes were most likely to talk to in order: a friend, family member, teammate, coach, and lastly an unspecified individual (Drew et al., 2019). Male student-athletes were considered more resilient than female student-athletes, resilience could be associated with lower depressive and anxiety symptoms as well as be considered a significant predictor for depression and anxiety (Drew et al., 2019).

An athlete with strong psychological resilience will be able to manage their trait anger, emotional reactivity, and psychological maladjustment; and in consequence, reduce their risk for depression, anxiety and stress (Ozan et al., 2022).

A concussed athlete was found to benefit significantly from emotional support from
athletic trainers, family members, and team physicians. Emotional support correlated with an athlete looking back on their concussion as either a positive or negative experience. If an athlete had significant emotional support, the experience would be seen as more positive rather than adverse, and vice versa. Athletes reported receiving less emotional support from teammates than expected, but more support from athletic trainers and family members than expected (Wayment et al., 2019).

Athletes that processed their successes and failures in an abstract way of thinking rather than a concrete way of thinking, were more likely to have higher levels of self-esteem. Individuals who had high levels of self-esteem were less likely to negatively generalize events, allowing them to be less susceptible to depression (Van Lier et al., 2016).

Religious involvement was found to promote: happiness, increased life satisfaction, and general well-being. NFL players who reported weak or poor-quality social ties showed a significant increase in health and well-being if they were involved in religious services and or events. NFL players with quality social ties were shown to benefit from religious services, but if they had quality social ties and did not attend religious services, they were likely to report positive well-being and self-rated health. However, religious service attendance was shown to be a quality predictor of self-rated health. If a former NFL athlete was attending religious services and or events regularly, they were more likely to report positive self-rated health (Cupery et al., 2021).

Cognitive behavior therapy, phenomenological consulting, and acceptance commitment training have widely been accepted by athletes and sport psychologists. Wellbeing therapy has been used in non-clinical and clinical settings successfully, and can be compounded with cognitive behavior therapy, which has been proven to increase athletic performance and decrease
stress and anxiety in athletes; as well as other types of therapy to improve effectiveness (Thompson et al., 2021).

Athletes that were skilled in gratitude were more likely to perceive positive team cohesion and report higher life satisfaction, compared to athletes that did not exhibit high levels of gratitude. Gratitude was shown to have a positive effect on overall well-being and life satisfaction within an athlete (Chen et al., 2014). Grateful athletes were more likely to receive and perceive positive social support from both coaches and teammates. Support from coaches and teammates in an athlete had a positive association with well-being. Athletes who did not exhibit high levels of gratitude were less likely to receive and perceive positive social support from both coaches and teammates. Not perceiving or receiving this resulted in a reduced sense of well-being (Chen, 2012).

College athletes were more likely to attend some type of professional mental help service(s) if they attended a workshop that made mental health the topic of focus, or if their coaches or teammates referred them to utilize professional mental help service(s). Collegiate athletes were unlikely to attend a mental health study that was offering course credit. Freshman collegiate athletes were less likely to utilize mental health services compared to senior collegiate athletes (Donohue et al., 2020).

Loss of athletic identity often results in depression in athletes. Successful coping with the end of sports can produce feelings of well-being and combat depression. Athletes that were able to channel pieces of their athletic identity into other ventures, and put a positive spin on the end of athletics, realizing it has a finite shelf life; were able to mitigate the harmful effects of loss of athletic identity (Menke et al., 2018).

A study investigating the health and self-esteem of active collegiate athletes compared to
regular college students discovered some interesting demographics. 75% of active athletes, or athletes that reported exercising almost every day, lived in the city. All active athletes reported exercising almost every day, while a control group of regular college students reported exercising almost every day scarcely. Active athletes showed significantly higher levels of: self-esteem, well-being, and life satisfaction compared to non-athletic college students. Participants of low economic status exhibited higher rates of depression and phobia when compared to participants of good economic status (Lukanovic et al., 2020).

**Interesting Findings**

Student-athletes who believed they needed professional help were almost 5 times more likely to report symptoms of moderate to severe depression, and almost 3 times more likely to report moderate to severe symptoms of anxiety; compared to student-athletes who believed they didn’t need professional help. The majority of student-athletes in the same study that were deemed eligible for professional help did not seek it for undisclosed reasons. In addition, male student-athletes were less likely to discuss personal problems compared to female student-athletes (Drew et al., 2019).

Attachment theory in psychology was deemed to be relevant to athletes. A study showed that athletes do view their coach or coaches as attachment figures, and expect them to provide basic psychological needs. An athlete who was avoidantly attached to a coach would have an increased perception of a coach inhibiting their autonomy and competence, in consequence reducing an athlete’s overall well-being and life satisfaction. An anxiously attached athlete was affected the same way an avoidant athlete was. A securely attached athlete was less likely to see their psychological needs thwarted, and reported feeling more related to their coaches compared to anxious and avoidant attached athletes (Felton, 2015).
Surfers were less likely to utilize emotion-based coping compared to the general population. Surfers are more likely to use avoidance-based coping strategies and dissociate from problems or stressors altogether. Ironically, the most passionate surfers describe the feeling of surfing as a dissociative experience, as one loses themselves, they become more in tune with the ocean and the sport (Levin et al., 2011).

In the context of self-determination theory, autonomous and controlled goal motives had a significant impact on an athlete’s performance. If an athlete had controlled goal motives, they were more likely to view challenges as threats, which would trigger disengagement coping; which would result in unpleasant emotions and a negative view of the challenge at hand. Athletes that had autonomous goal motives were likely to view challenges as something positive, increasing their effort, persistence, and problem-solving initiatives toward the task at hand. Autonomous goal motives were shown to increase well-being over time. Autonomous and controlled goal motives were also found to be unrelated to one another (Ntoumanis et al., 2013).

The same type of coping strategies have been shown to be both effective and ineffective depending on the: athlete, scenario, time, and context of a situation. Four coping strategies have been cited to be used by elite athletes. Problem-focused coping strategies aim to address or fix an issue at hand. Oftentimes, an athlete will go to a therapist or some type of professional help to utilize this strategy. An athlete may also utilize this strategy while seeking informal forms of help such as talking to a close friend. In a negative application, an athlete may commit self-harm to address the problem at hand. Emotion-focused coping aims to change the mood or emotion that is bothering the athlete. This can be through the use of illicit substances or by venting negative emotions to a therapist. Appraisal-focused coping aims at addressing the cognitive aspect of the challenges at hand. An athlete can view the obstacle in front of them as something
positive and accept it for what it is, or they can ruminate in negativity and spiral their current emotions into even darker, more negative versions. Lastly, avoidance-focused coping could be an athlete turns to training or an event outside their sport to find relief, or completely abandons their sport and or future goals for an unspecified amount of time (Lebrun et al., 2019).

Successful adaption to retirement hinged on: autonomous retirement, preparation for a post-athletic career, athletic identity, and social resources. Current Paralympic athletes had higher athletic identity than former Paralympic athletes, depression was negatively related to self-esteem, and self-esteem was positively related to athletic identity. Paradoxically, self-esteem did not significantly differ between retired Paralympic athletes and current Paralympic athletes (Marin-Urquiza et al., 2018).

Injured athletes reported receiving social support from their athletic trainer to be beneficial in their return to sport from an injury. Injured athletes reported that athletic trainers helped them feel relaxed, accepted, and cared for. There was no statistical significance in depression in athletes that received social support from their athletic trainer, compared to athletes who did not receive social support from their athletic trainer (Yang et al., 2014).
HEADING 5

DISCUSSION

Scoping Review Impact on Current Academia

The purpose of this study was to conduct a scoping review addressing the two research questions: what are the causes or risk factors of depression in competitive athletes and what are the treatments or potential treatments for depression in competitive athletes? The key findings for causes and or risk factors for depression in athletes are: overtraining, loss of athletic identity, and injury. The key findings for treatment for depression in athletes revolved around: emotional support, coping, and developing intangibles. This scoping review is unique because it synthesizes both causes and or risk factors of depression in athletes, and treatments for depression in athletes. In addition, it aims to address why specific treatments for depression in athletes work, in consequence; isolating and eliminating specific causes and or risk factors for depression in athletes.

Categorical Causes and or Risk Factors of Depression in Athletes

Out of the data collected and reviewed, the exhaustive causes and or risk factors of depression in competitive athletes could be distinguished into five separate categories: cognitive (negative self-talk, negative generalization, pessimistic perspective), social (poor treatment from coaches, breakup with a significant other, family disownment), physical (concussions, ligament tears, tendon tears), external (belongings lost in a fire, university pulls scholarship from the athlete, an athlete is maimed by a criminal) and inherent (genetic disorder for depression, no parents for guidance, born into poverty). Some of these categories may overlap, however, the majority of the time an additional categorical cause and or risk factor will stem from the major categorical cause and or risk factor.
Cognitive Causes and or Risk Factors

Cognitive causes and or risk factors, refer to controllable mental factors, often in the form of negative thinking that causes negative emotions; or intangibles such as an athlete believing they are worthless and lazy. For example, developing strong psychological resilience or a high level of self-esteem would or can be purely cognitive factors, as well as learning how to control emotions in stressful situations. One can debate whether emotions are things that can be controlled or simply occur, although the widely accepted is notion that humans are capable of controlling their emotions through their thoughts. It is also widely accepted that people can control how they act and respond to stressful stimuli, this includes portraying emotions that may not be wholly authentic. In contrast, whether emotions portrayed are completely genuine or a façade, a genuine effort to exhibit positive emotions in negative situations or circumstances has always been shown to benefit athletes to some degree. It is normal for an athlete or person to experience negative emotions in response to a death of an intimate relationship, in both a literal and or emotional sense. Thankfully, an athlete or person always has the ability to make a horrible situation more suitable in respect to how they process such a situation, or detrimentally worse depending on how they process the situation. A horrible situation will be difficult, however, no matter how the athlete chooses to process it.

Social Causes and or Risk Factors

Social causes and or risk factors would be anything related to relationships. An athlete could be suffering from heavy demands to perform from their coaches, teammates, or even family members; or could be struggling with the emotional burden from their boyfriend, girlfriend, fiancé, etc.; all these are confounding social factors. Emotional support or lack thereof, as well as social connectedness, could be generalized as cognitive and social factors.
However, emotional support and social connectedness could easily fit all categories except physical depending on the context.

**Physical Causes and or Risk Factors**

Physical causes and or risk factors are related to events such as concussions or injuries, literal physical causes. Something such as lack of sleep or poor nutrition could be considered a physical factor, this would be dependent on negligence of the athlete. If an athlete is not sleeping well due to anxiety, or due to heavy travel from away games; lack of sleep could be considered physical, cognitive, and or external. In general cases, physical factors and or causes of depression will be due to physical causes that directly affect an athlete. It is also important to note that an injury and loss of athletic identity are often inseparable. In the least severe cases of injury related to athletes, an injury would at least pose a threat to an athlete’s athletic identity.

**External Causes and or Risk Factors**

External causes and or risk factors are related to things completely out of an athlete’s control. For example, most if not all physical factors are completely out of an athlete’s control, with the exception of partaking in risky behaviors that are high risk such as bare-knuckle boxing or street fighting. Many factors could be considered external. A coach having a personal dislike for an athlete would be external and social. Perhaps the coach does not like an athlete because they slack off in practice, or perhaps they perform better than a player that the coach has exhibited to be the epitome of leadership and performance on the team. Regardless, an athlete’s actions may indirectly or directly influence a coach’s opinion of them, but is completely out of their control.

**Inherent Causes and or Risk Factors**

Inherent causes and or risk factors can cross into other categories as mentioned
previously, however; they would pertain to factors that an athlete is born with. If an athlete has a genetic adaptation that would be considered to make them more susceptible to depression, that would be both inherent and external. If an athlete grows up in a violent household or in foster care, that could also be considered both inherent and external. Inherent factors will always be external, but external factors will not always be inherent. For example, an athlete that suffers from depression attributed to concussions would be considered an external and physical factor, but not inherent because it would not be attributed to what they were born with; thus, an inherent category is necessary.

**Implications of Findings**

All findings in the research are relevant and pertinent to depression within competitive athletes. Athletes are less likely to use any type of professional help for any mental illness, especially men, largely due to the negative stigma that athletes are the pillar of mental and physical wellness. It could be hypothesized that to openly announce struggle with mental illness could inconsequently renounce an athlete’s athletic identity and how they view themselves, as well as how the social environment around them views them; leading to larger problems such as severe depression. However, in reference to causes and or risk factors of depression related to athletes: injury, overtraining and loss of athletic identity are by far the most debilitating factors on paper thus far. Although, in mainstream media, loss of athletic identity and injury are the two causes and or factors of depression that are the easiest to observe in competitive athletes. In addition, injury and loss of athletic identity or threat to athletic identity are nearly inseparable, which would beg the question as to how does one treat such factors and or causes?

**Lack of Research in Current Scoping Reviews**

There is a lack of research on effective treatments for athletes dealing with mental
illnesses, let alone depression, when compared to research done on causes and or risk factors for mental illnesses or depression in athletes. When injury and athletic identity are discussed, it was often from an empirical or observational perspective, with the exception of athletes that are individually interviewed and expressed their own conclusions. From a research standpoint, however, minimal conclusions are drawn from the empirical and observational perspectives, common methodology is to report what is seen and what can be measured, and imply further research is warranted. Through implications drawn from the effectiveness of cognitive behavior of therapy in athletes (Thompson et al., 2021), fundamental psychology, and virtue, reasonable conclusions can be argued as to how to help athletes battling with injury and loss of athletic identity. The imperative question that needs to be asked is what constructs a healthy, sustainable athletic identity; as when it is ruptured in research, the athlete is often ruptured alongside it.

What Makes Sports Fun: Depression from Misguided Expectations

A helpful finding that answers the conundrum of how could competitive athletes, who live active lifestyles, a proven natural mitigator towards depression and other mental illnesses; suffer from depression and other mental illnesses? The answer is that training for sports, specifically in competitive environments, prioritizes winning (Ozan et al., 2022); which is often gauged and predicted through performance in practice and proved in performance outcomes such as games or tournaments. When sports lose their fun factor, athletes are at higher risk for: stress, injuries, career dissatisfaction, anxiety, feelings of failure and negativity through unmet goals, etc.; which in their own respects contribute to depressive symptoms in athletes. With a quick query in an academic database or even Google, it is easy to establish why and what makes sports fun. To add credibility, this question is usually researched in the context of youth sports. Children tend to be more direct, honest, and blunt than adults but tend to lose this trait over time.
This is due to negative consequences that direct statements can have such as hurting someone else’s feelings or perceived rudeness in certain contexts (Brimbal, 2022).

What makes sports fun? Interestingly, a study answers many key factors to what makes sports fun, but winning is not a listed factor. Simply working hard and exhibiting effort was a reason why sports were fun. Setting goals, working towards those goals, seeing improvement, and achieving goals were fun, not even in the context of adults, but for kids. Rooting for one’s teammates and watching them succeed was also shown to make sports fun. A coach that could be seen as a positive role model, and cared about the athletes by letting them make mistakes and develop a sense of autonomy by listening to their athletes, contributed to making sports fun. Letting all the hard work and effort in practice flourish in games was seen as fun, however, the outcome was more or less irrelevant. Practices in which a coach demonstrated creativity in drills and showed care through organization, made sports fun for kids; as well as being to experiment with different positions and give the coach their input. It was also important for an athlete to be able to utilize their talents, if a coach stressed fundamentals with an athlete that exceeded the difficulty of fundamentals; it could affect the fun factor for an athlete if they were not allowed to utilize their skills. The bonds made on teams brought enjoyment to kids, whether it be outside of school athletics or athletics related to the school (Visek, Mannix, Chandran, Cleary, McDonnell, DiPietro, 2020).

**Winning in Sports: What Does it Satisfy?**

It is important to note, that if studies did include winning as a reason as to what made sports fun, it was often not due to reasons pertaining to winning; it was the things that winning brought. Winning brings a sense of accomplishment or milestone that goals are being reached. It brought a sense of swagger or bragging rights on certain occasions. On a professional level, it
can be observed winning brings: celebrity status, funds to an organization, fame, positive public recognition, sponsorships, women (for male athletes), etc. It is also important to note that individual accomplishments and accolades did make sports fun, even for kids, but it was a single factor of many factors. The priority of winning cannot be divorced from competitive sports, in fact, it only heightens as competitiveness increases. At the professional level, both coaches and athletes are paid to win, and are expected to win. At the college and high school levels, coaches are paid to win and bring positive recognition to a school’s program. There are many other factors to the prioritization of winning, but in regards to athletic identity and injury, specifically at the highest levels of competition; the priority of winning could be attributed to many negative side effects if not handled with caution.

**Athletic Identity: How is it Constructed?**

Athletic identity could be paraphrased as how closely an individual relates themselves to their role as an athlete, and how often they look for others to see the athlete within them (Edison, Christino, Rizzone, 2021). Other research might vary in definition slightly, but it will sound something similar to this paraphrased definition. It is important to note that often a strong athletic identity will be tied to an individual’s self-worth, as the title suggests, athletics truly becomes a part of one’s identity. This is not a bad thing, in fact, it is inevitable. The more a person values something, the more they will spend time doing that thing; with athletes, this is often their sport of choice. For a regular individual, their spouse would often be considered highly valuable. For drug addicts, it is the substance of their choice. In many cases, the more an individual sacrifices or pays a cost for something, the more that thing will be worth to them. Sacrifice could be in the form of: money, time, energy, attention, etc. Perhaps the most well-said example of this is John 15:13 “The greatest love a person can show is to die for his friends.” (NCV) What more could
an individual sacrifice for someone or something else, than their very own life?

**Athletic Identity: Values**

With the inability to elaborate, as researchers in social psychology have spent their entire lives discussing this topic and it not being the main focus of this paper, I will summarize the findings. What an individual values, is a key component of what makes up an individual’s identity, what constitutes what good and poor values are and what a value is, is another facet, but values will dictate how an individual lives their life (Hitlin, 2003). The danger of athletic identity, although not explicitly stated, but easily observable, is it is often tied to uncontrollable and unsustainable values. If the athletic culture makes winning an axiom, that is out of an athlete’s control. However, if an athlete makes their: performance, accolades, financial success, achievements, wins, sponsorships, celebrity status, fame, etc. the axiom of their athletic identity; they will inevitably cripple themselves.

**Athletic Identity: What Can the Game of Sport Satiate?**

It is important to establish what sports and games are, and more importantly, what they can provide. The words sport and game are often used interchangeably and have very few differences that distinguish them from one another. In fact, a game in sport usually refers to a specific competition or event such as a basketball game or soccer game, or football game. The main thing that distinguishes a sport from a game is that a game can be a physical or mental activity, while sports are physical activities. Not only that, the reason why people play games or sports is either for pleasure or for fun (Britannica, n.d.).

**Athletic Identity: Pleasure VS. Happiness**

Pleasure and fun, in other instances also known as instant gratification, cannot and will not provide: happiness, true fulfillment, and meaning in life. Modern consumerism captivates the
notion of what feels good is good, which is essentially instant gratification in a nutshell. In fact, in behavioral economics; there is a term used to describe trading in substantial, long-term rewards, for short-term trivial rewards. It is implicitly based on the notion that people are self-serving, sometimes to their own demise; and if they can have a reward that impacts them or feels good now, they will ultimately take it. This process or pattern of life choices is called hyperbolic discounting (TheDecisionLab, n.d.). This is easily observable in many cases of addiction: drugs, food, sex, alcohol, etc. All these things have one thing in common, and it is that they offer the ability to be able to feel good now, instantly, in their respective moments of consumption.

Pleasure in it of itself is not inherently bad. It is not morally or ethically wrong in many contexts, however, it will not give what it cannot give. In the current day, pleasure and happiness are used interchangeably, although they are different. Dr. Robert Lustig, a former endocrinologist who now is the Professor Emeritus of Pediatrics in Endocrinology at the University of California, San Francisco, distinguishes the differences gracefully.

Table 3 | Pleasure VS. Happiness (Adapted from Hacking of the American Mind, Lustig, 2017)

<table>
<thead>
<tr>
<th>Pleasure</th>
<th>Happiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Short-Lived</td>
<td>• Long-Lived</td>
</tr>
<tr>
<td>• Visceral</td>
<td>• Ethereal</td>
</tr>
<tr>
<td>• Taking</td>
<td>• Giving</td>
</tr>
<tr>
<td>• Often Experienced Alone</td>
<td>• Experienced in Social Groups</td>
</tr>
<tr>
<td>• Leads to Addiction</td>
<td>• No Such Thing as Being Addicted to Happiness</td>
</tr>
<tr>
<td>• Dopamine</td>
<td>• Serotonin</td>
</tr>
</tbody>
</table>

Athletic Identity: Pleasure VS. Happiness Paralleled and Elaborated
Within the same source, differences between dopamine and serotonin are expanded on. Dopamine can be associated with drug use, alcohol, and truly anything that can cause addiction. For example, when someone eats their favorite dessert, it tastes and feels good; a normal reaction is to want more. However, similar to drug usage or other addictions, the feel-good only lasts for so long; one needs more and more to get the same feel-good. Unfortunately, one day that person doesn’t feel good anymore, and they are consuming a substance in order to reach a functional baseline sometimes to the point of dependence; they no longer receive the high they were once getting.

In contrast, serotonin is associated with feelings of deep contentment. It is similar to the feeling that one gets when they are in love, compared to when one is in lust, as pleasure and happiness are very similar in the same illustration. Love emphasizes: sacrifice, the need to give, is peaceful and liberating, attending to another’s needs, the work in the relationship is seemingly effortless and worthwhile, is relaxing, etc. Lust on the other hand emphasizes: selfishness, tension, taking, only wanting the other person to have what the selfish person wants, work in the relationship is burdensome, is only happy when it is fed but nothing is ever enough, is destructive both long and short term, etc. (The Art of Living, 2018).

**Athletic Identity: Pleasure in Sport**

It’s important to note that accolades, fame, recognition, championships, etc. are all forms of instant gratification. While not inherently bad or harmful, they are all short-lived, and produce emotional highs that are difficult to replicate. The feeling of performing in front of 100,000 people, and winning a championship; is not an opportunity the majority of individuals will have. If they are fortunate enough to have such an opportunity, it may be once in a lifetime. To expect and live for such things in life outside of sport could prove to be detrimental, as such things are
nice, but ultimately aren’t sustainable and are fleeting.

**Athletic Identity: Vanishing and Insubstantial Fulfillment**

So how does all of this tie into athletic identity and injury one might ask? The answer is deep but simple. If one makes a game the axiom of their identity, a game can only bring short-term pleasure and fun, never true meaning or fulfillment; as a game is not meant to provide those things to begin with. As with the lust or dopamine illustration, there is no amount of accomplishment or accolades that will ever be enough to satisfy one’s search for meaning or life purpose, and the satisfaction is short-lived and ever fleeting if the accolades are obtained. This is easily observable in professional sports on both the extreme spectrums of winning and losing. Tom Brady, arguably the most decorated football player of all time had an interview with Steve Kroft on 60 Minutes in 2005, and what he said was brutally honest yet profound.

*KROFT: Which of the rings do you like the best? What’s your favorite ring?*

*BRADY: My favorite ring? I’ve always said the next one. The next one’s the best. They’re special. The first one was great. It’s got a great story. The second one is mine. The third one is obnoxious (LAUGHTER) I mean, you see these things?...*

*KROFT: This whole experience – this whole upward trajectory – what have you learned about yourself? What kind of an effect does it have on you?...*

*BRADY: Why do I have three Super Bowl rings, and still think there’s something greater out there for me? I mean, maybe a lot of people would say, “Hey man, this is what is.” I reached my goal, my dream, my life. Me, I think: God, it’s gotta be more than this. I mean this can’t be what it’s all cracked up to be. I mean I’ve done it. I’m 27. And what else is there for me?* (Schorn, 2005, p.2, p.4, p.5)

William “Refrigerator” Perry, by many standards, would be considered successful. He
was: a Super Bowl (XX) Champion, a collegiate national champion (1981) at the University of Clemson, ACC Player of the Year in 1984, a Consensus All-American in 1983, was inducted into the WWE Hall of Fame in 2006, and played ten years in the NFL (significantly longer than the league average of 3.3 years). Despite all the objective success and accolades, William Perry struggled later in life. In 2011, 15 years after William retired from the NFL, he struggled with his weight; weighing upwards of 400 pounds. His heartbroken wife views her husband getting out of bed at 10 a.m. most days, to glue himself to the couch. Refusing to take his medications or even walking to the fridge, the only exceptions to his moving are to go to the liquor store and to the bathroom; he eats because his wife prepares all his meals. It was revealed that during his time with the Chicago Bears, William Perry was checked into rehab as a recovering alcoholic, which followed him later in life post-retirement (Friend, 2011).

**Athletic Identity: Current-Day Athletes Left Unfulfilled**

There is what seems to be an abundant number of athletes that struggle post-retirement or even during their careers, however; they all have one thing in common, their athletic identity. As mentioned in the introduction, Rhonda Rousey discussed self-harm after a single loss, after one of the most unprecedented bouts of success in women’s MMA history. Michael Phelps, the most decorated Olympian of all time, achieved heights of success multitudes dream of; but still felt empty. However, this all makes sense, a game and the accolades that come with the game can only provide pleasure; the game is giving only what it is meant to give. And even then, the game and accolades all have a shelf life. No matter how much LeBron James accomplishes, there are always comparisons to how much better Michael Jordan is. NFL players such as Bo Jackson or Joe Montana, while still occasionally talked about, are not in the limelight anymore.

As Rhonda Rousey said in the introduction, she felt she was nothing in the moment of a
huge loss. On the flip side, Michael Phelps reports feeling empty despite abnormal amounts of success. Identity can be based on values that are uncontrollable and unpredictable, but logically this is foolish. Michael Phelps could have the worst performance of his life and still win the gold medal; Ronda Rousey could have the best performance of her life and still lose the fight. Kai Greene, a top IFBB (International Fitness and Bodybuilding Federation) bodybuilder who never formally retired but stopped competing in 2016, achieved 2nd place at IFBB’s Mr. Olympia in 2012, 2013, and 2014. Kai Greene was runner-up to Phil Heath, a seven-time Mr. Olympia winner through the years of 2011-2017. From an objective standpoint and IFBB judging standards, Kai Greene clearly outperformed Phil Heath in the 2014 Mr. Olympia competition, but the judges deemed otherwise. Sometimes recognition is not given to where it is due, and sometimes fame comes to those who did not work as hard as others, or wins come to teams or individuals that are not more skilled than their opponents. “I also saw something else here on earth: The fastest runner does not always win the race, the strongest soldier does not always win the battle, the wisest does not always have food, the smartest does not always become wealthy, and the talented one does not always receive praise. Time and chance happen to everyone.” (Ecclesiastes 9:11, NCV)

**Athletic Identity: The Question**

Accolades and various measurements of success are nice, but they are inconsistent, unwavering, and ultimately uncontrollable. For one to place their value and identity in such things is to eventually become morbidly disappointed in the future. Everyone will lose a game one day. One day there will be a new greatest of all time, while the old greatest of all time will be forgotten. There will always be another thing to accomplish, there will always be mistakes remembered by the media and masses forever. This leads to the final question of what will
provide sustainable meaning and fulfillment in sports and in life, and what does a healthy athletic identity look like; if not based on accolades and achievements in a game?

**A Meaningful Life and Healthy Athletic Identity**

There are three things that can be reasonably argued to answer the question of what a healthy athletic identity and meaningful life look like, they are: identity diversification (Bregman, 2021), virtue (Stephens, n.d.), and controllable values (Weaver, 2023).

**A Meaningful Life and Healthy Athletic Identity: Identity Diversification**

Identity diversification is so painfully obvious, and applied in everyday circumstances, but rarely discussed. Many people do not live on a diet of merely peanut butter and jelly sandwiches, why is this the case? There are many arguments to be made, but a simple observation is that there are more things to eat than peanut butter and jelly sandwiches; there are even options that provide greater nutritional benefits. Even in the world of investment or everyday living, one is advised to invest or diversify their finances or talents. Many would consider it foolish to spend an entire life savings on chocolate, or only focus on becoming the best hopscotch player in existence. People choose what is valuable and worth investing in every day, some things are truly worth more time than others, who can truly put a definitive value on the life of a human being?

Many people own different types of: cologne, spaces of living, cars, clothes, shoes, etc. throughout their entire life. Is this because what they have is not good enough or is not sufficient? Certainly not, life is multidimensional as are people, while both have their limits; they also have their flair. In very few scenarios in life, do people put all of their eggs into one basket, because most of the time it is foolish. If someone loses a job, they go find a new one; their future job does not have to be defined by their previous job. If a husband-and-wife divorce, how
unfortunate and painful, but the implication does not have to be that either individual is unlovable and not worthy of another relationship. When people limit their identity and values to a specific subset of life, they deny their humanity and limit any future versions of themselves that they could potentially become. If an investor invests all they had into a single stock, and the stock crashes; their entire life savings have vanished in an instant. It is the same way with athletes, if they are only defined by their respective sport, when the game inevitably ends; so, will their purpose and reason for living.

**A Meaningful Life and Healthy Athletic Identity: The Value of Virtue**

How an athlete forms their identity is based on what they value, which is completely within their control. If an athlete chooses to value things out of their control or things that cannot provide true meaning, their athletic identity will also be out of their control. Michael Phelps is not just Michael Phelps the athlete, he is also Michael Phelps the: father, role model for future athletes, son, author, etc. Any other athlete or human being in life will have multiple aspects to them, and while the benefits that come with being a professional athlete are recognized and praised by many, it is finite. An athlete will not always be the athlete they once were someday, as a regular person might not work the same job their entire life. It is imperative and essential that athletes not only see value in themselves in their sport, but also recognize they aren’t unidimensional, and their sport only defines them if they allow and choose it to define them in the ways they choose to let it define them.

**A Meaningful Life and Healthy Athletic Identity: Valuing “Happiness”**

How can an athlete value something of true meaning then, if accolades and achievements are never enough? There are things that bring pleasure or positive emotions in life, and there are also things that bring pain and require sacrifice. Shockingly, the things that bring pleasure or
positive emotions do not always bring about a meaningful life; and the things that bring pain and require sacrifice oftentimes do. A small example of this notion that many athletes and people can relate to is having children. Do people have children because having children will make them happier? Perhaps, but at the same time, it is a valid claim that children are hard to raise; and add many stressors in life that would not normally exist. It is a reasonable argument that people do not have children because children make them happier, rather, children add meaning and depth to life that is irreplaceable. Who can quantify or tangibly measure the moment when a father or mother holds their child for the first time, or measure how precious that moment really is? I would like to offer the notion, that happiness is a byproduct of living a meaningful life, which can only be obtained through life in pursuit of virtue, and that to live focused on doing whatever makes one “happy” is both a vain and impossible task.

Perhaps one of the best illustrations of this claim is none other than Dr. Jordan B Peterson: author, psychologist, Professor Emeritus at the University of Toronto, and media spokesperson. In a seminar in Wheatland, CA, he discusses why aiming for happiness is a vain pursuit; as its ultimately unsustainable. He gives an example of prisoners of war in concentration camps, and elaborates how happiness in such a context is devoid, there’s a great deal of suffering that comes with being placed in a concentration camp. In fact, most if not all of life requires suffering, it is the lack of finding meaning in the suffering or avoidance of it altogether that makes life meaningless. He mentions Dostoevsky’s Notes from Underground, and how people living in a utopia where they only eat cake and procreate, although feeling great for a short while; eventually go mad and break things to experience unforeseen variety (Jordan B Peterson Clips, 2023).
A Meaningful Life and Healthy Athletic Identity: Theoretical Solution

The antidote to the lack of meaning in life or athletic identity, is to fall in love with adventure and the things that come with it, rather than indulge in expediency. He makes the point that people regret the chances they do not take, not their failures and things that did not work out in life. People reminisce and admire the suffering they went through during difficult times or in the pursuit of a hefty goal, and say it was worth it. He stresses that experiencing life at one’s greatest limits produces a meaningful life and the most exciting times in one’s life; to the point that some would pay to experience being optimally pushed to their limit. He stresses how Hawaiians viewed surfing as sacred, because to surf is to live life on the edge. One is at full mercy to the ocean, but without being inches away from the ocean’s grasp, one cannot live life on the edge; and experience some of the most meaningful things life has to offer. When one is at their limit, they are deeply engaged in life and suddenly everything is vivid and meaningful (Jordan B Peterson Clips, 2023). Expedience can offer instant gratification, but it cannot offer fulfillment or meaning, as that can only be acquired through sacrifice or suffering of some type; not pure indulgence and consumption.

A Meaningful Life and Healthy Athletic Identity: Philosophy of Cognitive Behavior Therapy

Cognitive behavior therapy has been proven to be effective with athletes (Thompson et al., 2021). Cognitive behavior therapy is primarily rooted in stoicism, with some of the main philosophers being Marcus Aurelius and Epictetus. It also pulls from Asian philosophy, with some of the principles being derived from the teachings of Buddha, Confucius, and Lao Tzu (Paget, 2021). All these philosophies stress a life of meaning is a life of virtuous pursuit, with the exception of deviations from traditional Buddhism. The notion that pursuing virtue rather than accolades, fame, etc. could prove to give athletes a stable athletic identity, as cognitive behavior
therapy has proven to help athletes.

Stoicism, unlike the name, is not rooted in eradicating all emotions one might feel. In fact, the main emphasis of stoicism is to control what one can control and to not stress about the rest. For the most part, many things in life are out of one’s control, it is how one responds to such things that is within their control. It also argues that virtue alone is sufficient for happiness and bliss, everything else is indifferent.

A Meaningful Life and Healthy Athletic Identity: Liberation in Virtue and Controllable Values

Lastly and conclusively, an athlete can pick and control their values. An injury would be unsettling and devastating for many athletes, as some have spent their entire lives performing at the highest of levels; not atrophy. However, an athlete that does not have their identity tied to performance, accolades, and various other measures of achievements, although hard; will remain stable. If the athlete values a life of virtue, they will see meaning in the suffering. They will know that there is more to them as a human beings than just an athlete, and when injury strikes; there is more to look forward to in life.

The loss of a national championship will not be devastating, because participating in sport itself reflects an athlete’s values, and it is those values that define the athlete; not the achievements produced by such values. The athlete will enjoy their respective sport because participating in their sport allows them to grow in: courage, humility, kindness, temperance, patience, gratitude, wisdom, responsibility, loyalty, integrity, etc. Every day that an athlete competes will be seen as a privilege, the luxuries that come with fame and fortune will not be the axiom that the athlete clings to. The athlete that competes to their very best and finishes last, or the athlete that feels unprepared and finishes first; will be able to handle defeat and success
gracefully. It is not the defeat or success that defines the athlete, but the virtues acquired through the adventure of living life on the edge; as every day is a new day to become the best versions of themselves. A loss will not mean an athlete is an ultimate failure. A success will not demonstrate the ultimate daemon. The athlete is closer to becoming who they were meant to be, predestined with innate and fathomless value, emblazoned with remarkable talents; as both an athlete and human being.

**Theoretical and Practical Implications**

*A theoretical contribution to the existing literature:* This scoping review offers elaboration on treatment methods, whereas many research studies strictly identify treatment methods. This scoping review aims to explain why a select amount of treatment methods are effective. This scoping review not only synthesizes research findings from 30 sources, but also followed the rigorous PRISMA guidelines, to ensure the 30 sources used were of high caliber.

Secondly, scoping reviews concerning the mental health of athletes are scarce, especially in the context of depression. A select number of scoping reviews investigated topics related to: mental health (Kegelaers et al., 2022), depressive symptoms (Tahtinen, Shelley, Morris, 2021), and interventions (Prior, Paphthomas, & Rhind, 2022). What makes this scoping review unique, is that it integrates causes and risk factors of depression, in addition to treatments/interventions for mitigating depression or related symptoms in elite athletes. This scoping review can contribute to existing literature through the thoroughly reviewed treatments for athletes dealing with depression and related symptoms such as anxiety. There is a lack of research for effective treatments for elite athletes suffering from depression, as well as elaboration on why such treatment methods are effective.

Lastly, numerous studies mention the benefit of cognitive behavior therapy when applied
to elite athletes, but little information is provided to develop future treatment methods or conclusions. This scoping review suggests why cognitive behavior therapy benefits athletes, in hopes of developing new treatments and bringing awareness to why cognitive behavior therapy helps athletes. Also, since athletes are destined to not disclose their issues with mental health due to negative stigma, athletes will have more tools to treat themselves if they are unwilling to seek professional help.

**Practical Implications for Reducing Depression in Athletes:** Athletes that are unwilling to seek professional help can still help themselves. As suggested in the discussion section, 3 key factors for an athlete to develop a meaningful life and a strong athletic identity revolve around: identity diversification, virtue, and controllable values.

Identity diversification means to identify with multiple things. All humans, including athletes, are talented at many things. An athlete should diversify their identity by venturing outside of sport, even if it is the most meaningful thing to them at the time; as all sport has a shelf life. Athletes could: cook, weld, read books, hike, kayak, fix cars, cut hair, etc. Anything that an athlete has ever wanted to do, they should make time for; as there are multiple dimensions of life to enjoy. One will never know how much they enjoy something until they try it, although unlikely; perhaps an athlete might find something they enjoy more than sport. At the very least, however, an athlete will eventually find something they look forward to and can identify with.

Virtue could be explained as having high standards of righteousness. Oftentimes, virtue is explained away through character traits such as: courage, integrity, responsibility, etc. The way one develops virtue is by practicing such things, but how does one practice such things? The best way to practice any virtue, is to live life outside of one’s comfort zone. If an athlete is shy,
attempting to talk to others can develop compassion and empathy for others that are shy; and gratitude for those that are extroverted. If an athlete has free time, instead of playing video games, they could volunteer their time for a charity event. Not only does this instill responsibility, but it could instill: conscientiousness, ambition, curiosity, enthusiasm, etc., for other aspects of life. Doing new things also gives any human being, including athletes, a sense of self-confidence. The harder they work to refine themselves in life, the more useful they feel; making them more confident in more situations.

Controllable values are crucial to helping athletes achieve a meaningful life and a healthy athletic identity. Athletes could write out everything that they value most in life on a piece of paper or whiteboard. Athletes could then write out all of their future goals in life or what some would call a dream board. With careful analysis and critical thinking, athletes could dissect whether what they value is within their control, or solely conditional on external factors. Athletes could change their values from being external, if any, to things that they alone can control. After that, athletes could see if they value anything within their control that would keep them from their dreams. This way, they have a clear purpose and vision of what they do and where they want to be; also realizing that whether they get there or not may not be fully within their control. This ensures that they handle both perceived defeat and success gracefully, knowing they did all they could to achieve their dreams.

Limitations

There are many limitations to this study. Most of the data collected is based on self-report surveys, while reliable, clinical depression and mental illness aren’t always accurately depicted through measures of self-report. Also, many studies use different scales to address levels and types of mental illnesses, to assume they’re homogenous measurements is risky. The common
stigma that athletes do not report mental illnesses is true in research. If an athlete does provide feedback, they could easily downplay the severity of their symptoms.

Only accepting research in English limits data, as experiences from people in other countries could prove to be helpful. Mental illnesses are universal, and there could be concrete data that express causes and treatments for depression among competitive athletes.

Excluding the use of kids could prove to be perilous, as many people develop mental illnesses from trauma or other circumstances. There are many problems or risk factors that athletes could potentially develop in childhood, to forego such research could leave out findings that help future researchers and athletes.

**Delimitations**

There are many delimitations to this study. Competitive athletes were of interest because they’re often subjected to the highest amounts of pressure and stress an athlete could undergo. In consequence, they would be more likely to experience the highest of heightened emotional states, both positive and negative contexts. Discovering causes and or risk factors and treatments for competitive athletes suffering from depression, could benefit them and arguably the rest of the population.

Choosing to follow the PRISMA for data collection was to satisfy academic requirements. Although there is useful current data that might not satisfy PRISMA requirements; following the PRISMA requirements ensures the highest quality of research and reliability of the data collected.

Choosing to use research published in English is helpful because there would not be confusion about context or cultural values or current events; as there could potentially be by using research from different countries utilizing different languages.
Choosing to use widely recognized competitive sports such as basketball or baseball is useful because the data associated with such sports are in abundance. Data collected on sports such as e-sports is available, but not in mass quantity or quality when compared to widely recognized sports.
Competitive athletes of all levels struggle with depression. Representation of athletes struggling with depression could be misrepresented due to the negative stigma attached to mental health. If the negative stigma for seeking help for mental health in athletics diminishes, there could be an unprecedented number of athletes that are documented for struggles with mental illness; not limited to but including depression. Overtraining, loss of athletic identity, injury, and involuntary or forced retirement were arguably the most prevalent and key factors for causes and or risk factors for depression in competitive athletes. Other factors are viable and should be considered.

Coping mechanisms, emotional support, and developing intangibles were the most common methods of treatment. Athletes typically coped through informal methods, such as talking to friends or family members. Emotional support was offered through a variety of conduits: spouse, coach, athletic trainer, counselor, teammates, positive self-talk within the athlete, doctors, etc. Intangibles such as gratitude and psychological resilience were discussed, but little was mentioned on how to develop such intangibles, further research is warranted.

An athlete that diversifies their identity, pursues a life of virtue, and formulates their identity through values that they can control could reduce their risk for depression. Further research should be conducted to emphasize the importance or irrelevance of: identity diversification, a life of virtue, and controllable values among competitive athletes suffering from depression.
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