

Sports Injuries and Depression in Athletes: Research the Psychological Impact of Sport Injuries on Mental Health

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Abstract: It is inevitable for athletes to suffer from sports injuries during trainings or athletics. Huge amounts of psychological studies have already showed that physical health is interacted with mental health. Besides, a lot of researches have showed that levels of well-being of athletes can be impacted by sports injuries. In the past, the problems that probabilities of suffering from depression for athletes that coaches or other explorers overlooked in some degree. With the higher frequency of the situation and development of commercial athletics, more and more sports team are paying attention on the psychological issues of athletes instead of superficial recognition about external performance. They are more curious that the reasons why their players decline performance. Within the magnificent change, the loss of psychological dynamics can be a fatal source. Therefore, helping more and more coaches engage in more basic recognition will be trendy. This review paper will explore the relationship between sports injuries and depression, and discuss how sports injuries may lead to depression. This review article would summarize some previous researches about sports injuries and depression, and make endeavours to provide some feasible advice to coaches, athletes, psychological health tutors which can help athletes improve their mental health.

Keywords: Depression, sports injuries, health

1. Introduction

Based on the definition of American Psychology Association, an individual who suffers from depression suffers from extreme sadness and despair for more than a few days. There is a disruption in the activities of daily life, as well as physical symptoms such as pain, weight loss or gain, sleep disturbances, and fatigue [1].

It is estimated that 6.7% of the adult population suffers from depression every year [2]. In accordance with the data of U.S. HHS, 21.0 million adults in the United States had at least one major depressive episode. Adults in the U.S. made up 8.4% of this number [3]. One in fifteen adults suffer depression each year, and one in six people will at some point in their lives. According to a study by Our World In Data, depression affects 3.4% (2-6% when the margin of error is taken into account) of the world's population [4]. The data suggests that depression is becoming more and more popular in the world as year increases.

Besides, Adults experience mental health issues on average, according to one research in 2012. Additionally, according to the USDHS, the prevalence rose to 30% in the 18–25 age group, although only about one-third of those in this age range received treatment. Many players competing in high

school, university, and professional sports fall within this age bracket [5]. In a word, athletes actually are a special group which need to be focused more.

It is really normal for athletes to get injured in different extent through trainings or matches, mild injuries like minor strain, abrasion, severe injuries such as concussion, anterior cruciate ligament (ACL) tears, meniscus tears. Partial athletes can recover from serious wound, while others suffer from depressive symptoms to some certain extent. Understanding why athletes suffer from depression after sports injuries is a key to help them diagnose and instruct them to get out of depression so that get back mental health and athletic confidence.

This review paper will look back previous researches about depression prevalence and post-injuries depression prevalence in athletes. At the same time, through exploring how concussion, ACL and recurrent injuries influence their mental and physical health to see how these injuries increase the potential risk of depression on athletes. Through analyzing psychological impacts after sports injuries, such as stress, anxiety, identification, career termination to explore how these psychological factors rise the risk of suffering from depression. Finally, coping strategies and supporting system will be discussed. Researching the reasons and methods of intervention during rehabilitation through discussing what the role social support and professional supporters play. The innovation point of paper that narrate reasons that sports injuries may lead to depression and purpose some practical advice. The significance of paper that improves the public attention on athletes and awareness of depression on athletes.

2. Depression prevalence in athletes

According to Leigh Golding et al. [6], a system review conducted in 2016 showed that up to 34% elite athletes reported the depressive symptoms after clinical interview based on DSM-4 criteria. DSM-4 is version 4 of Diagnostic and Statistical Manual of Mental Disorders which can be used to conduct clinicians to diagnose patients' symptoms. Nearly one in third athletes have ever sought or acquired psychological support in their career, but only one in seven or 10% athletes got supported by professional instructors [7]. Besides, specific ages period can also be a valuable reference. Looking at college athletes, Andrew Wolanin et al. [8] have pointed out that the prevalence for clinically relevant depressive symptoms in college athlete population was 23.7%. The high depression prevalence of college athletes is due to the loss of structural supports from parents such as physical assistance and psychological care. Within a survey about 257 participating student athletes, over half of athletes (53.5%) showed that they could suffer from at least once injury in the last 12 months. Approximately 4% of the participants reported having a history of clinically diagnosed depression [9]. By the way, a useful measurement method is important as well. Epidemiological Studies Center the Depression Scale (CESD) is a well-known evaluation tool with widespread use in the general population, making precise measurement of depression essential [10]. After the investigation of the score of CES-D in high-performance college athletes, Yang et al. [9] showed that increased depressive symptoms were more common than usual in 6.7% to 34.0% of people. in post-sports injuries. More competitiveness and accidents were identified the increasingly potential risk of depression.

3. Injuries and depression

Severe injuries are a key factor which may lead to depression. While concussion and ACL will be most commonly seen in sports injuries in athletes because career absolutely is heavily impacted by head or knees injuries.

3.1. Concussion

A brain injury that follows a head accident is known as a concussion or traumatic brain injury (TBI). A hit to the head that exerts a large amount of inertial force on the brain may be the culprit [11]. More precisely speaking, Traumatic brain damage (TBI), sometimes known as a concussion, physiological disturbance that can affect the functioning of the brain. It can occur after a trauma that has affected consciousness for less than 30 minutes, any memory loss less than 24 hours [12]. Concussion is a serious sports injury which possibly cause depression for athletes. A systematic review between concussion and depression suggests that after a concussion, symptoms of depression are often present. Additionally, it may aid in the emergence of severe depressive illnesses. Repeated concussions may be a factor in serious depression illnesses that develop later [13]. Using the results of a health questionnaire developed by physicians to investigate the relationship between concussion history and diagnosis of depression among physicians, KM Guskiewicz, et al. found that in retired professional football players with a history of one or two concussions, depression was 1.5 times more common than in those without a history, and in those with more than three previous concussions, depression was three times more common [14]. Based on the previous researches, we temporarily can conclude that there is a statistically significant relation between times of concussion and depression.

Another severe result of depression is suicide which needs to be taken into account. Biological factor will be a good explanation of how concussion may lead to depression. Peskind et al. [15] found that cognitive and behavioral alterations that raise the risk of suicidal conduct may result from structural and functional changes in the brain following SRC. After a concussion, changes in the white matter have been discovered to be linked to an increased risk of suicide because they may modify the parts of the brain that control impulsivity and disinhibition. Common studies have showed that The acute symptoms associated with concussions are usually caused by brain dysfunction that can show up as physical symptoms, balance issues, cognitive issues, somatic symptoms, emotional symptoms, sleep or wakefulness issues, and even loss of consciousness [16]. Collectively, these studies demonstrate that SRC-induced cognitive, emotional, and behavioral changes brought on by minute alterations in the brain could result in act impulsively or even consider the risk of suicide Increase. Behavioral deviations, combined with cognitive impairment and depressive symptoms common in concussion patients, may contribute to the impulsive behavior that characterizes suicide [16].

3.2. ACL

The function of anterior cruciate ligament is that ACL can bolster the knee's stability by fending against rotational and anterior tibial stresses, and if completely torn, may cause meniscal tears, ligament sprains, and cartilage tears [17]. Zampogna et al. [18] reported that about 92% of athletes are physically able to return to their sport after ACL reconstruction. However, it is really normal for athletes to suffer from depression after ACL tears and perhaps it has the potential to increase anxious thoughts around returning to sports. For instance, the fees of surgery. According to report of Mather et al., [19], 55% of athletes were anxious that they were difficult to bear average cost of surgery being over 38,000 dollars. Athletes are distressed that they will face the risk of losing opportunities to acquire salaries due to a long-period rehabilitation. Additionally, Laskowski [20] investigated that Most athletes who undergo ACL rehabilitation lasting six months struggle mentally throughout the process due to grief, mood changes, and mental states. Some studies also found that in the aftermath of a severe injury, professional athletes may develop mood disorder symptoms, change their diet, or engage in risky behaviours [21].

The probability of incurring depression in head injuries is higher than knees injuries. Compared with anterior cruciate ligament (ACL) injury, concussions caused a 7 times greater emotional response. At 11 days after injury, athletes with ACL injuries reported seven times more depression,

while concussed athletes showed three times more depression at 4 days [22]. Some research suggest that depression is associated with concussion and ACL but not just these two specific types of physical injuries [16].

In conclusion, after concussion and ACL tears, athletes tend to change their mood and nutritional diet, show anxiety, bear financial burden related to surgery reconstruction, various kinds of sources of stress which are the important reasons to lead depression.

4. Psychological injuries

It is obvious that physical fracture incurs after sports injuries but solely focusing physical injuries would not acquire comprehensive cognition with sports injuries on athletes. What needs to explore more is psychological impacts. Just like paper mentioned before, various kinds of distress are an extensive aspect which potentially increase the risk of depression on athletes. Focusing on more specific elements will help achieve better understanding on how would lead to depression on athletes.

4.1. Career termination

Present epidemiology has showed that exceptional athletes will appear to be risky to suffer from mental health issues after retiring from athletic fields. A statistical data showed that in former professional footballers, the average age on 35 years old, showing baseline prevalence of 18% for distress, 35% for anxiety or depression, 28% for sleep disturbance and 24% for alcohol misuse [23]. It is popular to see that athletes have psychological issues because of career termination. The situation that Out of expectation on Career termination after severe injuries will become worse. Wippert [24] found in a study within sample of skipping athletes that involuntary career termination was associated with depression significantly. Career termination implicates that there is a huge change about identification which can be risk of causing athletes to be in depressive symptoms. Alfermann et al. [25] investigated that worries about involuntary or planned career termination influences the cognition of personal identification which probably changes athletes' emotions, behaviors in a sample study of 256 European amateur athletes. However, probabilities suffering from depression of unexpected career termination will be higher than planned career termination. This point needs to be engaged in.

4.2. Performance

Most athletes perhaps will show different degrees in decreasing performance in performance after sports injuries. From a psychological opinion, when they feel declines in their athletic performance, they perhaps show negative self-evaluation, feel frustrated and helpless. After investigating German athletes [26], Nixdorf et al. found that male and female athletes will show different psychological responses after sports injuries. Male athletes showed tendency to stabilize moods in shorter period of time than females. Alternatively, female athletes feel worried about falling performance and external evaluation. After competition, depression prevalence will be obviously higher than males.

4.3. Emotions

Cognition and emotions can be readily concealed due to pain of sports injuries. Athletes always recognize that seeking for a help will be shameful and disgraced. While they seem to be burdensome to cope with a couple of problems such as anxiety, eating disorder, stress which sports injuries bring to [27]. Emotional unpredictability leads to uncontrollable behaviours, a study showed that very often frequency of emotional unpredictability is a risk of developing into hysteria, even mania [28].

4.4. Stress

Stress involved into numerous variants which may lead to depression. Athletes maybe lack of self-esteem. Through comparing the score in a stress assessment survey, Gorczynski et al. [29] illustrated high-performance athletes will show levels of self-esteem than normal athletes after sports injuries. They tend to make internal attributions and continuously censure themselves so that increase the risk of depression. Internal stress faced by athletes actually deserved to be discussed more. Awareness on how to view the external stress such as media doubt, public expectation on whether keep high performance as the same as before.

5. Coping strategies

Nowadays there are still lack of tendent researches on the method of treatment. However, coping strategies can be diversified. An assessment questionnaire finished by 48 adolescent athletes suffering from sports injuries over 3 months showed that better coping strategies and supporting system can mitigate the psychological outcomes more effectively [30]. That is the best reason that develop coping techniques and supporting system.

Clark et al. [31] engaged in some researches on how to help athletes alleviate depressive symptoms through improving diets. Eating disorder is one of results of depression. Combining tablets and nutritious diets can recuperate physical health so that improves mental health. Furthermore, engaging some rehabilitating exercise regularly would be capable of achieving the target. Walker et al. [32] introduced an analyzing model to illustrate athletes' levels of well-being are associated with athletes who have overcome the hardship of a protracted recuperation process may be more committed, focused, both physically and mentally resilient via the damage, stronger than they were before extensive bolstering strengthening activities.

Social supporting system is magnificent as well. Researchers have noted variations in collegiate athletes' choices of support networks before and after injuries with regard to seeking support. Family, friends, coaches, and allied health professionals may be more conscious of some changes in their responsibilities prior to and during an accident if they are aware of these differences [33]. The amounts of professional instructors are limited so that from time to time, psychological issues are challenging to be diagnosed and treated. Within a survey for sports therapists and physicians from Europe, America and other regions who acknowledged that they will take advantage of psychological strategies during sports injuries on athletes but commonly they reckon that themselves are deficiency in necessary techniques and knowledge [30]. Therefore, if coaches master a few basic observing tools and knowledge, depression is eligible to be diagnosed by professional clinicians. Last but not least, building supporting system to improve the benefits of athletes is also a pathway. Nowadays, not many researches specific to supporting system on depression on athletes can be found. This exactly shows that loss of professional psychological tutors in labor market. Encouraging more and more social tutors to master fundamental knowledge to screen the psychological impacts of sports injuries can be seen as an endeavor.

6. Conclusion and discussion

The creative point is that the paper narrates comprehensively the reasons why sports injuries will lead to depression on athletes and purposes some practical advice. As the athletic competition is becoming more complicated, situations athletes encounter will be more sophisticated. Diagnosing depression on athletes will need more advanced measurement tools and facilities. Keeping abreast with advanced tools from psychology and recognition of depression is a guarantee to help them fix psychological issues.

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