

REVIEW

Posttraumatic stress disorder (PTSD) in athletes with traumatic sports injuries

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ABSTRACT

This review article aims to provide insight into understanding PTSD symptoms and treatment methods in athletes, with a view to developing effective interventions that address their unique needs. A comprehensive search of the literature was conducted using various databases and a range of keywords, including "posttraumatic stress disorder", "athletes' health", "PTSD symptoms", "sports injuries", and "PTSD treatments". The review included a variety of study types, such as randomised controlled trials, cohort studies and systematic reviews, with the aim of ensuring a comprehensive and diverse range of evidence. In order to ensure a comprehensive and diverse range of evidence, the inclusion criteria for this review were established to filter studies that assess the relationship between post-traumatic stress disorder, athletes' health and sports injuries. The review included a variety of studies, including randomised controlled trials, cohort studies and systematic reviews, with the aim of ensuring a comprehensive and diverse range of evidence. A total of 32 studies were selected for inclusion in this review, with a focus on the relationship between PTSD, metabolic health, and quality of life. In order to ensure the quality and relevance of the selected studies, the search was limited to peer-reviewed articles published in English between 1998 and 2024, and studies of stress disorders not related to physical trauma were excluded because they may not be directly applicable to the topic discussed. The relationship between PTSD and sports injuries is a complex and multifaceted one, and further research would be beneficial in order to gain a deeper understanding of it. It is recognised that athletes may encounter specific difficulties when managing traumatic injuries, which could potentially give rise to psychological distress. By gaining a deeper understanding of the prevalence, risk factors and psychological mechanisms involved, stakeholders can play a more supportive role in helping athletes on their recovery journeys. It would be beneficial for future research to continue exploring effective interventions and developing comprehensive support systems that address both the physical and psychological needs of injured athletes. As research continues to evolve, it would be beneficial for sports medicine physicians and mental health professionals to work collaboratively with athletic trainers and coaches to create comprehensive support systems for athletes experiencing PTSD symptoms and post-traumatic stress. By acknowledging the psychological impact of traumatic sports injuries and implementing evidence-based treatments, it may be possible to create healthier athletic environments that can prioritize both physical and mental well-being.

Keywords: Posttraumatic stress disorder, athletes' health, PTSD symptoms, sports injuries, and PTSD treatments

INTRODUCTION

It may be helpful to explain that Post-Traumatic Stress Disorder (PTSD) is a mental health condition that can develop after experiencing or witnessing a traumatic event. It is thought to be characterized by symptoms such as obsessive thoughts, avoidance behavior, negative mood swings, and hyperarousal [1, 2]. Although PTSD is most commonly associated with soldiers and survivors of violent crime, it is increasingly recognized among athletes who have experienced traumatic sports injuries. The combination of physical injury and psychological trauma can present a unique set of challenges for athletes, coaches, medical professionals, and support systems.

It is crucial to acknowledge that involvement in sports entails the inherent risk of injury, an unfortunate but unavoidable reality of athletic pursuits. Research indicates that athletes may experience psychological distress following injuries, which can potentially manifest as post-traumatic stress disorder (PTSD) [3]. The prevalence of PTSD symptoms among athletes appears to be influenced by various factors, including the type and severity of the injury and individual resilience factors [4].

As sports become more competitive and physically demanding, understanding the psychological impact of injuries is becoming increasingly important. It is fair to say that a number of factors may contribute to the risk of developing PTSD in athletes. It would be

remiss not to consider the nature of the injury (e.g. traumatic brain injury, fractures), the context in which the injury occurred (e.g. during a high-stakes game), and pre-existing psychological conditions [5]. The critical role that social support systems play in an athlete's recovery from both physical and psychological injuries must be emphasized, and it is noteworthy that athletes who feel isolated or unsupported during their recovery are at higher risk of developing PTSD [6, 7, 8].

A better understanding of the psychobiological mechanisms behind PTSD would be beneficial in facilitating more effective interventions on athlete performance and overall well-being. Research suggests that changes in neurotransmission and neuroendocrine responses to stress may potentially contribute to the development of PTSD [9]. For athletes, these biological responses may be further complicated by the physical demands of their sport and the expectations placed on them by coaches, teammates, and fans. Yehuda and LeDoux (2007) suggest that understanding these responses may be useful in developing effective treatments for those affected by PTSD [10]. It is worth noting that PTSD can have a potentially significant impact on an athlete's performance and overall well-being, as symptoms such as concentration difficulties, emotional numbing, and increased anxiety may have an impact on an athlete's ability to compete effectively [11, 12]. Additionally, the stigma surrounding mental health issues in sports may prevent athletes from seeking help,

potentially leading to long-term suffering and poor athletic performance, which can have negative effects on the athlete's quality of life, athletic performance, and overall well-being [13, 14, 15]. It would be useful to consider an integrated approach to addressing PTSD in athletes. This could include a comprehensive strategy that combines physical rehabilitation with psychological support, although cognitive-behavioral therapy (CBT), mindfulness practices, and resilience training could certainly be considered as potential tools to help athletes cope with their experiences [16, 17]. The importance of early intervention to the athlete's quality of life, athletic performance, and overall well-being should be emphasized, as prompt treatment has been shown to help alleviate the long-term effects of PTSD and facilitate a smoother return to sport participation.

MATERIALS AND METHODS

A comprehensive search of the literature was conducted using a range of databases, including the US National Library of Medicine (PubMed), Scopus, EBSCO, MEDLINE, DRJI (Directory of Research Journal Indexing), Embase, Web of Science, Google Scholar, and SportDiscus. In order to gain a comprehensive understanding of the subject matter, a number of keywords were selected for the search. These included key search terms such as "posttraumatic stress disorder", "athletes' health", "PTSD symptoms", "sports injuries", and "PTSD treatments". Furthermore, pertinent literature was identified through the examination of references lists derived from the data searches. To concentrate the results, the search was restricted to peer-reviewed articles published in English between 1998 and

2024. In order to gain a comprehensive understanding of the relationship between posttraumatic stress disorder, athletes' health, "PTSD symptoms, sports injuries, and studies of stress disorders not related to physical trauma were excluded because they may not be directly applicable to the topic discussed., studies had to meet a number of criteria. First, they had to examine the relationship between post-traumatic stress disorder (PTSD), athletes' health, and sports injuries. Second, they had to be published in a peer-reviewed journal. Thirdly, they had to be in English. Following a rigorous selection process, 32 studies were chosen to be included in this review.

RESULTS AND DISCUSSION

Post-traumatic stress disorder (PTSD) can manifest in a variety of ways, and when it does, it can have a significant impact on an individual's daily functioning. Kessler and Wang (2008) estimate the prevalence of PTSD in the general population to be approximately 7-8% [18]. However, it has been observed that this rate can be significantly higher in certain groups, including athletes. It is hypothesized that PTSD symptoms in the general population can be classified into four principal categories, which can be grouped as follows: intrusive thoughts, avoidance behaviors, negative mood swings and hyperarousal [19].

The results of the studies conducted on this topic suggest that there may be a significant prevalence of post-traumatic stress disorder (PTSD) among athletes who have sustained a traumatic injury. A study conducted by Ardern et al. (2016) suggests that approximately 20% of athletes may experience PTSD symptoms following a serious injury

[20]. Moreover, the studies conducted by Iverson et al. (2020) and Lovell et al. (2006) indicate that the severity of the injury and the athlete's previous mental health history may be significant predictors of the development of PTSD [21, 22].

A more profound comprehension of the intricate subtleties of PTSD in athletes will prove invaluable in the creation of more efficacious, targeted interventions. Watson and Preedy (2019) put forth the proposition that it may be beneficial to investigate methods for the early identification of PTSD symptoms and the provision of proactive mental health support, with a view to mitigating the long-term consequences of traumatic injuries [23]. Should this approach prove to have positive effects, it may be advantageous to include mental health education in athletic training programs. Such an approach would undoubtedly have significant health benefits for athletes, as it could potentially facilitate the promotion of resilience and equip athletes with the requisite tools to cope with the psychological consequences of injuries [24].

It is encouraging that new treatments for PTSD in athletes, including trauma-focused cognitive behavioral therapy (TF-CBT) and Eye Movement Desensitization and Reprocessing (EMDR) have shown promise in clinical settings [25]. These therapies are designed to address maladaptive thoughts and facilitate the emotional processing of traumatic memories, which is thought to be essential for recovery. It would be beneficial to consider the effects of PTSD in athletes, as they extend beyond individual well-being and may affect team dynamics, performance, and overall mental health of athletes within the sports community. It has also been observed that the

psychological consequences of traumatic injuries have the potential to result in extended periods away from competition, decreased performance levels, and even career-ending situations [26, 27].

It seems reasonable to suggest that athletes who have experienced traumatic injuries may be more susceptible to developing PTSD as a result of the unique stressors associated with such experiences. It may also be the case that the psychological impact of the injury is intensified when the athlete's identity is closely intertwined with their performance and physical abilities [28]. It would be beneficial, where possible, to gain a deeper understanding of these dynamics in order to develop effective interventions. It seems reasonable to suggest that athletes who experience traumatic injuries may be more susceptible to developing PTSD, given the unique stressors associated with such incidents. Furthermore, the psychological impact of these injuries may be amplified when the athlete's identity is closely intertwined with their performance and physical abilities [29]. It would undoubtedly be beneficial to gain a deeper understanding of these dynamics in order to develop more effective and positive interventions.

In addition to these findings, it appears that athletes with strong support networks, including coaches and teammates, may be less likely to experience PTSD symptoms. This is because social support may play a role in the recovery process [30]. It is also important to consider that individuals without adequate support may be at higher risk of developing chronic PTSD symptoms.

CONCLUSION

It is perhaps inevitable that some degree of injury will occur in the context of athletic competition. Such injuries can often be physically challenging and may also have an impact on mental and emotional well-being. It is possible that athletes may experience mental health conditions such as PTSD after a traumatic sports injury. This article aims to examine PTSD, its symptoms, causes and treatments, with a particular focus on athletes who have suffered traumatic sports injuries.

PTSD is a mental health condition that can potentially affect those who have experienced or witnessed a traumatic event. It should be noted that not everyone who experiences a traumatic event will necessarily develop PTSD. For those who do experience this, it can have a significant impact on their daily lives.

It is thought that PTSD symptoms can be grouped into four categories: intrusive thoughts, avoidance behaviors, negative thoughts and mood, and changes in arousal. It is possible that intrusive thoughts may involve memories, dreams or flashbacks of the traumatic event. It is possible that avoidance behaviors may include avoiding reminders of the event. It is possible that negative thoughts and mood may include feelings of guilt, shame or a negative outlook on life. Some people may find that their arousal and reactivity change, which could involve being easily startled, having difficulty sleeping and experiencing irritability or angry outbursts.

It may be the case that athletes who have suffered traumatic sports injuries are particularly susceptible to developing PTSD, given the sudden and unexpected nature of

such injuries. It is possible that the physical pain, fear and helplessness experienced during and after the injury may contribute to the development of PTSD symptoms. Furthermore, the loss of identity, the fear of re-injury and the potential impact on their athletic career may also play a role in the development and maintenance of PTSD symptoms in athletes.

It is important to recognize that there are a number of factors which can contribute to the development of PTSD in athletes who have sustained traumatic injuries. It seems reasonable to suggest that the severity of the injury and the level of physical and emotional trauma associated with it may play a significant role. It might be suggested that a career-threatening injury that requires extensive rehabilitation or surgery could potentially increase the risk of developing PTSD. It is also thought that the level of social support an athlete receives after an injury may have an impact on their likelihood of developing PTSD. It may be helpful to consider that adequate support from coaches, teammates, and healthcare professionals could potentially help to mitigate the risk.

It is also worth noting that individual factors such as a prior history of trauma, pre-existing mental health conditions and coping styles may also play a role in an athlete's susceptibility to developing PTSD. It may be the case that athletes who have experienced previous traumatic events or who have a history of mental health issues may be more vulnerable. It is also worth noting that athletes who rely heavily on their athleticism as a coping mechanism may potentially face greater challenges when faced with a traumatic injury,

which could in turn increase their risk of developing PTSD.

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