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REVIEW

The Impact of Injury Severity on Sleep Quality in Soccer Players

Vasiliki J. Malliou[1,*], George Pafis[2], Ioannis Ispirlides[2], Katerina Daskalaki[2], and Christos Katsikas[1]

ABSTRACT

Soccer players are particularly vulnerable to musculoskeletal injuries, which not only impact their performance but also significantly affect sleep quality. Pain, inflammation, and psychological stress from injuries frequently lead to sleep disturbances, disrupting essential recovery processes. Moreover, poor sleep can increase the risk of reinjury, creating a cycle that hampers long-term athletic performance. This review synthesizes existing literature on the complex relationship between injury severity and sleep quality in soccer players. It explores how pain and inflammation contribute to sleep disturbances, how disrupted sleep alters recovery mechanisms, and how psychological stress exacerbates both injury outcomes and sleep disruptions. Additionally, it examines the long-term effects of poor sleep on recovery rates and reinjury risk, emphasizing its impact on career longevity. To address these challenges, this review highlights practical strategies for optimizing sleep, including effective pain management, improved sleep hygiene, relaxation techniques, and targeted nutritional interventions. The integration of sleep monitoring tools and individualized approaches can help coaches, trainers, and medical professionals prioritize sleep as a fundamental component of injury recovery. By acknowledging sleep as a key factor in both injury prevention and rehabilitation, this review underscores the need for a holistic approach to athlete care. Enhancing sleep quality can significantly improve recovery outcomes, reduce reinjury risks, and ultimately support sustained performance and well-being in soccer players.

Keywords: Musculoskeletal injuries, sleep quality, soccer players.

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[1] *National and Kapodistrian University of Athens, Department of Physical Education and Sport Science (D.P.E.S.S), Greece.*
[2] *Democritus University of Thrace, Department of Physical Education and Sport Science (D.P.E.S.S) Greece.*

* ***Corresponding Author:***
e-mail: bmalliou@phed.uoa.gr

1. Introduction

A growing body of evidence underscores the profound impact that injuries have not only on an athlete's immediate physical well-being but also on their overall recovery process and subsequent performance levels. Soccer, as a high-intensity sport, is associated with a broad spectrum of injuries, ranging from mild sprains to severe musculoskeletal damage that can prove career-threatening for athletes. While the direct physiological consequences of injuries are well-documented, emerging research highlights the often-overlooked role of sleep quality in the rehabilitation and return-to-play process. Athletes suffering from injuries frequently report disrupted sleep patterns, characterized by increased sleep latency, frequent nocturnal awakenings, and reduced sleep efficiency, which collectively hinder the body's natural recovery mechanisms. Sleep plays a crucial role in muscle protein synthesis, tissue repair, immune function, and hormonal balance, all of which are essential for injury recovery. Inadequate sleep following an injury has been linked to prolonged healing times, increased perception of pain, and higher rates of reinjury. Research by Fullagar *et al.* (2015a) emphasizes the bidirectional relationship between injury and sleep disruption, suggesting that injured athletes who fail to achieve sufficient sleep are more susceptible to chronic inflammation, delayed muscle regeneration, and impaired neuromuscular function. Furthermore, Watson (2017) found that sleep deprivation negatively affects reaction time, cognitive function, and physical endurance, thereby compromising an athlete's ability to return to peak performance levels efficiently. Notably, a study by Milewski *et al.* (2014) reported that adolescent

athletes who consistently slept less than 8 hours per night had a 1.7 times higher risk of injury compared to those who met recommended sleep durations. Moreover, sleep disturbances following an injury are often exacerbated by psychological factors, including anxiety, stress, and depressive symptoms, which are commonly observed in athletes during rehabilitation periods. Haack and Mullington (2005) demonstrated that sleep restriction amplifies pain sensitivity, suggesting that poor sleep not only affects tissue healing but also exacerbates pain perception, further hindering the recovery process. Given these insights, it becomes imperative for sports medicine professionals to incorporate sleep optimization strategies into injury rehabilitation protocols. Implementing personalized sleep hygiene interventions, adjusting training loads, and promoting mindfulness-based relaxation techniques can play a pivotal role in accelerating recovery and improving return-to-play outcomes. Sleep performs a vital function in facilitating muscle repair, enhancing immune function, and supporting mental health, which makes any disruption to this essential state a critical and pressing concern for athletes who find themselves injured (Fullagar *et al*., 2015b). When athletes endure injuries, the repercussions extend well beyond the physical pain itself, deeply affecting their overall well-being, emotional state, and capacity to perform at the highest levels. This interconnectedness between physical injuries and sleep disruption illustrates the urgent need for comprehensive care strategies that address both aspects to help athletes regain their full potential (Charest & Grandner, 2020; Chennaoui *et al*., 2021; Dobrosielski *et al*., 2021).

Numerous studies consistently underscore the highly significant role that sleep plays in the intricate process of recovery of injury. Sleep disturbances have been linked with increasing pain perception, delaying muscle repair, and extending recovery times considerably (Bonnar *et al*., 2018). Furthermore, in addition to these physical impacts, sleep deprivation has been found to correlate directly with impaired cognitive function, diminished concentration, and reduced reaction times, which consequently heightens the risk of experiencing reinjury during rehabilitation (Driller *et al*., 2018). It is therefore essential to thoroughly understand that maintaining proper and consistent sleep patterns can greatly influence not only physical recovery but also overall mental performance during the crucial rehabilitation process. Prioritizing quality sleep should be an integral part of any recovery plan to optimize both physical and cognitive outcomes (Andreucci *et al*., 2021; Chennaoui *et al*., 2021; Longo *et al*., 2021). It is becoming increasingly evident that adequate sleep plays an invaluable role in the rehabilitation journey, and addressing sleep deficiencies should be a priority for optimizing recovery outcomes.

2. The Impact of Injury Severity on Sleep Quality

Injury severity in soccer varies widely, with factors such as match intensity, player workload, and playing position influencing the risk and recovery duration. Recent studies highlight that lower limb injuries, particularly hamstring strains and anterior cruciate ligament (ACL) tears, account for a significant proportion of severe injuries, often leading to prolonged absence from play (Ekstrand *et al*., 2023). Additionally, research suggests that the incidence of severe injuries is higher in competitive matches than in training, with fatigue and inadequate recovery playing key roles (Brito *et al*., 2021). Beyond physical consequences, severe injuries can significantly impact sleep quality, as pain, inflammation, and psychological distress contribute to disrupted sleep patterns and poor recovery. Sleep disturbances following severe injuries can further delay healing and increase the risk of reinjury, highlighting the need for integrated rehabilitation approaches that address both physiological and sleep-related factors. Preventive strategies, including neuromuscular training, load management, and sleep hygiene interventions, have been shown to mitigate injury severity and enhance overall recovery in elite soccer players (Van Dyk *et al*., 2020). Given the critical role of sleep in muscle repair and neuromuscular function, integrating sleep assessments and interventions into rehabilitation protocols could enhance recovery outcomes and reduce reinjury risk (Fullagar *et al*., 2015b).

2.1. Disruptions in Sleep Patterns

Athletes suffering from severe injuries experience significant disruptions in their sleep cycles, leading to detrimental consequences for both their physical and mental health. Numerous studies indicate that sleep fragmentation, frequent nighttime awakenings, and prolonged sleep latency are commonly reported among injured individuals, as noted by Nédélec *et al*. (2015). These issues can severely impact recovery and overall well-being. Severe injuries, particularly those requiring surgical intervention or immobilization, are associated with more pronounced disruptions due to pain, inflammation, and discomfort, which can exacerbate sleep disturbances (Irwin *et al*., 2016).

Furthermore, a comprehensive study by Sahin *et al*. (2025) examined the persistent effects of concussions on sleep quality in adolescent athletes. The findings revealed that athletes with a history of concussions exhibited later bedtimes, reduced total sleep time, increased sleep disturbances, prolonged sleep latency, and higher levels of daytime dysfunction compared to their non-concussed peers. These

results underscore the necessity for targeted interventions aimed at improving sleep quality in athletes with a history of concussions, emphasizing the critical role that adequate sleep plays in their recovery and overall well-being. Such insights highlight the importance of proactively addressing sleep health in the context of athletic injuries.

In soccer, where high-intensity physical exertion, rapid directional changes, and frequent physical contact place athletes at risk of injuries (particularly concussions, muscle strains, and ligament tears), sleep disruptions can significantly hinder performance and rehabilitation. Studies have shown that elite soccer players experiencing inadequate sleep demonstrate decreased reaction times, impaired decision-making, and reduced physical endurance, all of which are critical for optimal on-field performance. Moreover, sleep loss has been linked to an increased likelihood of sustaining injuries, creating a vicious cycle of poor recovery and heightened risk (Fullagar *et al*., 2016). Given the sport's demanding nature, incorporating sleep-focused recovery strategies, such as optimizing sleep hygiene, monitoring sleep patterns, and implementing structured rest protocols, could play a pivotal role in enhancing both short-term recovery and long-term athletic longevity. Addressing sleep disturbances in soccer players is therefore not only essential for post-injury rehabilitation but also for overall performance maintenance and injury prevention.

2.2. Influence of Injury Type on Sleep Quality

Research indicates that individuals with chronic musculoskeletal pain often experience significant sleep problems. A systematic review and meta-analysis by Scholten-Peeters *et al*. (2023) suggests that sleep problems are associated with an increased risk of chronic musculoskeletal pain, highlighting a bidirectional relationship between sleep disturbances and musculoskeletal discomfort. Additionally, a narrative review focusing on the impact of sleep on athletes' performance and injury risk found that obtaining less than 7 hours of sleep is consistently associated with an increased risk of musculoskeletal injury. Athletes experiencing such sleep patterns for at least 14 days had a 1.7 times higher risk of injury (Dinges *et al*., 2018). These findings underscore the importance of adequate sleep in preventing injuries and managing pain among athletes. Addressing sleep disturbances through proper sleep hygiene and interventions is crucial for optimizing recovery and overall well-being.

This discomfort caused by such injuries may compel individuals to adopt awkward sleeping positions, which in turn can exacerbate underlying pain and lead to further sleep disruptions. Additionally, concussions and traumatic brain injuries (TBI) are also well-documented to result in considerable sleep disturbances. These disturbances typically manifest as hypersomnia, insomnia, and a range of issues associated with circadian rhythm dysregulation (Leeder *et al*., 2012). The relationship between injury and sleep is complex, as the pain associated with the injury often leads to difficulties in falling asleep and staying asleep, creating a cycle of unrest that can have lasting effects on both physical health and overall quality of life (Chennaoui *et al*., 2021; Ressler *et al*., 2022).

Comprehensive research underscores that athletes who are in the process of recovering from head injuries demonstrate altered sleep architecture, which includes significant reductions in essential stages of sleep such as REM sleep and slow-wave sleep. This impairment is critical because it directly impacts cognitive functions, complicates emotional regulation, and hinders physiological recovery processes (Fullagar *et al*., 2015a). The interrelation between sleep and recovery emphasizes the need for proper management of these intricate conditions. Employing targeted sleep therapy, maintaining appropriate light exposure, and instituting controlled rest periods are absolutely vital for optimizing rehabilitation outcomes. These strategies not only enhance the quality of sleep but also play a crucial role in ensuring a timely return to normalcy in athletic performance and overall well-being (Hirshkowitz *et al*., 2019).

2.3. Pain and Sleep Deprivation

Pain continues to serve as a central factor in the occurrence of sleep disturbances that often follow various types of injuries sustained by individuals in different walks of life. When acute pain manifests in the body, it triggers the stress response, activating the fight-or-flight mechanism. This reaction leads to an increase in cortisol levels, a hormone released during times of stress. This excessive hormonal surge can significantly disrupt the normal production of melatonin, a crucial hormone responsible for regulating sleep cycles, which ultimately results in poor sleep quality overall (Milewski *et al*., 2014). Moreover, chronic pain conditions tend to exacerbate these sleep-related disruptions, leading to prolonged episodes of sleep deprivation, which can further prolong the healing processes and complicate recovery efforts for individuals suffering from pain (Mah *et al*., 2011). In a comprehensive study, Mohammed *et al*. (2021) investigated the impact of Mindfulness-Based Stress Reduction (MBSR) on injured athletes experiencing both pain and psychological distress. Over an eight-week intervention, participants practicing mindfulness meditation reported significant improvements in pain tolerance and mental health. These findings suggest that incorporating MBSR into rehabilitation programs can effectively enhance both physical and psychological recovery in injured athletes, highlighting the

importance of a holistic approach to treatment. These encouraging findings suggest that psychological interventions can, in fact, be quite effective in managing sleep disturbances that are closely related to pain. Such outcomes emphasize the importance of addressing mental well-being alongside physical recovery efforts, underscoring the necessity of a holistic approach to treatment and rehabilitation.

3. Long-Term Implications of Poor Sleep on Injury Recovery

Chronic sleep disturbances stemming from injury often result in significant long-term performance deficits that can hinder an athlete's success. Sleep deprivation is strongly linked to various issues, including delayed reaction times, impaired cognitive judgment, and an increased susceptibility to new injuries (Milewski *et al*., 2014). Athletes who are enduring consistent sleep disruptions due to injuries frequently exhibit slower healing processes and an increase in psychological distress, which further complicates their ability to return to play effectively (Mah *et al*., 2011).

Research indicates that long-term sleep deprivation has the potential to greatly and negatively affect muscle recovery processes by significantly reducing the production of growth hormones. This hormone is extremely important because it plays a crucial role in tissue repair and regeneration (Hirshkowitz *et al*., 2019). Furthermore, when sleep patterns are disrupted, they have been linked to weakened immune function. This decline in immune response leads to increased susceptibility to infections and prolonged inflammation within the body, both of which can considerably delay and hinder rehabilitation efforts (Fullagar *et al*., 2015b). Maintaining proper sleep hygiene is essential for enhancing recovery and supporting overall health.

A comprehensive systematic review by Gupta *et al*. (2017) examined the relationship between elite sport participation and sleep quality. The study found that elite athletes often experience high levels of sleep disturbances, characterized by longer sleep onset latency, increased sleep fragmentation, non-restorative sleep, and excessive daytime fatigue. These sleep issues are prevalent across various sports and are influenced by factors such as training demands, travel schedules, and competition stress. The findings underscore the critical importance of addressing sleep-related problems to maintain optimal performance and well-being in athletes.

4. Mechanisms Linking Injury Severity to Sleep Disruptions

4.1. Pain and Discomfort

Pain is undeniably a primary factor that significantly disrupts sleep patterns in injured athletes. Numerous studies firmly indicate that pain-related disturbances in sleep can drastically reduce sleep efficiency and delay the onset of deep sleep, which is critically important for the recovery process (Nédélec *et al*., 2015). Injuries, particularly those that involve soft tissue damage or fractures, often result in prolonged discomfort, which in turn leads to frequent nighttime awakenings that can severely impact overall rest. Furthermore, inflammation, which is a natural and biological response to injury, only exacerbates discomfort and contributes to chronic sleep fragmentation experienced by many athletes (Samuels, 2008). This continuous cycle can hinder the recovery journey, making it vital to address both pain management and sleep quality.

4.2. Inflammatory Responses

Injury-induced inflammation significantly elevates the production of cytokines, particularly interleukin-6 and tumor necrosis factor-alpha, both of which are well-documented for their impact on disrupting normal sleep cycles (Samuels, 2008). The body's natural inflammatory response plays a crucial role in the healing process, but it can inadvertently prolong the experience of discomfort, making it challenging for athletes to achieve a truly restful and restorative sleep (Leeder *et al*., 2012). Furthermore, persistent inflammation has been closely associated with an increased likelihood of developing various sleep disorders, such as insomnia, which can complicate and hinder the recovery process even further (Milewski *et al*., 2014). This cycle of inflammation and sleep disruption can create a significant barrier to optimal athletic performance and overall health.

4.3. Psychological Stress

Anxiety and depression that occur following injuries can serve to further exacerbate the difficulties experienced in achieving restorative sleep. Various studies suggest that athletes who are subject to heightened stress levels tend to experience lower overall sleep quality, along with an increased frequency of nocturnal awakenings throughout the night (Leeder *et al*., 2012). The psychological stress related to various factors, including performance expectations, fear of reinjury, and uncertainty about recovery timelines, significantly contributes to the development of sleep-onset insomnia as well as issues

with poor sleep maintenance. In light of these challenges, cognitive behavioral therapy (CBT) and relaxation techniques have been suggested as effective methods to help alleviate these stress-induced sleep disturbances and improve overall sleep quality (Clemente et al., 2021; Mah *et al*., 2011; Montero *et al*., 2022).

5. Practical Strategies to Enhance Sleep Quality in Injured Athletes

Effective pain management strategies, which encompass various methods, including medication, physiotherapy, and alternative techniques such as cryotherapy, play a significant role in enhancing sleep quality (Watson, 2017). The use of non-steroidal anti-inflammatory drugs (NSAIDs) and muscle relaxants can alleviate discomfort, promoting restful sleep. Emerging modalities such as transcutaneous electrical nerve stimulation (TENS) therapy have shown promise in improving sleep quality in individuals with chronic low back pain (Afolalu *et al*., 2018). Additionally, acupuncture has been associated with rapid pain relief among cancer survivors with insomnia, contributing to decreased sleep disturbances (Hirshkowitz *et al*., 2019). New and groundbreaking research increasingly suggests that adopting a multimodal approach to pain management, which thoughtfully integrates physical therapy alongside psychological interventions, not only provides comprehensive pain relief but also enhances the overall quality of sleep experienced by patients (Hirshkowitz *et al*., 2019). Additionally, innovative treatments are under exploration, such as utilizing virtual reality (VR) pain distraction techniques, which are designed to assist injured athletes in managing discomfort more effectively while simultaneously improving sleep outcomes, presenting a novel avenue for intervention in pain management (Smith *et al*., 2020). The combination of these diverse strategies highlights the importance of a holistic approach to pain management, emphasizing the interconnectedness of pain, recovery, and quality sleep.

5.1. Optimizing Sleep Hygiene

Establishing consistent and reliable sleep schedules, reducing screen exposure and engagement with electronic devices before bedtime, and creating a comfortable and soothing sleeping environment are all crucial interventions for significantly improving sleep quality among injured athletes. Research by Vitale *et al*. (2019) emphasizes that maintaining a stable sleep routine and limiting blue light exposure before bed can enhance sleep efficiency, reduce sleep onset latency, and improve overall recovery outcomes. Moreover, Doherty *et al*. (2019) highlight that optimizing sleep hygiene by controlling bedroom temperature, reducing noise, and establishing pre-sleep relaxation techniques can mitigate the negative effects of sleep disturbances on recovery and performance. Strategies such as adjusting room temperature to an optimal level, limiting caffeine intake during later parts of the day, and incorporating calming wind-down routines into the evening have been found effective in promoting better overall sleep quality (Fullagar *et al*., 2015a). Recent findings have begun to emphasize the importance of personalized sleep hygiene practices tailored to individual needs, such as using weighted blankets specifically designed to reduce anxiety-related sleep disturbances and blue-light-blocking glasses to effectively mitigate the negative effects of electronic device exposure in the hours leading up to sleep (Watson *et al*., 2015). Additionally, research highlights that athletes who engage in consistent pre-sleep relaxation rituals, such as taking warm baths, practicing mindfulness exercises, or utilizing aromatherapy with calming scents, often report experiencing higher sleep efficiency as well as faster sleep onset (Bonnar *et al*., 2018).

5.2. Relaxation Techniques

Mindfulness practices, progressive muscle relaxation, and guided breathing exercises can be effective tools in mitigating stress and enhancing sleep quality for individuals of various backgrounds (Mah *et al*., 2011). An increasing body of research suggests that the integration of yoga and meditation into a regular routine can significantly reduce cortisol levels while also improving the ability to fall asleep more quickly in athletes who are in the process of recovering from injury (Nédélec *et al*., 2015). In fact, a comprehensive meta-analysis has shown compelling evidence that athletes who actively incorporate structured relaxation techniques into their training regimens not only experience improved sleep patterns but also see a notable reduction in levels of chronic pain and inflammation that can hinder performance (Leeder *et al*., 2012). Specifically, progressive relaxation training has demonstrated remarkable benefits for athletes who struggle with high levels of stress that are linked to sleep disturbances, ultimately contributing to deeper and more restorative sleep that enhances overall recovery and well-being (Dinani *et al*., 2024; Milewski *et al*., 2014; Riegler *et al*., 2023).

5.3. Nutritional Support

Proper nutrition, which includes a variety of foods that are particularly rich in essential nutrients such as tryptophan, magnesium, and omega-3 fatty acids, has been found to significantly support better sleep quality in athletes (Fullagar *et al*., 2015a). Moreover, the supplementation with melatonin has been studied extensively for its potential benefits in effectively regulating circadian rhythms and improving overall sleep efficiency in injured players (Bonnar *et al*., 2018). Emerging research increasingly indicates that hydration status plays a critical and indispensable role in the regulation of sleep, as studies have shown that dehydration can be linked to the occurrence of nocturnal muscle cramps as well as fragmented sleep patterns, leading to various sleep disturbances Nédélec *et al*. (2015). In addition to hydration, the timing of nutrient intake is another crucial aspect to consider; for example, consuming protein-rich meals before bedtime has been shown to enhance overnight muscle repair and recovery processes, thereby contributing positively to improved sleep outcomes (Watson, 2017). A comprehensive and holistic approach to nutrition for the optimization of sleep should indeed include individualized dietary assessments and targeted supplementation strategies, ensuring that athletes receive the optimal micronutrient support that is specifically tailored to their unique recovery needs and overall health objectives (Hirshkowitz *et al*., 2019). By addressing these components thoughtfully, athletes may experience enhanced recovery and performance through improved sleep quality.

5.4. Sleep Monitoring and Intervention

Sleep monitoring plays a pivotal role in recovery from injuries and the optimization of athletic performance, making it a crucial element for athletes seeking to improve their capabilities and health. The advent of wearable technology has transformed the landscape of sleep analysis, as devices such as actigraphy monitors, sleep tracking rings, and smartwatches have made it possible to gather valuable insights into critical aspects, including sleep duration, efficiency, and various disturbances that can significantly impact an athlete's recovery and overall well-being (Watson, 2017). Through these innovative technologies, athletes can better understand their sleep patterns and make informed decisions to enhance their daily training routines and performance levels.

In clinical settings, the utilization of polysomnography stands out as an advanced method that enables a detailed and comprehensive analysis of sleep architecture. This technique not only helps in identifying potential sleep disorders such as obstructive sleep apnea, which, if left unchecked, can severely affect athletic performance and recovery, but it also provides essential data that can guide treatment and intervention strategies for athletes (Leeder *et al*., 2012). Such thorough assessments can reveal critical insights necessary for optimizing training regimens.

Several validated questionnaires have been meticulously developed to assess the quality of sleep in athletes. These tools are designed to offer structured and systematic ways to understand sleep issues and their impact on performance levels among athletes. Among these are:

5.4.1. Athlete Sleep Behavior Questionnaire (ASBQ)

Developed by Driller *et al*. (2018), this particular tool is designed to identify maladaptive sleep behaviors in athletes, such as inconsistent sleep schedules and poor sleep hygiene practices. It has garnered widespread use in sports research to evaluate sleep patterns comprehensively and pinpoint areas where improvement is necessary (Driller *et al*., 2018).

5.4.2. Pittsburgh Sleep Quality Index (PSQI)

This questionnaire is aimed at assessing the quality of sleep over a one-month period, taking into account important factors such as sleep latency, total duration, and various disturbances that may occur. This tool has been validated within athletic populations and is commonly employed to evaluate sleep quality, specifically in injured athletes, thereby providing essential insights into their recovery (Buysse *et al*., 1989; Gwyther *et al*., 2022).

5.4.3. Insomnia Severity Index (ISI)

This particular tool is vital for measuring the severity of insomnia symptoms. It evaluates significant issues, including difficulty in falling asleep, challenges in maintaining sleep and experiencing early morning awakenings. The ISI is particularly beneficial for athletes who are experiencing chronic sleep disturbances that can hinder their performance and recovery (Bastien *et al*., 2001).

5.4.4. Epworth Sleepiness Scale (ESS)

This questionnaire assesses daytime sleepiness, which can often indicate issues with sleep quality or reveal underlying sleep disorders that may not be immediately apparent. Typically, it is used in conjunction with other sleep assessment tools, enhancing the overall understanding of an athlete's sleep health (Johns, 1991).

Studies suggest that athletes who consistently track their sleep patterns and make necessary adjustments to their training schedules experience not only improved recovery rates but also a noticeable reduction in the risks of injuries. This highlights the critical nature of sleep in athletic performance, underscoring its importance in maintaining optimal health and peak performance levels (Mah *et al*., 2011; Nobari *et al*., 2023). Personalized sleep interventions, which can include tailored cognitive-behavioral therapy for insomnia (CBT-I) along with innovative biofeedback techniques, have been shown to significantly enhance sleep quality among injured athletes. Research indicates that these methods offer promising results in improving both the duration and quality of sleep (Coel *et al*., 2023; Milewski *et al*., 2014). By effectively integrating these advanced strategies into comprehensive rehabilitation programs, sports professionals are empowered to better address and rectify sleep deficiencies. This proactive approach allows for the acceleration of the entire healing and recovery process for athletes, ultimately leading to enhanced performance and reduced injury recurrence in the long run.

6. Conclusion

The bidirectional relationship between the severity of injuries sustained and the quality of sleep experienced by athletes underscores the critical need for comprehensive and well-rounded strategies within the dynamic field of sports medicine. It is essential to approach the issue of sleep disturbances in a multifaceted and holistic manner, which includes the implementation of effective pain management techniques, the establishment of good and consistent sleep hygiene practices, and the incorporation of various relaxation techniques. Moreover, it is equally important to pay close attention to nutrition and to maintain consistent monitoring of sleep patterns and quality. All of these interconnected factors can significantly enhance recovery outcomes for athletes. By prioritizing sleep as an integral and crucial component of injury rehabilitation, soccer players can not only optimize their recovery processes but also minimize the various risks associated with reinjury. In doing so, they can ultimately improve their overall athletic performance, which can lead to better results on the field and a greater quality of life off the field, enhancing both their physical capacities and mental well-being.

Conflict of Interest

The authors declare that they do not have any conflict of interest.

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