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Review Article

Risk Factors for Depression in Elite Athletes: Systematic Review

Short title: Risk factors for depression

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Abstract

This PRISMA systematic review analyzes the risk factors associated with depression in elite athletes. Twelve articles were selected from the SPORTDiscus, SpringerLink, Ovid, and PubMed databases. A high prevalence of depressive and anxious symptoms was found, linked to both external factors (competitive pressure, serious injuries, social expectations, demands of high-performance, and the transition to retirement) and internal factors (personality and resilience). Elite athletes exhibit a vulnerability comparable to the general population, exacerbated by their sporting environment. Therefore, it is necessary to implement appropriate programs addressing the biopsychosocial mechanisms that link competition with depression.

Keywords: Risk factors, depression, professional athletes, mental health.

Introduction

Mental health encompasses all aspects of our emotional, psychological, and social well-being (World Health Organization-WHO, 2001).

In today's society, there are countless types of mental illnesses: Anxiety Disorders, Mood Disorders (depression, mania), etc. These have a higher prevalence and are receiving increased attention among the general population, especially among elite athletes and young adults, as they are the most prone to them, particularly Major Depressive Disorder (MDD) and Persistent Depressive Disorder (PDD) (Putukian & Yeates, 2023). Both are primarily characterised by two symptoms: a depressed mood and anhedonia; they differ mainly in their chronicity—at least two weeks (MDD) and at least two years (PDD). In addition, they have symptoms associated with fatigue or insomnia (American Psychiatric Association, 2022).

As a non-pharmacological alternative, physical activity and sport have proven effective in reducing depressive symptoms (Sarmiento et al., 2025). These two concepts are understood as distinct: sport refers to physical activity performed for a game or competition; and physical activity refers to any bodily movement that requires energy expenditure (Onate, 2019). The importance of physical fitness as a protective factor is increasingly recognised (Cardinalli Rêgo et al., 2023). This protective effect can be explained by the Hormesis Theory, which suggests that moderate stimuli elicit beneficial biological adaptations (Deslandes et al., 2009). Taken together, these findings indicate that moderate daily exercise is the primary factor in reducing symptoms in various mental disorders (Onate, 2019; González-Vila and Peris-Delcampo, 2024).

Currently, athletes are considered unbeatable, examples of overcoming adversity for many people, and often role models. However, elite athletes face a paradox: although exercise is a protective factor, the high pressure and competitive demands they face can negate these

benefits, turning intense training into a risk factor for their mental health (Peris-Delcampo et al., 2024; Peris-Delcampo and Roff , 2023).

In this context, the objective of this study is to identify, using the PRISMA method, the main risk factors that increase depressive symptoms in elite sports.

Methodology

Following the PRISMA guidelines (Page et al., 2021), a systematic search was conducted on the Trobes UV platform (Universitat de Val ncia), consulting the following databases: SPORTDiscus (n=29), SpringerLink (n=137), CUIDEN (n=2), OVID (n=227), and PubMed (n=179).

Table 1. (Inclusion and Exclusion Criteria):

Criteria	Inclusion criteria	Exclusion criteria
Relevance of the topic	Individuals with a history of risk factors, injuries, etc.	No prior history.
Geographic location of the study	Elite or high-performance athletes	Amateur Athletes
Language	English, Spanish, and Portuguese speakers	
Participants	Youth: 15-24 years Young adults: 25-44 years	Age group over 44 years
Context	Team and individual sports	Not at risk of potential COVID-19 consequences, or during the pandemic
Type of publication	Systematic reviews, articles	narrative reviews, editorials, opinion articles
Year of publication	2004-2024	Prior to 2004

The search strategy employed the keywords risk factors, depression, professional athletes, and mental health, along with the Boolean string: “causes of risk factors AND depression AND elite professional athletes.” The screening process and final selection of articles were governed by the inclusion and exclusion criteria detailed in Table 1.

Three additional studies were identified through manual searching and added to the initial records. Screening was performed in two phases: first, a title, keyword, and abstract

review; subsequently, full-text articles were evaluated to confirm eligibility. The detailed selection process is presented in Figure 1.

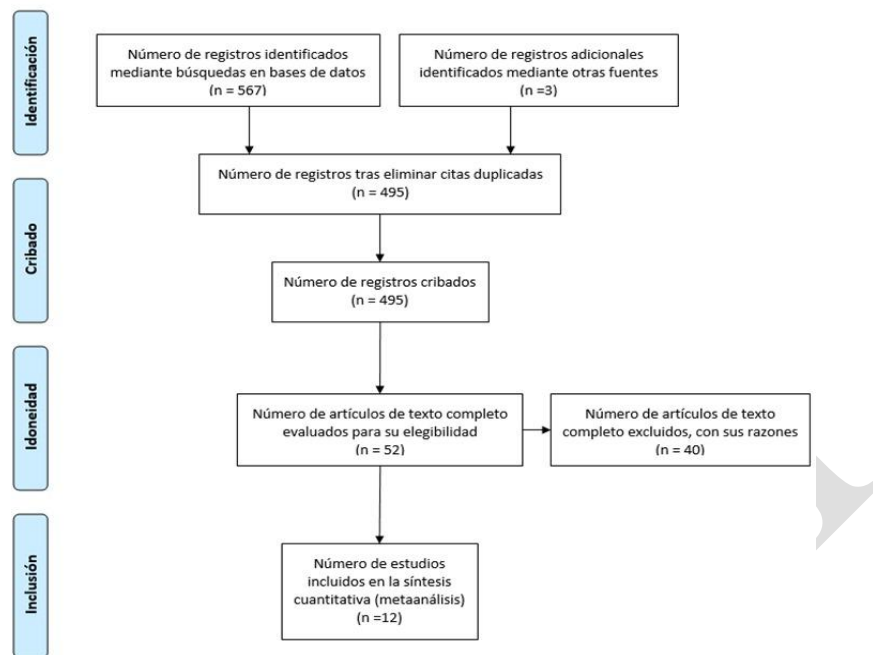


Figure 1. Flowchart of the review performed

Results

The following table (Table 2) lists the main characteristics of the 12 selected items.

Discussion and Conclusions

The high-performance environment acts as a catalyst for systemic risk factors, where chronic stress and media pressure are key determinants in the development of depressive symptoms (Gutiérrez-Báez, 2023). Serious injuries stand out as a critical variable (Wolanin et al., 2015; Goutteborge et al., 2017; Reardon, 2021), such as musculoskeletal injuries in soccer players, which are associated in the long term with the onset of depressive episodes (Goutteborge et al., 2016).

Table 2. Main characteristics of the selected items.

References (authors/year)	Study type	Population	Objective	Methodology	Total Articles/subjects	Age of Participants	Sport	Risk Factors	Results
Gutiérrez Báez, P. (2023)	Narrative review	Elite Athletes	Analyze mental disorders in elite athletes	Literature Review	50 articles	Not specified	Multiple	Competitive pressure, external expectations	High prevalence of anxiety and depression.
Cardinalli Rêgo, D., et al. (2023)	Cross-sectional study	Athletes and Non-Athletes	Compare the tendency towards depression between athletes and non-athletes	Survey	200 subjects	18-35 years	Multiple	Competitive stress, sport-life balance	Athletes are less prone to depression than non-athletes.
Carmody, S., et al. (2022)	Scope review	Former Professional Football players	Review health conditions in former professional football players	Literature Review	30 articles	Not specified	Soccer	Accumulated injuries, lack of post-retirement support	High prevalence of osteoarthritis and mental health problems.
Deslandes, A., et al. (2009)	Narrative review	General	Explore the relationship between exercise and mental health	Literature Review	Not specified	Not specified	Multiple	Sedentary lifestyle, lack of physical activity	Exercise improves mental health and reduces symptoms of anxiety and depression.
Gouttebauge, V., et al. (2015)	Cross-sectional study	Professional Footballers	Examine mental and psychosocial health among current and retired soccer players.	Survey	607 subjects	Average 27.3 years (current),	Soccer	Injuries, competitive pressure, lack of support	Higher prevalence of anxiety and depression in retired athletes compared to current athletes.
Gouttebauge, V., et al. (2016)	Cross-sectional study	Professional Footballers	Investigate the association between severe musculoskeletal injuries and mental disorders	Survey	540 subjects	22-35 years	Soccer	Serious musculoskeletal injuries	Serious injuries are associated with a higher prevalence of mental disorders.
Putukian, M., & Yeates, K. O. (2023)	Clinical commentary	Teen and Young Adult Athletes	Analyze depression and anxiety in young athletes	Literature Review, Clinical Commentary	Not specified	Teenager and young adult	Multiple	Academic and athletic stress, hormonal changes	High prevalence of anxiety and depression; early intervention is needed.
Yang, J., et al. (2007)	Cross-sectional study	University Student-Athletes	Examine the prevalence and risk factors of depression in college athletes.	Survey	257 subjects	Average 19.9 years	Multiple	Academic stress, training load	21% of athletes reported depressive symptoms, associated with heavier training loads.
Onate, J. (2019)	Narrative review	Ultra-Athletes	Review depression in ultra-endurance athletes and make recommendations	Literature Review	Not specified	Not specified	Ultra-resistance	Extreme fatigue, isolation, injuries	High prevalence of depressive symptoms; recommendations for intervention.
Wolanin, A., et al. (2015)	Narrative review	General	Explore depression in athletes	Literature Review	Not specified	Not specified	Multiple	Competitive stress, injuries, sport-life balance	High prevalence of depression compared to the general population.
Reardon, C. (2021)	Narrative review	Recreational and Elite Athletes	Analyze mental health in athletes from recreational to elite	Literature Review	Not specified	Not specified	Multiple	Competitive stress, injuries, media pressure	High prevalence of anxiety and depression at all levels of competition.
Gouttebauge, V., et al. (2017)	Cross-sectional study	Current and Retired Dutch Elite Athletes	To examine the prevalence and risk indicators of mental disorders in Dutch athletes.	Survey	262 subjects	Average 26.4 years (current), 34.8 years (retired)	Multiple	Injuries, post-retirement transition	Anxiety and depression are higher in retired athletes.

Psychological support is imperative both during an active career and in the post-retirement phase, and should be addressed in a comprehensive and holistic manner (Gutiérrez-Báez, 2023; Carmody et al., 2022; Gouttebarga et al., 2015).

This systematic review raises questions for future research: (1) to delve deeper into the specific mechanisms by which competitive pressure and expectations contribute to the development of this mental illness; (2) to determine which specific modalities are most beneficial in intervention programs and to explore the mechanisms by which competitive pressure alters well-being, considering longitudinal studies that assess mental health throughout an athlete's entire professional career; and (3) to evaluate the specific work of mental health professionals, especially sports psychologists, and related concrete and optimal strategies, to develop specific depression prevention programs for elite athletes.

In conclusion, this review underscores the need to address mental health holistically, implementing preventative programs that deconstruct social taboos and prioritise psychological well-being alongside physical performance.

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