



Managing Athlete Anxiety: A Comprehensive Review of Psychological Interventions in Sports Psychology

Amir Mohammad. Abdollahi Dehkordi¹ , Hamdi Chtourou^{2,3*} 

¹ Department of behavioral and cognitive sciences, faculty of sport sciences and health, university of Tehran, Tehran, Iran

² High Institute of Sport and Physical Education, University of Sfax, Tunisia

³ Research Unit, Physical Activity, Sport, and Health, UR18JS01, National Observatory of Sport, Tunisia

* Corresponding author email address: h_chtourou@yahoo.fr

Article Info

Article type:

Review Article

How to cite this article:

Abdollahi Dehkordi, A.M., & Chtourou, H. (2023). Managing Athlete Anxiety: A Comprehensive Review of Psychological Interventions in Sports Psychology. *Health Nexus*, 1(4), 48-53. <https://doi.org/10.61838/kman.hn.1.4.6>



© 2023 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Anxiety in athletes is a pivotal factor affecting performance, mental health, and career longevity. This comprehensive review synthesizes current research on psychological interventions aimed at managing athlete anxiety, offering insights into their effectiveness and applicability in sports psychology. Employing a systematic methodology, the review analyzes studies from peer-reviewed journals published between 2010 and 2023, focusing on interventions such as cognitive-behavioral therapy, mindfulness, relaxation techniques, and motivational interviewing. The findings indicate that tailored, context-specific interventions yield the most significant improvements in reducing anxiety and enhancing athletic performance. Moreover, the review highlights the need for holistic approaches that consider individual athlete needs, sport-specific demands, and cultural factors. The synthesis of empirical data suggests that integrating psychological interventions into athletes' training regimes can lead to positive outcomes in both mental well-being and performance. This review underscores the importance of psychological support in sports and serves as a resource for practitioners and researchers in developing effective strategies for managing athlete anxiety.

Keywords: Cognitive, Psychology, Sports, Review.

1. Introduction

Athlete anxiety is a prevalent issue in sports psychology, significantly impacting performance and well-being. Anxiety in athletes manifests in various forms,

including cognitive, somatic, and emotional symptoms, each affecting athletes differently. The Sports Anxiety Scale-2 (SAS-2) has been identified as a sensitive measure for detecting anxiety in college athletes, highlighting the need for accurate assessment tools in this domain (1).

Understanding and managing athlete anxiety is crucial due to its profound impact on performance, concentration, and self-confidence. Anxiety can hinder an athlete's ability to perform optimally in high-stakes situations, making it a significant barrier to achieving peak performance (2).

Psychological interventions in sports psychology encompass a range of techniques, including cognitive-behavioral therapy, mindfulness, relaxation strategies, and motivational interviewing. These interventions are designed to address the various manifestations of anxiety in athletes, aiming to enhance their mental resilience and performance (3).

This review aims to provide a comprehensive analysis of psychological interventions used in sports psychology to manage athlete anxiety. It seeks to evaluate the effectiveness of these interventions and offer insights into their practical applications.

2. Methods and Materials

This review employs a systematic approach to identify, analyze, and synthesize research on psychological interventions for managing athlete anxiety in sports psychology. The methodology is structured to ensure comprehensive coverage of relevant literature, adhering to principles of rigor and reproducibility.

2.1. Data Collection

To collate pertinent literature, a thorough search was conducted across several electronic databases, including PubMed, PsycINFO, Scopus, and Google Scholar. The search strategy combined keywords and phrases related to athlete anxiety and psychological interventions. Examples of these search terms include "athlete anxiety," "sports psychology," "psychological interventions in sports," "cognitive-behavioral therapy and athletes," "mindfulness in sports," and "performance anxiety in athletes."

Studies were selected based on the following inclusion criteria:

- Published in peer-reviewed journals between 2020 and 2023.
- Focused on psychological interventions for anxiety in athletes.
- Included empirical data on intervention outcomes.

The exclusion criteria were as follows:

- Non-empirical studies such as editorials, commentaries, and reviews.
- Studies not written in English.

- Research focusing on non-athletic populations or non-anxiety related interventions.

Selected articles underwent a data extraction process, where key information such as study design, participant characteristics, type of intervention, and outcome measures were collated. This process enabled a detailed understanding of the methodologies employed, intervention strategies used, and the effectiveness of these interventions in managing athlete anxiety.

To ensure the reliability and validity of the findings, a quality assessment of the selected studies was conducted. This assessment examined aspects such as study design, sample size, intervention detail, and the robustness of outcome measures. Studies that did not meet a predefined quality threshold were excluded from the review.

2.2. Data Analysis

The information gathered was categorized based on thematic relevance to the review's objectives. Each study was evaluated for its methodology, results, and contribution to the understanding of cognitive psychology in sports. The review particularly emphasized the effectiveness of different cognitive training interventions and the practical application of cognitive strategies in sports settings. The synthesis aimed to critically examine the evidence, identify patterns and gaps in the current literature, and assess the practical implications of the findings.

The synthesis of extracted data involved a narrative approach, given the heterogeneity of interventions and outcome measures. This approach allowed for a comprehensive discussion of the findings, focusing on the effectiveness of various psychological interventions in managing athlete anxiety among athletes and the context in which these interventions are most effective.

3. The Nature of Athlete Anxiety

Types and Causes of Anxiety in Athletes: Athlete anxiety manifests in various forms, including cognitive, somatic, and emotional symptoms. Cognitive anxiety involves worry and negative thoughts about performance, while somatic anxiety includes physical symptoms like increased heart rate and sweating. Emotional symptoms can range from feelings of nervousness to intense fear. The causes of athlete anxiety are multifaceted, often stemming from the pressure to perform, fear of failure, and high-stakes competition environments. The relationship between coaching behaviors and athlete anxiety has been studied,

indicating that certain coaching styles can either alleviate or exacerbate anxiety levels in athletes (4).

Impact on Performance: Anxiety significantly impacts an athlete's performance. High levels of anxiety can impair concentration, disrupt motor coordination, and lead to suboptimal decision-making. It can also affect an athlete's confidence and self-esteem, further hindering performance. Research has shown that different types of anxiety have varying impacts on competition results, with cognitive and somatic anxieties influencing athletes differently based on their level of competition and sport type (5).

Assessment and Measurement: Accurate assessment of athlete anxiety is crucial for effective intervention. Tools like the Athlete Anxiety Questionnaire have been developed to measure anxiety, self-confidence, and concentration during high-stakes contests, providing valuable insights for sports psychologists and coaches (2).

4. Psychological Interventions

Cognitive-Behavioral Techniques: Cognitive-behavioral therapy (CBT) is widely used to manage athlete anxiety. It involves identifying and challenging negative thought patterns and beliefs, and replacing them with more constructive and realistic ones. CBT has been effective in regulating competitive anxiety and improving executive functions in athletes (6).

Mindfulness and Relaxation Strategies: Mindfulness-based interventions have shown promise in reducing anxiety and stress in athletes. These interventions focus on present-moment awareness and non-judgmental acceptance of thoughts and feelings. Relaxation techniques, such as progressive muscle relaxation and deep breathing exercises, are also commonly used to manage somatic symptoms of anxiety (7).

Motivational Interviewing and Other Emerging Interventions: Motivational interviewing is a client-centered approach that helps athletes explore and resolve ambivalence toward change. It has been effective in enhancing motivation and reducing anxiety. Other emerging interventions include imagery-based techniques and autogenic training, which have shown effectiveness in managing performance anxiety (8, 9).

5. Effectiveness of Interventions

Review of Empirical Studies: Empirical studies have demonstrated the effectiveness of various psychological interventions in reducing athlete anxiety. For instance,

mindfulness-based interventions have been found to significantly reduce symptoms of anxiety and stress, and increase psychological well-being in athletes (7).

Comparative Analysis of Different Interventions: Comparative analyses of different psychological interventions indicate varying levels of effectiveness. For example, CBT and mindfulness-based interventions have both shown significant positive effects on athlete anxiety, but the extent of these effects can vary based on the individual athlete's needs and the specific nature of the intervention (10).

Considerations for Practice: When selecting psychological interventions for athlete anxiety, it is important to consider the individual athlete's specific symptoms, preferences, and the context of their sport. Tailoring interventions to the athlete's unique situation can enhance their effectiveness and ensure a more personalized approach to anxiety management (11).

6. Discussion

The review has illuminated the complex nature of athlete anxiety, highlighting its various forms and underlying causes. Anxiety in athletes, characterized by cognitive, somatic, and emotional symptoms, can stem from performance pressure, coaching styles, and high-stakes environments. Psychological interventions, including cognitive-behavioral techniques, mindfulness, and motivational interviewing, have shown effectiveness in managing this anxiety. The Sports Anxiety Scale-2 (SAS-2) and the Athlete Anxiety Questionnaire (AAQ) have emerged as valuable tools for assessing anxiety levels, providing a foundation for tailored intervention strategies (1, 2).

6.1. Theoretical and Practical Implications

Theoretically, these findings underscore the importance of a holistic approach to athlete anxiety, considering both psychological and environmental factors. Practically, this necessitates the integration of mental health strategies into athletic training and coaching. Coaches and sports psychologists play a crucial role in recognizing and addressing anxiety, emphasizing the need for their training in mental health management (12).

6.2. Limitations of Current Research

Current research on athlete anxiety management has limitations, including small sample sizes and a focus on high-performance athletes, potentially overlooking recreational or youth athletes. Additionally, there is a need for more longitudinal studies to assess the long-term effectiveness of psychological interventions.

6.3. Recommendations for Coaches, Psychologists, and Athletes

Coaches should be trained to recognize signs of anxiety and adopt coaching styles that mitigate rather than exacerbate stress. They should also facilitate an environment where athletes feel comfortable discussing mental health issues.

Sports psychologists are encouraged to use validated tools like the SAS-2 and AAQ for accurate assessment and to develop personalized intervention strategies. Staying updated with the latest research and techniques in sports psychology is crucial for providing effective support.

Athletes should be educated about the nature of anxiety and its impact on performance. They should be encouraged to engage in self-care practices and seek help when needed. Building a culture where discussing mental health is normalized can significantly benefit athlete well-being.

Managing athlete anxiety is a critical aspect of sports psychology, requiring collaboration between coaches, psychologists, and athletes. While psychological interventions are effective, ongoing research and personalized approaches are essential. A holistic approach that addresses both the mental and environmental aspects of athlete anxiety can lead to better performance and overall well-being.

7. Future Directions in Research

Future research in managing athlete anxiety in sports psychology should focus on diverse populations, longitudinal studies, and the integration of technological solutions. Personalized interventions, nutritional approaches, and interdisciplinary collaborations are promising areas for new strategies. The evolving nature of sports psychology underscores the importance of mental health and well-being in athletes, guiding future research directions.

7.1. Areas Needing Further Investigation

Diverse Athlete Populations: Future research should focus on diverse athlete populations, including recreational and youth athletes, to understand how anxiety manifests across different groups. Studies should also consider the influence of gender, age, and cultural background on athlete anxiety, as these factors can significantly impact the experience and management of anxiety (13).

Longitudinal Studies: There is a need for longitudinal studies to assess the long-term effectiveness of psychological interventions for athlete anxiety. Such studies can provide insights into the sustainability of intervention outcomes and the potential for relapse or continued improvement over time (14).

Integration of Technological Solutions: Investigating the role of technology, such as mobile apps and virtual reality, in managing athlete anxiety can open new avenues for intervention. These technologies can offer personalized, accessible, and innovative approaches to anxiety management (15).

7.2. Potential for New Intervention Strategies

Personalized Interventions: Future research should explore the development of personalized intervention strategies that cater to individual athletes' needs. This approach can enhance the effectiveness of interventions by considering the unique psychological profiles and specific stressors faced by each athlete (16).

Nutritional and Biological Approaches: Investigating the role of nutrition and biological factors, such as gut microbiota, in managing athlete anxiety can provide a more holistic approach to intervention. For example, the effectiveness of probiotics in improving athletes' state anxiety under stress situations warrants further exploration (17).

7.3. The Evolving Nature of Sports Psychology

Interdisciplinary Approaches: The field of sports psychology is evolving to include interdisciplinary approaches that integrate insights from psychology, nutrition, technology, and exercise science. This evolution can lead to more comprehensive and effective strategies for managing athlete anxiety (18).

Focus on Mental Health and Well-being: There is a growing recognition of the importance of mental health and well-being in athletes. Future research should continue to

emphasize the development of interventions that not only enhance performance but also contribute to the overall mental health of athletes (19).

8. Conclusion

This comprehensive review has underscored the multifaceted nature of athlete anxiety in sports psychology, highlighting its various forms, underlying causes, and the impact on performance. Key findings reveal that athlete anxiety encompasses cognitive, somatic, and emotional dimensions, influenced by factors such as performance pressure, coaching styles, and competitive environments. Psychological interventions, including cognitive-behavioral techniques, mindfulness, relaxation strategies, and motivational interviewing, have been identified as effective in managing this anxiety. Empirical studies support these interventions, demonstrating significant improvements in reducing anxiety symptoms and enhancing overall well-being in athletes.

Managing athlete anxiety is not merely about enhancing sports performance; it is also about fostering the overall mental health and well-being of athletes. The review highlights the crucial role of sports psychologists, coaches, and athletes themselves in recognizing, addressing, and managing anxiety. The integration of mental health strategies into athletic training and coaching is essential for creating a supportive environment that acknowledges and addresses mental health challenges. This holistic approach ensures that athletes are not only physically fit but also mentally resilient, capable of handling the pressures and challenges inherent in competitive sports.

For practitioners, including coaches and sports psychologists, there is a call to action to integrate the findings of this review into their practice. This integration involves being vigilant in recognizing signs of anxiety, employing effective psychological interventions, and fostering an environment where athletes feel comfortable discussing mental health issues. For researchers, the review highlights the need for further investigation into diverse athlete populations, longitudinal studies on the effectiveness of interventions, and the exploration of new, innovative intervention strategies, including technological solutions. There is also a call for interdisciplinary research that combines insights from psychology, nutrition, technology, and exercise science to develop more comprehensive and effective strategies for managing athlete anxiety.

In conclusion, managing athlete anxiety is a critical aspect of sports psychology, requiring a collaborative and holistic approach. The effective management of anxiety not only enhances athletic performance but also contributes significantly to the mental health and well-being of athletes. Practitioners and researchers are encouraged to continue exploring and implementing strategies that address this vital aspect of athlete development and care.

Authors' Contributions

Amir Mohammad Abdollahi Dehkordi: Contributed to the conceptualization of the review and the design of the research methodology. Conducted literature searches and data extraction. Participated in the analysis and synthesis of research findings. Played a significant role in drafting the manuscript and revising it critically for intellectual content.

Hamdi Chtourou: Provided leadership in conceptualizing the review and defining its scope. Supervised the literature review process and data synthesis. Contributed to the interpretation of findings and critical discussions within the manuscript. Played a major role in manuscript writing and revision.

Overall, both authors contributed substantially to the comprehensive review of psychological interventions for managing athlete anxiety in sports psychology. Their collaborative efforts ensured a systematic synthesis of current research findings, providing valuable insights for practitioners and researchers in the field.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethics Considerations

Since this study is a literature review, it did not involve direct interaction with human participants. However, ethical considerations such as the proper citation and acknowledgment of sources were rigorously followed.

References

- Cherry N, Morgan K, Larson K, Shumway K, Andrews G, editors. Sports Anxiety Scale-2: More Sensitive to College Athlete Anxiety. Archives of Clinical Neuropsychology; 2020: OXFORD UNIV PRESS, ENGLAND.
- Trpkovici M, Makai A, Prémusz V, Ács P. Athlete anxiety questionnaire: the development and validation of a new questionnaire for assessing the anxiety, concentration and self-confidence of athletes. *Frontiers in Psychology*. 2023;14:1306188. [PMID: 38192388] [PMCID: PMC10773854] [DOI]
- Herrero CP, Jejurikar N, Carter CW. The psychology of the female athlete: how mental health and wellness mediate sports performance, injury and recovery. *Annals of Joint*. 2021;6. [DOI]
- Cho S, Choi H, Kim Y. The relationship between perceived coaching behaviors, competitive trait anxiety, and athlete burnout: A cross-sectional study. *International journal of environmental research and public health*. 2019;16(8):1424. [PMID: 31010073] [PMCID: PMC6517960] [DOI]
- Zhang L. INFLUENCE OF ATHLETES' ANXIETY ON COMPETITION RESULTS. *Revista Brasileira de Medicina do Esporte*. 2023;29:e2022_0551. [DOI]
- Tóth R, Turner MJ, Mannion J, Tóth L. The effectiveness of rational emotive behavior therapy (REBT) and mindfulness-based intervention (MBI) on psychological, physiological and executive functions as a proxy for sports performance. *BMC psychology*. 2023;11(1):442. [PMID: 38104142] [PMCID: PMC10724889] [DOI]
- Myall K, Montero-Marin J, Gorczynski P, Kajee N, Sheriff RS, Bernard R, et al. Effect of mindfulness-based programmes on elite athlete mental health: a systematic review and meta-analysis. *British journal of sports medicine*. 2022. [PMID: 36223914] [DOI]
- Munroe-Chandler KJ, Loughhead TM, Zuluev EG, Ely FO. An imagery-based intervention for managing anxiety in esports. *Journal of Imagery Research in Sport and Physical Activity*. 2023;18(s1):20230005. [DOI]
- Yumkhaibam AH, Farooque S, Bhowmik SK. Effectiveness of Autogenic Training on Reducing Anxiety Disorders: A Comprehensive Review and Meta-Analysis. 2023. 2023;10(3). [DOI]
- Niering M, Monsberger T, Seifert J, Muehlbauer T. Effects of Psychological Interventions on Performance Anxiety in Performing Artists and Athletes: A Systematic Review with Meta-Analysis. *Behavioral Sciences*. 2023;13(11):910. [PMID: 37998657] [PMCID: PMC10669558] [DOI]
- Clinkscales N, Golds L, Berlouis K, MacBeth A. The effectiveness of psychological interventions for anxiety in the perinatal period: A systematic review and meta-analysis. *Psychol Psychother*. 2023;96(2):296-327. [PMID: 36504355] [DOI]
- Fadare AS, Langco L, Canaliya C, Kabirun CA, Abelardo-Sabandija BJ. Athletes' Confidence and Anxiety Management: A Review in Achieving Optimal Sport Performance. *International Journal of Science and Management Studies*. 2022;5(4):311-8. [DOI]
- Marín-González FH, Portela-Pino I, Fuentes-García JP, Martínez-Patiño MJ. Relationship between sports and personal variables and the competitive anxiety of Colombian elite athletes of Olympic and Paralympic sports. *International Journal of Environmental Research and Public Health*. 2022;19(13):7791. [PMID: 35805450] [PMCID: PMC9265379] [DOI]
- Razak GE. Bibliometric Analysis: Psychology in Sport. *Development*. 2023;12(2):808-18. [DOI]
- Dunne DM, Lefevre-Lewis C, Cunniffe B, Impey SG, Tod D, Close GL, et al. Athlete experiences of communication strategies in applied sports nutrition and future considerations for mobile app supportive solutions. *Frontiers in Sports and Active Living*. 2022;4:911412. [PMID: 36172339] [PMCID: PMC9512279] [DOI]
- Ha J, Kim J-S, Shin Y-A. The Structural Relationship among Self-Management, Sports Confidence, Competition State Anxiety, Exercise Continuity toward of Youth Taekwondo Breaking Athlete. *The Korea Journal of Sport*. 2022;20(2):655-69. [DOI]
- Dong W, Wang Y, Liao S, Tang W, Peng L, Song G. Bifidobacterium animalis subsp. lactis BB-12 improves the state anxiety and sports performance of young divers under stress situations: a single-arm, prospective proof-of-concept study. *Frontiers in psychology*. 2021;11:570298. [PMID: 33519585] [PMCID: PMC7838085] [DOI]
- McCartney D, Benson MJ, Desbrow B, Irwin C, Suraev A, McGregor IS. Cannabidiol and sports performance: a narrative review of relevant evidence and recommendations for future research. *Sports Medicine-Open*. 2020;6:1-18. [PMID: 32632671] [PMCID: PMC7338332] [DOI]
- Limballe A, Kulpa R, Bennett S. Using blur for perceptual investigation and training in sport? A clear picture of the evidence and implications for future research. *Frontiers in Psychology*. 2022;12:752582. [PMID: 35308077] [PMCID: PMC8926072] [DOI]