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Mental Health in Team Sports: Etiology, Performance Impact, Barriers, and Interventions – A Literature Review

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ABSTRACT

Background: Elite sports generate extreme stressors (rigorous training, pressure, injuries), causing a high prevalence of common mental disorders, including depression and anxiety. Unfortunately, this topic remains highly stigmatized. Fear of losing contracts or status deters athletes from seeking psychological help, creating a severe treatment gap while prioritizing physical health.

Aim of the study: This study comprehensively analyzes mental health challenges in elite team sports. It investigates the etiology of these disorders, their impact on performance and injuries, barriers to help-seeking, and preventive and therapeutic strategies (e.g., load optimization, mindfulness) safeguarding athletes well-being.

Material and methods: A comprehensive literature review was conducted to evaluate mental health in elite team sports. The analysis synthesized epidemiological data, psychometric assessments (e.g., POMS), and clinical trials evaluating I-ACT. Data across disciplines, such as basketball and hockey, were examined to identify systemic stressors and underlying biological mechanisms.

Results and conclusions: High common mental disorders prevalence in athletes is driven by systemic stressors and injuries. Stigmatization induces a severe treatment gap. Optimal load management, mindfulness, and tailored interventions (I-ACT) are imperative to mitigate distress and safeguard psychological well-being.

Keywords: mental health, team sports, performance impact, barriers, interventions, depression

INTRODUCTION

While elite team sports are universally associated with peak physical conditioning and objective success, the psychological well-being of professional athletes has increasingly emerged as a critical area of scientific concern [1]. Athletes competing in highly demanding team sports - such as basketball, football, handball, ice hockey, field hockey, and beach volleyball - face a unique array of extreme psychosocial and physical stressors [2, 3, 4, 5, 6]. These structural and interpersonal stressors include rigorous training volumes and congested match schedules, severe musculoskeletal injuries and subsequent rehabilitation periods, early sport specialization leading to identity foreclosure, immense performance expectations, and financial instability or poor team communication [1, 4, 5, 6, 7, 8, 9].

Consequently, the prevalence of common mental disorders (CMD) - particularly depression, generalized anxiety disorder, and burnout - is substantial in elite athletic populations [3, 4, 8]. While some studies suggest that the prevalence of depression in certain elite cohorts (such as Swiss football players or German field hockey players) is similar to or even lower than that of the general population [5], other populations exhibit alarmingly high rates. For instance, up to 71.2% of professional female beach volleyball players report clinically relevant depressive symptoms, and over 56% of Icelandic handball players experience symptoms of anxiety and depression [6]. Furthermore, evidence consistently shows that female athletes report significantly higher rates of depression and anxiety than their male counterparts [3, 5, 6, 8]. Despite this high vulnerability, mental health issues remain heavily stigmatized within the sports community [3, 6, 8]. This stigmatization contributes to a significant treatment gap; for example, while many athletes report symptoms of distress, a mere fraction utilizes professional psychotherapeutic support, often prioritizing somatic care and preferring to consult physiotherapists instead [3, 5, 8]. Therefore, this paper provides a comprehensive analysis of mental health challenges in elite team sports. It explores their etiology and prevalence, their relationship with athletic performance and injuries, the systemic barriers preventing help-seeking behaviors, and the **multidisciplinary preventive and therapeutic strategies** - such as mindfulness, optimal load management, and targeted verbal encouragement - that are essential for safeguarding athletes psychological well-being [7, 10].

DEFINITIONS

Depression and Anxiety

Depression is a mood disorder characterized by a persistent loss of interest, sadness, hopelessness, and somatic or cognitive fluctuations that significantly impair an individual's capacity to function [1]. In elite sports, depression can be triggered by intense mental demands, high performance standards, prolonged periods away from family, and the immense pressure of competition.

Anxiety, often highly comorbid with depression, manifests as distress, sleep problems, and difficulties in controlling emotions [6, 20].

Burnout and Staleness

Burnout is a state of mental, emotional, and physical exhaustion resulting from constant commitment to ambitious goals, intensive training, and a lack of adequate physical and mental recovery. [21, 22] It is heavily linked to a low perception of one's own abilities and recurrent injuries [1].

When athletes reach a state of "staleness" - an imbalance between training and recovery - they stop responding to training reductions (tapering), which leads to a direct decrement in performance and a flattened mood profile [11].

Common Mental Disorders (CMD)

In the elite sports context, CMD serves as an umbrella term encompassing symptoms related to distress, generalized anxiety, depression, sleep disturbance, and adverse alcohol use [4].

ETIOLOGY

Sport-Specific and Organizational Stressors

The structural demands of specific sports dictate unique psychological risks. High training volumes and congested match schedules are direct predictors of mental health issues. For example, field hockey players participating in 60 or more matches a year show significantly higher depression and generalized anxiety scores than players with fewer matches [5]. Beach volleyball presents a different structural challenge: the dyadic (two-player) team format creates

a high interpersonal dependency. In this environment, poor team communication and financial insecurity (due to reliance on short-term sponsorships and prize money) are profound predictors of clinical anxiety and depression [6].

Injuries, Concussions, and Stigma

Physical trauma is one of the strongest catalysts for mental health deterioration. Professional football and handball players who suffer severe musculoskeletal injuries (resulting in >28 days of absence) or recent adverse life events are 20-50% more likely to report symptoms of CMDs [4]. In high-contact sports like elite ice hockey, cumulative sports-related concussions (SRCs) correlate strongly with the severity of depressive symptoms, anxiety, and burnout [12, 13]. Furthermore, the injury-related stigma itself - the fear of being perceived as weak or "injury-prone" - is positively correlated with higher rates of reported depression symptoms, exacerbating the psychological burden [14].

Psychological Profiles, Gender, and Early Specialization

Gender plays a critical role in mental health morbidity in sports. Female athletes consistently report significantly higher rates of depression and anxiety [3, 5, 6]. For instance, an alarming 71.2% of professional female beach volleyball players reported clinically relevant depressive symptoms, and 67.3% exceeded the clinical cut-off for trait anxiety [6]. Female athletes also report higher rates of clinical burnout compared to male athletes. Conversely, male elite ice hockey players exhibit extreme rates of problem gambling - nearly four times the prevalence found in the general male population - which heavily correlates with depression and hazardous alcohol use [12, 13].

Early sport specialization significantly exacerbates these risks, especially among females. Highly specialized adolescent female volleyball players with a high athletic identity demonstrate significantly greater separation anxiety, generalized anxiety, social phobia, and major depression compared to those with lower athletic identity [9].

THE IMPACT OF MENTAL HEALTH ON ATHLETIC PERFORMANCE

Performance Resilience and Mood States (The Iceberg Profile)

The relationship between mood and performance is complex and not always linear. Psychological assessments using the Profile of Mood States (POMS) in professional basketball show that the positive mood state of "vigor" is directly reflective of team performance [11]. A classic "iceberg profile" (high vigor, low tension, depression, anger, fatigue, and confusion) coincides with successful winning streaks. However, professional athletes often demonstrate remarkable resilience; they can separate off-court distress from gameplay. For example, even when athletes experienced elevated anger and depression due to external stressors like financial instability or coaching conflicts, they were still able to maintain high-level on-court performance [11, 23].

Objective Success vs. Subjective Well-being

Contrary to the assumption that winning eliminates mental health struggles, objective competitive success is often an unreliable predictor of well-being. In elite beach volleyball, international FIVB rankings showed no significant association with symptoms of depression or anxiety. The immense performance expectations, media scrutiny, and fear of losing status associated with elite success can completely offset the psychological benefits of winning. Subjective appraisal of success and financial security are far more critical to an athlete's mental health than objective rankings [6].

BARRIERS TO MENTAL HEALTH HELP-SEEKING BEHAVIORS AMONG ATHLETES

The Treatment Gap and Systemic Constraints

Despite the high prevalence of distress, treatment-seeking remains disproportionately low. In German field hockey, while 10.7% of players exhibited depression symptoms, a mere 2.2% received psychological counseling or psychotherapy [5]. Accessing care poses significant logistical barriers. Long wait times, scheduling difficulties around intense training regimens, and a lack of available therapists who genuinely understand the unique pressures of the elite sporting context deter many athletes from seeking professional help [12, 13, 18].

Stigmatization and the Fear of Professional Repercussions

A culture of hypermasculinity and the glorification of "mental toughness" suppresses help-seeking behaviors, leading athletes to dismiss their struggles. Athletes fear that disclosing mental health issues could jeopardize their competitive standing and professional value. They worry that admitting to psychological vulnerability could negatively impact contractual negotiations, similar to the stigma of being labeled physically "injury-prone". Consequently, many athletes prioritize somatic healthcare, preferring to consult physiotherapists for physical ailments while systematically hiding their emotional distress [12, 13, 19].

PREVENTIVE STRATEGIES FOR MENTAL HEALTH DISORDERS IN ELITE ATHLETES

Optimal Load Management and Physiological Recovery

Because physical overtraining is inextricably linked to burnout and depressive symptoms, meticulous workload management and specific recovery protocols are critical preventive tools [1, 7].

- **Sleep Extension:** Increasing sleep duration (e.g., >10 hours in bed) fundamentally alleviates mental fatigue and enhances athletic performance. In collegiate basketball, sleep extension was positively associated with faster sprint times, a 9% increase in shooting accuracy, and significantly higher ratings of physical and mental well-being [7].
- **Nutrition and Hydration:** Rehydration with carbohydrate-electrolyte drinks prevents the degradation of visual reaction time, aerobic endurance, and cognitive focus. Supplementation with Branched-Chain Amino Acids (BCAA) and L-glutamine attenuates exercise-induced muscle disruption and delays central fatigue, buffering the psychological stress of physical exhaustion [7].
- **Cold-Water Immersion (CWI) and Compression:** Intermittent CWI (e.g., at 11–15°C) and compressive cryotherapy effectively lower perceived muscle soreness, reduce blood markers of muscle disruption (like creatine kinase), and lower the Rating of Perceived Exertion (RPE), indirectly protecting the athlete's mood state [7].

- **Tapering:** Progressive, exponential reduction in training volume prior to competition allows for necessary physiological and psychological supercompensation, effectively restoring peak neuromuscular performance and reducing subjective fatigue [7, 24].

Injury Prevention and Coaching Communication

Preventing the physical injuries that trigger depression is a paramount psychological safeguard. Implementing proprioceptive and balance training has been shown to reduce ankle injuries by 81% and knee sprains by 64.5% in professional basketball players [15]. Simultaneously, the psychosocial environment fostered by coaches is vital. Studies on handball players demonstrate that individualized verbal encouragement from coaches is vastly superior to collective team encouragement; personalized feedback significantly decreases tension, depression, and fatigue while enhancing vigor and technical-tactical skills [10].

THERAPEUTIC INTERVENTIONS AND BIOLOGICAL MECHANISMS

Internet-Based Psychotherapy (I-ACT)

Evidence-based psychological treatments must be tailored to athletes' realities. Internet-based Acceptance and Commitment Therapy (I-ACT) offers a highly flexible, accessible format for busy athletes. In a trial with elite ice hockey players, I-ACT successfully increased psychological flexibility and improved sleep quality. Notably, it also yielded significant enhancements in objective on-ice performance, specifically improving players' PlusMinus statistics post-intervention [2].

Mindfulness and Psychological Skills Training

Mindfulness practices, focusing on non-judgmental present-moment awareness, are highly effective tools for managing anxiety and athletic stress. Mindfulness workshops have been shown to decrease stress, increase athletic coping skills, improve working memory, and strengthen the overall flow state and emotional intelligence of athletes. Athletes who practice mindfulness consistently report a decreased likelihood of injury occurrence, likely due to improved focus and reduced somatic tension [7].

The Biological Antidepressant Mechanisms of Physical Activity

When properly managed to avoid overtraining, physical activity itself operates as a potent biological intervention for mental health [16]. Exercise stimulates neuroplasticity by significantly increasing peripheral concentrations of Brain-Derived Neurotrophic Factor (BDNF), which supports neuronal survival and synaptic plasticity in the hippocampus. Furthermore, aerobic exercise modulates key neurotransmitter systems, increasing the availability of serotonin, dopamine, and norepinephrine in the central nervous system, functionally mimicking the effects of antidepressant medications. Regular training also regulates the hypothalamic-pituitary-adrenal (HPA) axis, leading to a more efficient cortisol response to stress, and exhibits immunomodulatory effects that reduce the chronic low-grade inflammation (e.g., lower C-reactive protein) frequently associated with depressive episodes [17].

CONCLUSIONS

The text outlines key mental health issues in sports, such as depression, anxiety, and burnout. It also highlights the danger of "identity foreclosure"- a state where an individual's self-worth is tied exclusively to their athletic identity, making them highly vulnerable to psychological distress during injuries or retirement.

Mental health disorders in sports are triggered by a combination of organizational and sport-specific stressors. High training volumes, congested match schedules, interpersonal dependency, and financial insecurity are major risk factors. Severe musculoskeletal injuries and cumulative concussions act as strong catalysts for mental health deterioration. Furthermore, there are notable gender differences: female athletes consistently report higher rates of depression and anxiety, whereas male athletes (e.g., in ice hockey) exhibit extremely high rates of problem gambling. Early sport specialization also significantly exacerbates these psychological risks.

The relationship between mood and athletic performance is complex. While positive mood states, such as "vigor," align with team success, athletes often demonstrate remarkable resilience by maintaining high-level on-court performance despite experiencing significant off-

court distress (like depression or anger). The article also notes that objective competitive success (such as international rankings) is an unreliable predictor of an athlete's subjective well-being.

There is a critical "treatment gap" in elite sports. Athletes face systemic and logistical constraints in accessing appropriate psychological care. More importantly, they are deterred by deep-rooted stigmatization, a culture of "mental toughness," and the profound fear that disclosing mental health struggles could negatively impact their professional standing, contracts, or cause them to be perceived as weak.

To protect psychological health, the article emphasizes optimal load management. This includes sleep extension, precise nutrition and hydration protocols, cold-water immersion, and progressive tapering to reduce physiological and psychological fatigue. Implementing injury prevention programs and utilizing individualized verbal encouragement from coaches are also vital to safeguarding athletes' mental health.

Effective treatments must be tailored to athletes' schedules. Internet-Based Acceptance and Commitment Therapy (I-ACT) and mindfulness training have proven highly successful in increasing psychological flexibility, reducing stress, and even enhancing objective athletic performance. Finally, when athletes avoid overtraining, physical activity itself acts as a potent biological antidepressant-stimulating neuroplasticity (BDNF), modulating neurotransmitters, and regulating the body's stress response.

DISCLOSURE

The authors report no disclosures.

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USE OF GENERATIVE AI

AI was utilized for two specific purposes in this research. Text analysis of clinical reasoning narratives to identify linguistic patterns associated with specific logical fallacies. Assistance in refining the academic English language of the manuscript, ensuring clarity, consistency, and adherence to scientific writing standards. AI were used for additional linguistic refinement of the research manuscript, ensuring proper English grammar, style, and clarity in the presentation of results. It is important to emphasize that all AI tools were used strictly as assistive instruments under human supervision. The final interpretation of results, classification of errors, and conclusions were determined by human experts in clinical medicine and formal logic. The

AI tools served primarily to enhance efficiency in data processing, pattern recognition, and linguistic refinement, rather than replacing human judgment in the analytical process.

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