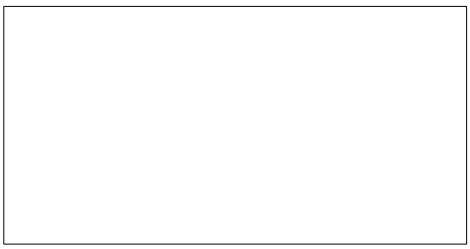

Review

Five unsolved issues concerning burnout in athletes: An expert perspective

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Abstract: *Introduction*: Concern about mental health is an increasingly relevant topic in high-performance sport. In this regard, because burnout can be harmful to both the health and performance of athletes, it is of particular importance. Although a great deal of time and effort has been dedicated to the study of athlete burnout, there are still issues that require further work. Therefore, in the present paper, we aim to highlight what, in our perspective, are the most important unsolved issues regarding burnout in athletes. *Methods*: We brought together expert athlete burnout scholars to offer their perspectives on five unresolved issues in this research area. *Results*: We describe the following five issues that require further research attention: (i) burnout as a syndrome, (ii) the negative consequences of burnout, (iii) the role of recovery in burnout, (iv) the importance of the social environment, and (v) developing effective interventions to reduce/prevent burnout. *Conclusion*: Our commentary provides suggestions for future research to help solve these problems, advance our understanding of athlete burnout, and ultimately safeguard the mental health of athletes.

Keywords: competitive sports, mental health, social environment, recovery, psychological interventions

Introduction

Safeguarding the mental health of athletes is an important responsibility of sport professionals. Given recent trends, athlete burnout is a particular source of concern in competitive sport [1, 2]. Many models exist to explain the development of burnout in sport. To aid research and understanding in this area, these perspectives have been combined in an integrated model [3]. This model includes major antecedents (e.g., stressful social relationships and lack of recovery), early signs (e.g., motivation and performance decrement), entrapment (e.g., unidimensional athlete identity, high investments, and social constraints), vulnerability factors (e.g., personality, coping, and environment), key dimensions, and maladaptive consequences of athlete burnout [3]. The integrated model also suggests that withdrawal from sports may be one of the consequences of burnout in athletes together with potential health issues including impaired immune function and long-term performance impairment. The adverse outcomes, including poor health [4], underscore the critical need for disseminating knowledge regarding athlete burnout. This is essential not only for prevention but also for facilitating recovery and mitigating the consequences of athlete burnout.

Given this context, an important concern is how common burnout is in athletes. Among collegiate athletes, for example, only a small portion (2%) may experience elevated levels of burnout dimensions during the early collegiate season, with this proportion increasing to 8% in the late season [5]. In a young elite athlete sample, 12% reported clinically relevant burnout symptoms [6]. Setting aside the specific threshold for assessing elevated or clinically relevant burnout, which is not consistently defined across studies, a cross-temporal meta-analysis highlighted that burnout symptoms in athletes have increased over the last two decades [7]. This is noteworthy considering that athletes who have dropped out of sport will not be included in these samples [8]. Either burnout is becoming a more salient feature of the sport experience, more athletes are continuing their participation (i.e., not dropping out) in

the face of this maladaptive state, or researchers are in some way better at detecting the burnout phenomenon in athletes. Regardless of the reason for this observed increase in burnout symptoms, this is clearly of concern, and it is important to further investigate burnout in athletes.

Method

Due to the detrimental consequences of burnout and the potentially increasing number of afflicted athletes, we have convened a panel of five researchers from different countries and backgrounds, each with extensive experience in the study of athlete burnout, to provide an expert perspective on key unresolved issues in athlete burnout research. Together, we have pooled our insights to address issues in athlete burnout research that need deeper consideration, and to provide suggestions for how to advance understanding of athlete burnout. Despite recent advances in the field of burnout research in sport [9], we have identified five major issues that we believe warrant priority examination: (i) burnout as a syndrome, (ii) the negative consequences of burnout, (iii) the role of recovery in burnout, (iv) the importance of the social environment, and (v) developing effective interventions.

Issue 1: Burnout as a multidimensional syndrome

Raedeke and Smith [10] proposed defining athlete burnout as a syndrome comprising three dimensions: (a) physical and emotional exhaustion, which corresponds to feelings of physical and emotional fatigue related to the demands of training and competition; (b) reduced sense of accomplishment, which is characterized by feelings of inefficacy in practice and the tendency to negatively evaluate oneself in terms of sports performance and achievement; and (c) sport devaluation, referring to a lack of interest in sports and performance, and negative, detached attitudes towards the sport. This definition is compelling because it is multidimensional, capturing three key symptoms of burnout, and can serve as a basis for scale development. Indeed, based on this definition, Raedeke and Smith [10] developed the Athlete Burnout Questionnaire (ABQ), which measures athlete burnout with respect to these three dimensions. The ABQ has been extensively used and considered the gold standard for burnout research and fundamentally valuable for the development of research in athlete burnout [11].

Despite the importance and successful validation of the ABQ some concerns have been raised regarding the relationship among burnout dimensions and how these dimensions develop over time. This is the same concerns as found in job burnout literature, including critic concerning theoretical grounding as well as how the dimensions are related. Since the conceptualization of ABQ is developed from occupational research, the same critic is relevant in athlete burnout research, thus whether burnout is a syndrome or not. In examining the three dimensions of athlete burnout, various researchers have reported inter-dimension correlations that collectively suggest a complex and nuanced relationship among these dimensions, challenging the notion of them necessarily forming a unified syndrome. For example, on one end of the spectrum, Isoard-Gautheur et al. [12] reported the broadest range of correlations, from r = .15 to r = .57, indicating the potential for both weak and moderate associations between the dimensions. This is contrasted by Madigan et al. [13], who noted a more narrow and consistent range of r = .51 to r = .55, suggesting a steady moderate correlation. In the middle ground, several studies found moderate to strong correlations. These studies support the idea of moderate to strong correlations but also underscore the variability within these relationships. This diversity in findings underscores the importance of considering the dimensions in themselves as well as collectively in understanding and addressing athlete burnout. It also underscores the importance of considering the samples of athletes who are surveyed, as the coherence among dimensions may be tied to matters such as intensity of training associated with a sport, timing of season, or inclusion criteria in selecting athlete participants.

Moreover, several researchers have raised concerns about the subscales of the ABQ. Lonsdale and colleagues [14, 15] and Quested and Duda [16] particularly highlighted that the scale of physical and emotional exhaustion might need reconsideration. According to some authors (e.g., [17]), it seems important to assess three sub-dimensions of exhaustion - namely, physical fatigue, emotional exhaustion, and cognitive weariness - each corresponding to the three energy resources (i.e., physical, emotional, and cognitive) that an individual possesses and invests in their activities. A research question to be considered is if an athlete experiencing burnout will experientially distinguish sub-dimensions of exhaustion or just simply be generally exhausted. Furthermore, some studies have questioned the dimension of sport devaluation [17, 18]. For example, Lonsdale and Hodge [18] concluded that the subscales of a-motivation and devaluation were not clearly distinct within a structural equation model. While "lack of interest" characterizes both sport devaluation and a-motivation, sport devaluation (but not a-motivation) additionally includes a negative attitude towards the sport. Thus, there

is likely some conceptual overlap while the constructs are not mutually exclusive.

In light of these concerns, Isoard-Gautheur et al. [19] proposed a new scale for measuring athlete burnout - the Athlete BurnOut-Scale (ABO-S) - which measures three dimensions: (a) a feeling of failure, corresponding to a sense of inefficacy and a tendency to negatively evaluate oneself in terms of performance and sports achievements; (b) a feeling of physical exhaustion, corresponding to a sense of physical fatigue related to the demands of training and competition; and (c) negative feelings towards the sport, representing a combination of negative and detached attitudes towards sports, and a lack of emotional energy. This new scale holds potential for further development in the conceptualization and measurement of athlete burnout. However, although showing promising validation, it needs to be tested in further research.

Outside the sports environment, Bianchi and Schonfeld [20] and Bianchi et al. [21] stated that burnout is a depressive condition since the average correlations of burnout and depression with job-related variables were almost identical. The findings of a multicenter study involving 14 samples of different professionals from six countries highlighted that exhaustion, burnout's main dimension according to some burnout scholars, is more associated with depressive symptoms than with the other two dimensions of burnout. This evidence sheds light on a possible theoretical and conceptual overlap between burnout and depression [21]. Bianchi and Sowden [22] propose a paradigm shift from burnout to occupational depression. According to the authors, burnout is not new or unique, but depressive in nature. In athlete burnout, the research is scarcer. One early study [23] found support for satisfactory discriminant and convergent validity regarding ABQ and depression. In a more recent study, the relationship between burnout and depression in young athletes was tested and resulted in the diathesis-stress model [24]. According to the model, depression is the outcome caused by dysfunctional attitudes and resignation (diathesis) and the lack of recovery (stress component). On the other hand, burnout is the outcome caused by the same diatheses as depression, in addition to chronic stress (stress component). Thus, the model sheds light on the similarity regarding the psychological predictors of burnout and depression in young athletes.

A recent meta-analysis conducted by Glandorf et al. [4] revealed that both total and dimensional measures of athlete burnout exhibit a positive correlation with depression, although the effect sizes vary, ranging from small to medium ($r = -.03$ to .59). These findings are particularly significant as they suggest that while there is a relationship between burnout and depression, the two are not entirely overlapping constructs. This is reinforced by early measurement work in sport showing these constructs to be distinct [23], and aligns with the broader dimensional conception of burnout – an experience that is more than simply exhaustion.

In summary, there is a need to further study the dimensions of burnout in athletes. It could be argued that you need to measure all three dimensions in order to truly capture the burnout experience; this is how burnout is most often conceptualized. The definition is important as if the sub dimensions are measured independently without considering the relationship with the other dimensions, there is risk of misinterpreting individual symptoms. For example overrating athletes who are physically tired from hard training or athletes feeling low sense of accomplishment due to poor performances, but not suffering from exhaustion. Longitudinal examination is especially important because it is not clear how these dimensions develop over time and in relation to each other [25]. Furthermore, the degree of conceptual overlap of burnout with other constructs such as a-motivation, self-efficacy and depression need further investigation. An important consideration is that most research has been conducted in athletes with no or very mild symptoms of burnout. This makes it difficult to interpret the meaning of the associations among burnout dimensions as well as between the dimensions and other constructs. Therefore, as stated earlier, future research is needed that examines athletes who present with high burnout perceptions [26].

Issue 2: Negative consequences of burnout

A growing body of work has sought to examine the possible consequences of burnout for athletes [26]. This literature was recently summarized in a systematic review of 54 studies. This review showed that athlete burnout was associated with both increases in negative mental health outcomes (e.g., depression, anxiety, insomnia, worry, and body image dissatisfaction) and decreases in positive mental health outcomes (e.g., satisfaction and vitality). What was less clear, however, were the possible physical health and physiological consequences for athletes [4].

Outside of sport, the physical health consequences of burnout have been explored extensively. There are well established links with outcomes such as coronary heart disease, type 2 diabetes, and headaches [27]. In sport, it is likely the search is more difficult given the inherent "healthy" nature of participants (i.e., physically active) and the variety of physical consequences of sport itself (e.g., physiological adaptation). As a consequence, research designs

that simultaneously account for such confounding factors while exploring physical outcomes over time are necessary.

Beyond physical health, there are a couple of other outcomes that have surprisingly little research to support the link with burnout. In this regard, one of the literature's most frequently discussed consequences of burnout is dropout [28]. A previous study demonstrated that high levels of burnout in handball athletes can be discriminant for the emergence of behavioral consequences over time, especially dropout [8]. These findings confirm the cognitive-affective [29] and the integrated [3] models, which assume dropout as an outcome of burnout in sports. Given this scenario, the use of burnout prevention and control policies in sports becomes essential.

In addition to dropout, reduced performance appears to be a consequence of burnout [3]. Although it is difficult to establish methodological designs that prove performance impairment as an outcome of burnout, a previous study observed that the players with the lower burnout profile had 2.86 times (on average) more chance to achieve higher performance (i.e., playing at the national or professional level) in comparison to their peers with the higher burnout profile [8]. Again, though, more research with rigorous designs and clear performance outcomes are necessary to advance our understanding of what can be considered the most important outcome in sport.

Issue 3: The role of recovery in burnout

The third relevant and contemporary topic for understanding burnout is associated with recovery. The role of recovery in athlete burnout has not yet been fully considered. The demands of the sporting context presuppose the need for recovery as a process of restoring depleted resources [30, 31, 32]. In addition to physical recovery, psychological and social aspects are also linked to this process [33]. Thus, when recovery strategies are not adequate, the stressors caused by excessive demands accumulate throughout the sporting trajectory, becoming chronic and, finally, can result in burnout [34]. Therefore, we need to know more about recovery and its role in burnout.

Insufficient recovery stands out as a precursor to burnout syndrome [34]. Even if this need resembles a context of simple resolution, this process can be considered paradoxical. This paradox arises particularly when athletes, feeling increasingly fatigued and in greater need of rest, find themselves less able to engage in recovery processes. This phenomenon, known in the organizational psychology field as the "recovery paradox," suggests that the likelihood of engaging in effective recovery diminishes precisely when the demand for it intensifies, due to the heightened presence of stressors [35].

Ignoring early signs of training maladaptation and a chronic lack of recovery are important contributors to burnout. One case study featured a young athlete who experienced excessive training with insufficient recovery. This combination resulted in a loss of motivation, a drop in performance, and burnout [36].

The elevated physical, cognitive, and emotional demands placed on athletes increase the need for recovery to preserve their health and well-being, as well as to restore sporting capabilities and performance [37, 38]. The cognitive-affective model of athletic burnout [29] defines it as a reaction to chronic stress, therefore, the possibility of experiencing an effective recovery may be useful for reducing burnout symptoms.

Considering the importance of recovery as a psychophysiological need, it is possible to identify some processes that promote it [34]. One of the most highlighted recovery processes addresses sleep quality, due to its capability of facilitating post-exercise recovery and reducing fatigue [37]. Sleep-related physiological processes are responsible for restoring physical, cognitive, and emotional resources to face demands [39]. Thus, adequate and quality sleep is the recovery strategy most used by athletes [37, 39].

Analyzing the sleeping habits of athletes makes it possible to improve recovery aspects in a sports environment [40]. In this regard, investigations that consider the quality and performance of sleep in athletes can support strategic changes in these individuals' daily routines and sleep hygiene [39, 40]. Furthermore, insufficient sleep is considered a risk factor for predicting burnout in technology work settings, as sleep deprivation appears to make people more susceptible to stressful stimuli and events [41]. In the sporting context, burnout predicts sleep quality, but the opposite was not observed [6, 39].

Beyond sleep quality, from the perspective of a full recovery, mental disconnection from sport after competition has been considered. Thus, mental detachment refers to athletes' sense of being away from the cognitive and emotional demands of sport. Although it is appropriate for athletes to distance themselves from the sport during the rest period between training and competitions, this action may not be frequent, as athletes generally ruminate on issues related to the previous competition [42]. This condition can result in an "underrecovery trap", an outcome in which physical fatigue makes it impossible to fully develop physical and mental recovery [43].

To avoid this paradox, it is necessary to establish strategies for self-regulation of post-performance energy states and the worry associated with sport [34]. Relaxation techniques such as breathing, meditation, and hypnosis may

reduce physical fatigue and promote full physical and mental recovery [43].

Issue 4: The importance of the social environment

Though training-related and individual psychological factors tend to be of primary interest in examinations of athlete burnout, there is a long-standing recognition that social contextual factors are linked to the burnout phenomenon (e.g., [44, 45, 46]). For example, burnout is associated with negative interactions and feelings of pressure from others [45, 46]. Teammate relationship constructs such as corumination, peer rejection, and loneliness also associate with athlete burnout perceptions [47]. Teammates may further contribute to athlete burnout perceptions through the motivational climate they reinforce, with greater intra-team conflict and lower improvement, relatedness support, and effort climate perceptions in athletes associating with higher burnout perceptions [48]. Relatedly, their prosocial and antisocial behaviors can dampen and amplify athlete burnout perceptions, respectively [49]. The cohesiveness of a sport team can be important, with lower social and task cohesion associated with greater athlete burnout perceptions [50]. Altogether, there is an array of social behaviors and social perceptions that undermine athlete motivation and contribute to athlete burnout perceptions.

In light of the interpersonal demands inherent to sport involvement, the provision of social support by coaches, parents, teammates and others in sport can be important to safeguarding psychological health and preventing athlete burnout. Early efforts to examine this construct in athlete burnout research showed perceptions of social support to be inversely related to athlete burnout perceptions [51, 52]. A meta-analysis examining the association of social constructs and athlete burnout found social support to be among the predominant social constructs represented in this literature, showing a low-to-moderate inverse association with athlete burnout symptoms [53]. Importantly, more work is needed to understand when such support is most needed, welcomed, and effective. Recent work, for example, shows that the inverse association of social support and athlete burnout is stronger when athletes have greater social identification in their sport [54]. Other work shows that athletes who more strongly identify with their team are more likely to be among those falling within a supportive communicators profile, a profile of athletes characterized by lower burnout perceptions than those categorized as less effective communicators [55].

In considering pathways to deepen our understanding of how the social environment is tied to athlete burnout, finding ways to capture the complexity and nuances of the sport social context will be critical. Considering sport as an integrated system, with a set of interdependent elements tied to the individual athlete, their interpersonal relationships, and the context that surrounds them is essential to deeper understanding of athlete experiences [56]. This naturally poses an array of research challenges, as we cannot reasonably capture every feature of the sport social context and process the information in a digestible way. Nonetheless, we can work to address how subsets of these features are connected in shaping athlete burnout symptoms. A recent effort, for example, shows that athlete perceptions of parent-, coach-, and peer-initiated mastery motivational climate inversely associate with burnout perceptions, and that peer-initiated mastery motivational climate mediates the association of coach-initiated mastery motivational climate with athlete burnout [57]. Another highlights the importance of considering both positive and negative social constructs simultaneously as related to athlete burnout [58]. One of the challenging questions that needs to be addressed moving forward in athlete burnout research is how athletes reconcile conflicting social inputs – that is, both adaptive and maladaptive messaging and interactions – from specific social agents and across social agents. Are these inputs amalgamated in shaping an athlete's burnout perceptions? Alternatively, do they rely on certain inputs and ignore others? If so, what social inputs are privileged and what explains that process? These are fascinating research questions and learning their answers may offer helpful guidance in generating strategies for the prevention of athlete burnout.

The research to date has largely been oriented toward athlete experiences within the sport context, but the intensified communication environment associated with social media warrants consideration in athlete burnout research. This environment lends itself to greater opportunity for social comparison, which has implications for perceptions of physical competence and body image, and can be particularly challenging to navigate for adolescents [59]. Social media not only amplifies social comparison potential within one's sport team, but also opens the door to ready comparisons with competitors and others beyond one's direct sphere of social interaction. The degree to which this can impact mental health, and burnout in particular, is not yet known because the influence of athlete social media use on athlete well-being is in its infancy [60]. Moving forward, researchers seeking to address how the social context ties to athlete burnout may benefit from considering the virtual social domain as well as interactions within the sport context itself.

There is much opportunity to expand our understanding of social contributions to athlete burnout. Others have highlighted the importance of considering both positive and negative social interactions within sport contexts, the broad array of social agents within sport, athlete fit with their broader organizational context – which ties to how social relationships are structured and navigated, and developmental considerations in how social relationships are prioritized and understood [1, 59]. Sport is an inherently social context, requiring us to attend to social dynamics when seeking to understand athlete burnout and how to meaningfully address it through prevention and intervention.

Issue 5: Developing effective interventions

Finally, considering the potential risks of burnout to athletes' performance and health, it remains essential to understand more about the most effective interventions in sports settings. This is the area, however, with by far the least empirical support. For example, a recent review of interventions in sport [61] found only five studies that had used psychological interventions to prevent or reduce burnout in athletes. In addition, it was identified that the majority of these studies were at a moderate-to-high risk of bias due to several methodological issues (e.g., group allocation).

For these reasons, recent recommendations for intervention have been based on reviews of literature outside of sport [62]. This is because a much larger body of work exists in occupational domains. Reviewing 13 meta-analyses of rigorously designed randomized controlled trials, Madigan et al. [59] made suggestions based on the use of Cognitive Behavioral Therapy (CBT) interventions as well as organizational interventions that target the motivational climate (such as autonomy support). This evidence base can certainly form the basis for guidance in sport. However, we are in urgent need of developing our own sport-specific, rigorously designed and tested set of interventions. To do so, we need to convince stakeholders of the relevance of burnout to their sport and athletes and build collaborative networks that provide the infrastructure to conduct multi-site randomized controlled trials.

Conclusions and a way forward

In this brief expert commentary, we have summarized five important issues and have proposed several ways to move forward to improve our understanding of athlete burnout. Although research in this area has been successful and the number of publications has been steadily on the rise, with contemporary studies including more advanced designs and better theoretical grounding, there is a need for further advancement of knowledge [9].

When outlining possible ways to advance athlete burnout research we note common threads among the five issues presented in this paper. First, there is a need to investigate athletes that are experiencing symptoms that are of greater severity. Differentiating between athletes who are suffering from mild to more severe symptoms is fundamental to developing deeper understanding of the issues presented in this paper. The nature of athlete burnout and its negative consequences will be placed in clearer relief, contributing factors can be better understood, and intervention efforts can be more thoughtfully constructed. Importantly, the ABQ was conceptualized and developed as a measure of athlete burnout perceptions rather than a clinical instrument. Further work is needed with this measure to establish clinically meaningful cut-offs for athlete burnout (see [63]). Differentiating levels of burnout will be crucial in the progression of research on athlete burnout, and this work should be pursued with attention to various subpopulations of athletes, developmental levels of athletes, and unique contextual demands tied to certain sports or levels of sport.

Furthermore, improving research design is a critical direction for advancing the athlete burnout knowledge base. Though the number of longitudinal studies has increased recently, the bulk of research on athlete burnout remains cross-sectional. Deliberate attention to pursuing longitudinal research designs will advance understanding of burnout as a syndrome, how social contexts evolve to increase or decrease risk for burnout, and what intervention approaches are effective and sustainable. There is particular value to longitudinal designs that focus on within-person change. This provides an opportunity to understand how burnout develops over time, evolves differently among individuals, and uniquely ties to determinants and consequences (see [64]). Investigating both between-person and individual change over time can help us, for example, understand the dynamic links between the social environment, recovery and burnout. Finally, conducting multi-site randomized controlled trials to test interventions and effects is of great value and will be important for optimizing prevention and recovery from burnout. Success with these trials will require continued advancement in conceptualization, measurement, and understanding of the dynamics of athlete burnout.

The five issues described here are not exclusive for the research that needs to be done in order to help athletes to thrive in their sport. Rather, they are examples of how this research area can develop in the near future and inspire efforts to provide coaches, sport managers, sport psychologists and other stakeholders in competitive sport

with guidelines to improve performance, health, and well-being of highly motivated athletes.

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