Self-determination theory as a framework for understanding athlete burnout: a systematic review

La teoría de la autodeterminación como marco para comprender el síndrome del deportista quemado: una revisión sistemática

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Abstract

Introduction: High-performance sports place significant demands on athletes, requiring a thorough examination of factors influencing their mental health and performance.
Objective: This study aims to analyse the etiology of athlete burnout syndrome through the lens of Self-Determination Theory, synthesising empirical evidence on this topic.
Methodology: Eight studies published between 2015 and 2024 were reviewed, covering a variety of international contexts, including China, France, Ireland, Malaysia, Singapore, Spain, and the United Kingdom. The studies employed diverse research designs, with the majority being cross-sectional (62.5%) and quantitative (75%).
Results: The Athlete Burnout Questionnaire was the most used instrument, while Self-Determination Theory applications were primarily based on Organismic Integration Theory and Basic Psychological Needs Theory.
Discussion: The findings suggest that athlete burnout is strongly associated with self-determined motivation and the fulfilment of basic psychological needs, highlighting the mediating role of need satisfaction in preventing burnout.
Conclusions: These results underscore the importance of implementing interventions that enhance self-determined motivation and psychological need fulfilment to mitigate the risk of burnout in athletes.

Keywords

Athlete burnout; basic psychological needs theory; motivation; organismic integration theory; self-determination theory; systematic review.

Resumen

Introducción: Los deportes de alto rendimiento implican exigencias importantes para los deportistas, lo que requiere una evaluación exhaustiva de los factores que influyen tanto su salud mental y como su rendimiento.
Objetivo: Este estudio pretende analizar la etiología del síndrome de burnout en los deportistas a través de la Teoría de la Autodeterminación, con el fin de sintetizar la evidencia empírica sobre este tema.
Metodología: Se revisaron ocho estudios publicados entre 2015 y 2024, provenientes de diversos contextos internacionales, como China, Francia, Irlanda, Malasia, Singapur, España y el Reino Unido. La mayoría de los estudios emplearon diseños transversales (62,5%) y enfoques cuantitativos (75%).
Resultados: El Athlete Burnout Questionnaire fue el instrumento más utilizado, mientras que las aplicaciones de la Teoría de la Autodeterminación se basaron principalmente en la Teoría de la Integración Organísmica y la Teoría de las Necesidades Psicológicas Básicas.
Discusión: Los resultados indicaron que el burnout en los deportistas está estrechamente asociado con la motivación autodeterminada y la satisfacción de las necesidades psicológicas básicas, destacándose el papel mediador de la satisfacción de estas necesidades en la prevención del burnout.
Conclusiones: Estos resultados subrayan la importancia de implementar intervenciones que potencien la motivación autodeterminada y la satisfacción de las necesidades psicológicas, para mitigar el riesgo de burnout en los deportistas.

Palabras clave

Burnout del deportista; teoría de las necesidades psicológicas básicas; motivación; teoría de la integración organísmica; teoría de la autodeterminación; revisión sistemática.

Introduction

One of the most pressing issues is burnout, widely studied for its negative impact on athletes' personal and professional lives. According to Raedeke (1997), athlete burnout is a construct comprising three key dimensions: (a) emotional and physical exhaustion, resulting from the high demands of the sport context; (b) a reduced sense of achievement, characterized by the perception that the efforts made do not lead to success and satisfactory sport development; and (c) sport devaluation, including a loss of interest, enjoyment and passion for sport, as well as negative attitudes towards sport itself.

Self-determination theory (SDT) conceptualised by Deci and Ryan in 1985 (with subsequent formulations as Deci & Ryan, 2000; Ryan & Deci, 2000, 2017), serves as the theoretical basis for exploring the potential causes of burnout in athletes. SDT is a macro-theory of motivation that includes six distinct mini-theories: 1) Organismic Integration Theory (OIT); 2) Basic Psychological Needs Theory (BPNT); 3) Cognitive Evaluation Theory (CET); 4) Causality Orientations Theory (COT); 5) Goal Contents Theory (GCT); and 6) Relationships Motivation Theory (RMT).

OIT describes motivation along a continuum based on how self-determined or autonomous the behavior is. This continuum ranges from unregulated behaviour (amotivation) to regulated behavioural types of motivation (extrinsic and intrinsic motivation). It is organized from less self-determined or controlled behaviour (externally regulated extrinsic motivation) to more self-determined or autonomous behaviour (intrinsic motivation) (Ryan & Deci, 2017). Research shows that higher self-determined motivation reduces the risk of burnout, while lower levels increase it (Lemyre et al., 2007; De Francisco et al., 2020). Thus, different research shows a negative correlation between intrinsic motivation and burnout, and a positive correlation with amotivation (Cresswell & Eklund, 2005a, 2005b; Graña et al., 2021; Lonsdale et al., 2009). Similarly, in terms of extrinsic motivation, Lonsdale et al. (2009) report a positive association between burnout and controlled extrinsic motivation, and a negative association with autonomous extrinsic motivation.

According to the BPNT, three basic psychological needs are considered to be inherent to well-being: competence, autonomy, and relatedness (Deci & Ryan, 2000). In sport, autonomy is acting according to personal values; competence is feeling effective in skills; and relatedness is feeling supported by others (Vílchez et al., 2020). Recent research has shown that the satisfaction of basic psychological needs is inversely related to burnout, and the failure to satisfy these needs is directly related to increased burnout (Aguirre-Gurrola et al., 2016; Carlin et al., 2012; Ramírez-Nava et al., 2023; Vílchez et al., 2020). In this sense, autonomy has been highlighted as a key dimension, as its satisfaction is closely related to intrinsic motivation, while its frustration may be directly related to burnout (Vílchez et al., 2020). Therefore, the satisfaction of basic needs influences burnout directly and indirectly through self-determined motivation. When these needs are met, self-determined motivation increases, which in turn reduces the risk of burnout (Lonsdale et al., 2009; De Francisco et al., 2020).

The CET integrates findings from studies of the effects of rewards and the role of feedback on intrinsic motivation (Ryan & Deci, 2000). According to this theory, reinforces that foster feelings of competence during action (informational feedback) can increase intrinsic motivation; however, there must be a perception of autonomy, and therefore controlling feedback that decreases perceived autonomy also decreases intrinsic motivation. In this sense, studies suggest that the type of feedback provided by the coach, the motivational climate it fosters, and perceptions of authoritative support or control can significantly influence athletes' motivation and psychological well-being (Barcza-Renner, 2010; Lonsdale et al. 2009).

The COT defines the locus of causality as the perceived source of behaviour regulation (Deci & Ryan, 1985). It identifies three orientations: 1) autonomy (internal causality), where goals are organised independently of external rewards; 2) control, motivated by external or internal pressures and focused on external rewards (money or status); and 3) impersonal, the least self-determined, reflecting a lack of control over behaviour and associated with anxiety, incompetence and depression (Barcza-Renner, 2010). These orientations align with OIT's motivational regulations: impersonal and controlled orientations reflect less self-determined motivation, while autonomous orientation reflects more self-determined motivation. Consequently, their relationship with burnout follows a similar pattern to previous findings (Lonsdale et al., 2009).

The GCT focuses on the different types of goals that people pursue and classifies them as 1) intrinsic, oriented towards personal growth and contribution to the community, and 2) extrinsic, oriented towards external goals such as wealth, fame, or physical appearance (Kasser & Ryan, 1996; Ryan & Deci, 2000). In sport, intrinsic goals—such as enjoyment—tend to satisfy basic psychological needs, leading to lower burnout and greater well-being. In contrast, extrinsic goals—such as fame or financial success—are linked to higher stress and more burnout symptoms (Hodge et al., 2008; Smith et al., 2007).

The RMT places particular emphasis on the role of interpersonal relationships in satisfying basic psychological needs (Deci & Ryan, 2000). The theoretical framework of RMT posits that the maintenance of high-quality relationships is indispensable for the cultivation of psychological well-being and the promotion of self-determined motivation (Ryan & Deci, 2017). Interactions that provide emotional support and promote autonomy enhance relationship need satisfaction, thereby increasing intrinsic motivation (Ryan, et al., 2006). Research has demonstrated that autonomy-promoting coaching with open communication is associated with higher levels of intrinsic motivation and a reduced incidence of burnout in athletes (Adie et al., 2008; Hodge et al., 2008). In contrast, a controlling environment has been demonstrated to be associated with extrinsic motivation and states of emotional exhaustion (Bartholomew et al., 2011). This emphasises the importance of cultivating an environment characterised by positive and supportive relationships, with the aim of optimising athletes' sporting performance and psychological well-being (Ntoumanis & Mallet, 2014).

As has been exposed, there are multiple studies that, from the different theories of SDT, relate burnout to motivation. A summary of these relationships is provided in Table 1.

Table 1. Summary of the relationship between SDT mini-theories and athlete burnout

Mini-theory	Relation to burnout
Organismic Integration Theory (OIT)	Explains burnout syndrome based on the type of motivational regulation depending on the level of self-determination. Motivation with a high level of self-determination reduces burnout; motivation with a low level of self-determination (or amotivation) increases it.
Basic Psychological Needs Theory (BPNT)	Burnout increases when the needs for autonomy, competence, and relatedness are not adequately met or are frustrated. Meeting these basic psychological needs helps prevent burnout. .
Cognitive Evaluation Theory (CET)	Feedback that supports autonomy reduces the risk of burnout; controlling feedback undermines motivation and increases vulnerability.
Causality Orientations Theory (COT)	Autonomy orientation protects against burnout; control and impersonal orientations increase vulnerability.
Goal Contents Theory (GCT)	Intrinsic goal orientations protect against burnout; extrinsic orientations increase stress and the risk of burnout.
Relationships Motivation Theory (RMT)	Supportive interpersonal relationships that foster autonomy reduce burnout, while controlling environments increase it.

Given the intricate and varied nature of applying SDT to understand athlete burnout, conducting a systematic review is both justified and necessary. Such a review is essential for consolidating and synthesizing the dispersed empirical findings, thereby facilitating the identification of both commonalities and divergences in the SDT-burnout relationship. Additionally, this process will enable an assessment of the robustness and validity of the different methodologies and approaches employed. By systematically reviewing the existing literature, it becomes possible to pinpoint areas that have been underexplored or aspects that need further investigation, which is crucial for guiding future research to address these gaps and provide a more comprehensive understanding of the phenomenon. Li et al. (2013) conducted a systematic review on the relationship between basic psychological needs, motivation, and athlete burnout, covering studies up to 2012. Given that more than a decade has passed since their review, it is essential to update the state of the art by incorporating research conducted in recent years.

The present systematic review aims to evaluate and synthesise the current empirical evidence regarding the application of SDT in sports contexts and its relation to athlete burnout. It seeks to investigate the various approaches and mini-theories of SDT that have been utilised, analyse their outcomes, and determine their impact on the incidence and management of athlete burnout.

Method

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Page et al., 2021) and the Joanna Briggs Institute (JBI, 2017) checklist for systematic reviews and research syntheses. The research question guiding this review was: In athletes (P), how is the application of SDT (E) in the sports context (C) related to burnout (O) according to empirical evidence (S)? A protocol was developed to ensure methodological rigor and was registered with the Open Science Framework in July 2024 (https://doi.org/10.17605/OSF.IO/5HKZ6).

Study selection criteria

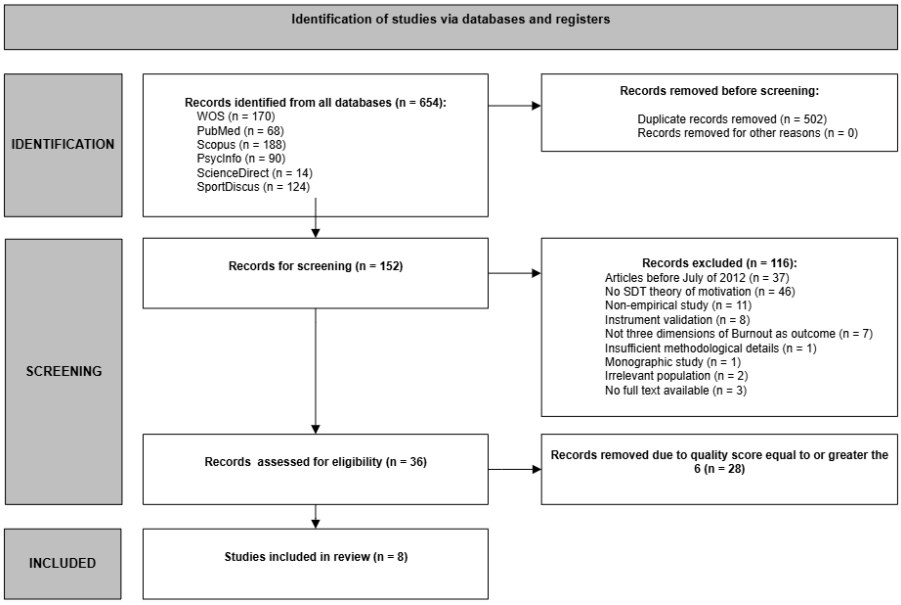
In September 2024, two independent reviewers were assigned the task of identifying relevant studies related to the research topic of athlete burnout and SDT. An advanced search strategy was employed, combining the use of Boolean operators (e.g., OR, AND), truncation (e.g., "athlet*"), and search field restrictions (limited to title and abstract) to increase both sensitivity and specificity. The query used was: "athlet burnout" OR "sport* burnout" AND "self determination theory" OR "SDT" OR "motivat*"*.The search strategy encompassed a range of electronic databases, including Web of Science, Scopus, APA PsycInfo, SPORTDiscus and ScienceDirect. The papers were collated in either a RIS or BIB format.

In addition to using the PECOS framework to formulate the research question, it was also used to define the eligibility criteria for the included studies, which were as follows: (P) participants must be athletes, defined as individuals who regularly engage in sport training; (E) any variable of self-determination theory; (C) studies must focus on sport performance; (O) the primary focus should be athlete burnout; and (S) only empirical studies and case studies published in the literature are included. This approach helps to identify studies that are relevant and in line with the research objectives related to athlete burnout. Given that the systematic review by Li et al. (2013) included publications up to July 2012, articles published after this date were included in this systematic review. Studies that did not explicitly examine athlete burnout without empirical data (such as systematic reviews, meta-analyses, theoretical papers, commentaries, editorials and opinion pieces) and other types of publications such as dissertations, conference abstracts, grey literature, preprints and unpublished papers were excluded from the review. In addition, studies that did not focus on athletes were excluded.

Search strategy and process

The search strategy and process involved exporting records from the databases into Parsifal software (Kreimer et al., 2021). Parsifal is a web-based tool designed to streamline the process of conducting systematic reviews and meta-analyses. It offers a user-friendly interface that guides researchers through key stages, including study screening and data extraction. With features such as automated screening and support for collaboration among multiple reviewers, Parsifal enhances both efficiency and methodological rigor, enabling researchers to produce comprehensive and reproducible reviews that support evidence-based practice. A total of 654 papers were imported into Parsifal from Web of Science (170), Scopus (188), PubMed (68), APA PsycInfo (90), SPORTDiscus (124), and ScienceDirect (14). After removing 502 duplicates, the two reviewers independently screened the remaining 152 papers. The reviewers' process is illustrated using a PRISMA flow diagram (Figure 1).

Figure 1. The reviewers' process illustrated using a PRISMA flow diagram.



Data extraction procedure

To guarantee the veracity and reliability of the data presented in this systematic review, a comprehensive and rigorous data extraction process was undertaken with the involvement of two independent reviewers.

The following data were extracted: article metadata, including authors, year, article title, and journal title; study characteristics, such as the study objectives, location, and design (e.g., cross-sectional, longitudinal; quantitative or qualitative); participant characteristics (including age, sex/gender), along with other relevant sport-related variables such as competitive level or sport modality. Additionally, both independent and dependent variables, along with potential moderators, were considered. The study findings, encompassing a summary of the results and conclusions, were also included.

Quality assessment of studies included

The methodological quality of the studies included in this review was evaluated by incorporating items from the JBI checklist (2017) into the Parsifal software, with a cutoff point of 6 out of 8 established, assuming a level of 75%. This threshold was determined in alignment with the criteria employed in other bias assessment tools, such as the PEDro scale, which establishes a minimum acceptable score of 8 out of 11 (PEDro scale, n.d.). Appendix 1 is a summary of the consensus rating process after peer review by two of the authors.

Results

Eight studies published between 2015 and 2024 were selected for inclusion in the review. The articles in question cover a wide range of international contexts, such as China, France, Ireland, Malaysia, Singapore, Spain (two papers), and the United Kingdom (two papers). Appendix 2 provides an overview of key data from the included studies.

Study Design

Of the studies selected (Appendix 2), three employed a longitudinal design (37.5%), while five were cross-sectional (62.5%). Most of the research utilized a quantitative methodology (75%), with only one study employing a qualitative approach, and another research employing mixed methods.

Most of the quantitative studies included in this review, as well as the mixed methods study, employed the Athlete Burnout Questionnaire (ABQ; 62.5%), either in its original form in English (31.25%) or made use of culturally validated adaptations (31.25%) to Spanish (20.83%) and Chinese (10.42%). The ABQ (Raedeke & Smith, 2001) comprises 15 items, grouped into three dimensions: physical and emotional exhaustion (PEE), reduced sense of accomplishment (RSA) and sport devaluation (SD). The questionnaire employs a Likert-type response format, with values ranging from 1 (almost never) to 5 (almost always). One study diverges from this trend by employing the Athlete Burnout Scale (ABO-S; Isoard-Gautheur et al., 2018), which is based on the French ABQ (Isoard-Gautheur et al., 2010).

Regarding the quantitative instruments employed within the framework of SDT, the Behavioural Regulation in Sport Questionnaire (BRSQ) was utilized in three studies (37.5%), either in its original English version (Lonsdale et al., 2008; 25%) or its Spanish adaptation (Viladrich et al., 2011; 12.5%). The BRSQ assesses the different degrees of motivational regulation along a continuum and has been widely validated in sport contexts. The original version consists of 24 items, distributed across six subscales measuring intrinsic motivation (three types), identified regulation, introjected regulation, and external regulation (four items per subscale). It employs a 7-point Likert-type response scale ranging from 1 (Not at all true for me) to 7 (Very true for me). The Spanish adaptation maintains this same structure. The Basic Needs Satisfaction in Sport Scale (BNSSS) was also frequently employed (37.5%), using both the original version (Ng et al., 2011; 12.5%) and the Spanish and Chinese adaptations (De Francisco et al., 2018; Liu et al., 2013; 12.5% each). The BNSSS measures athletes' perceptions of the satisfaction of their fundamental psychological needs of autonomy, competence, and relatedness within the sport context. All the aforementioned versions comprise 12 items (four per dimension) with a 7-point Likert-type response scale, ranging from 1 (Not at all true) to 7 (Very true).

Other instruments used to a lesser extent were the Spanish version of the Sport Motivation Scale (SMS; Balaguer et al., 2003, 2007), the Basic Need Satisfaction in Sporting Context Scale (BNSSCS; Gillet et al., 2008), and the French version of the Psychological Need Thwarting Scale (PNTS; Martinent et al., 2015). The SMS, similar to the BRSQ, assesses different degrees of motivational regulation; it consists of 28 items distributed across seven subscales: three of intrinsic motivation (knowledge, accomplishment, stimulation), three of extrinsic motivation (identified, introjected, and external regulation), and amotivation (four items per subscale). Participants respond to each item on a 7-point Likert scale, ranging from 1 (Does not correspond at all) to 7 (Corresponds exactly). The BNSSCS measures the satisfaction of the basic psychological needs of autonomy, competence, and relatedness in the sport domain. It contains 18 items (six per dimension) with a 7-point Likert-type response scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). Finally, the French version of the PNTS assesses the perceived frustration of the same three psychological needs. This French version contains 12 items (four per dimension) and uses a 7-point Likert response scale ranging from 1 (Strongly disagree) to 7 (Strongly agree).

Meanwhile, the qualitative study (and mix method study) included in this review used a semi-structured interview to assess both athlete burnout and motivational processes. The interview guide was developed based on the ABQ and included questions based on the principles of SDT.

Characteristics of Study Samples

These studies included an average of almost 400 athletes, with sample sizes ranging from 10 (qualitative methodology; Martin & Hong, 2022) to 1011 participants (De Francisco et al., 2020). A longitudinal study (Martinent et al., 2021) reported three samples per data collection and one total number. Most studies (75%) included both male and female athletes, with one study including only males (Langan et al., 2015) and another only females (Martin & Hong, 2022), although male participants were overall more represented ($Mean_{men}$ = 251.88; $Mean_{women}$ = 176.25).

The mean age of the participants was 17.33 years (SD = 2.5241), with ages ranging from 11 years (11-17 years; Langan et al., 2015) to 29 years (12-29 years; Graña et al., 2021). The preponderance of studies (75%) utilising samples from diverse sporting disciplines, encompassing both team and individual sports, is noteworthy. The remaining studies utilised samples from Gaelic football (Langan et al., 2015) and rugby (Martin & Hong, 2022).

A detailed breakdown of the characteristics of the samples can be found in Table 2.

Table 2. Detailed characteristics of the samples of studies included in the review

Author (year)	Size	Women	Men	Mean age	*SD* age	Range age (years)	Competition level	Sport
De Francisco et al. (2020).	1011	506	505	18.09	5.55	--	--	Various sports
Graña et al. (2021)	500	130	370	17.39	4.60	12-29	--	Various sports)
Langan et al. (2015)	87	0	87	15.18	1.29	11-17 athletes	Elite	Gaelic football
Li et al. (2017)	391	348	343	14.11	1.04	13-18	Scholar	Various sports
Madigan et al. (2016)	141	17	124	17.30	0.80	16-18	--	Various sports
Martin & Hong (2022)	10	10	0	19.80	0.92	19-21	Amateur	Rugby
Martinent et al. (2021)	367 343 T1 223 T2 208 T3	135	232	16.18	2.02	--	--	Various sports
Yang et al. (2024)	618	264	354	20.57	3.05	--	High college/school	Various sports

Note: SD = Standard Deviation

Application of Self-Determination Theory to Athlete Burnout

This section presents the results related to the mini-theories of SDT and their connection to athlete burnout. Of the six mini-theories that comprise SDT, the eight articles that met the quality criteria for this review focused exclusively on the OIT and the BPNT. Specifically, three examined motivation from the OIT perspective, while other three studies did so from the BPNT perspective (Table 23). Notably, one of these studies explored motivation using both theories complementarily (De Francisco et al., 2020). One paper (Martin & Hong, 2022) is broadly framed within SDT and employs semi-structured interviews based on the ABQ. In this study, although no specific mini-theory is explicitly stated, the focus on self-determined motivation and unfulfilled basic psychological needs as key factors in the development of burnout suggests a predominant alignment with the OIT and BPNT. Consequently, the remaining mini-theories were not represented in the analysed studies.

Table 3. SDT mini-theories related to athlete burnout in the selected studies

Author (year)	Mini-theories	Instruments
De Francisco et al. (2020)	BPNT OIT	Spanish version of Basic Needs Satisfaction in Sport Scale (BNSSS; De Francisco et al., 2018). Spanish version of Behavioural Regulation in Sport Questionnaire (BRSQ; Viladrich et at., 2011).
Graña et al. (2021)	OIT	Spanish version of Sport Motivation Scale (SMS; Balaguer et al., 2003, Balaguer et al., 2007).
Langan et al. (2015)	OIT	Behavioural Regulation in Sport Questionnaire (BRSQ; Lonsdale et al. 2008).
Li et al. (2017)	BPNT	Basic needs satisfaction in sport scale (BNSSS; Ng et al., 2011).
Madigan et al. (2016)	OIT	Behavioural Regulation in Sport Questionnaire (BRSQ; Lonsdale et al., 2008).
Martin & Hong (2022)	BPNT OIT	Semi-structured interview with reference to the SDT (Ryan & Deci, 2000).
Martinent et al. (2021)	BPNT	The Basic Need Satisfaction in Sporting Context Scale (BNSSCS; Gillet et al., 2008). The French version of the Psychological Need Thwarting Scale (PNTS; Martinent et al., 2015).
Yang et al. (2024)	BPNT	Chinese version of Basic Psychological Need Satisfaction Scale-in General (BPNSS-G; Liu et al., 2013).

Note: BPNT (Basic Psychological Needs Theory); OIT (Organismic Integration Theory)

Chronologically, the earliest studies included in this review focused on adopting the OIT as the primary framework for examining motivation and its relationship with athlete burnout (Langan et al., 2015; Madigan et al., 2016). The rest of papers were conducted from the BPNT perspective (except Graña et al., 2021), marking a later development in research and reflecting a growing interest in the role of basic psychological needs satisfaction and frustration within the sports context.

Organismic Integration Theory

OIT, one of the mini-theories of SDT, explains how motivation can exist along a continuum from less to more self-determined. This process involves the internalisation and integration of reasons for action. Within this framework, Langan et al (2015) evaluated the effects of a self-determination theory-based

intervention on athlete motivation and burnout through a longitudinal mixed methods study. They also investigated the feasibility and acceptability of training coaches to implement SDT-based coaching practices. In addition to measuring burnout and motivation regulation, they assessed perceived environmental support (using the Perceived Environmental Supportive Questionnaire; Tobin, 2003) and controlling coach behaviour (using the Controlling Coach Behaviour Scale; Bartholomew et al. 2010). They found that the SDT-based intervention with Gaelic footballers had a preventive effect on athlete burnout, with the control group showing significant increases from baseline to follow-up on the three dimensions of burnout, whereas the experimental group exhibited no significant increases over time on any of the dimensions.

Madigan et al. (2016) examined whether autonomous and controlled motivation mediate the relationship between perfectionism (strivings and concerns), and burnout over six months of active training in British junior athletes. Burnout levels ranged from low to moderate across all time points, revealing distinct patterns in between-person and within-person relationships. At both the interpersonal and intrapersonal levels, autonomous motivation mediated the negative relationship between perfectionistic striving and burnout, while controlled motivation only mediated the positive relationship between perfectionistic concerns and burnout at the interpersonal level. These findings suggest that variations in autonomous and controlled motivation account for the relationship between perfectionism and changes in athlete burnout over time.

Graña et al. (2021) reported that, in Spanish athletes, a specific global index of motivation calculated according to the Vallerand (1997) procedure was positively related to engagement and negatively related to burnout. Additionally, they found that burnout and engagement are reverse related, with a model explaining 38% of the variance. The relationship between motivation and burnout was mediated by engagement, with no significant gender differences. However, significant differences were observed between athletes in individual versus collective sports, with the impact of motivation on engagement being significantly stronger for individual athletes compared to those in collective sports.

Taken together, these studies highlight the central role of motivation within the OIT framework in understanding and addressing athlete burnout. Collectively, these findings underscore the nuanced ways in which motivation and its regulation contribute to burnout and engagement in sport contexts, offering insights for the development of targeted interventions.

Basic Psychological Needs Theory

This mini-theory, a core component of SDT, emphasizes how the satisfaction or frustration of autonomy, competence, and relatedness needs impacts individuals' well-being or ill-being.

Li et al. (2017) found that a long-term development focus, holistic quality preparation and effective communication were the three environmental factors that negatively predicted burnout via needs satisfaction in Singaporean athletes. This research highlighted that a talent development environment focused on long-term development, holistic preparation, and effective communication can help reduce burnout by promoting the satisfaction of athletes' basic psychological needs.

Martinent et al. (2021) demonstrated the emergence of profiles based on satisfaction and frustration with the BPN in French athletes, taking into account gender, experience and training hours, as well as profile changes over time and differences in burnout and engagement between profiles. Three profiles were identified at each time point: one comprising individuals who were fulfilled, a second comprising individuals who were moderately frustrated in terms of autonomy and competence, and a third comprising individuals who were highly frustrated in terms of competence and relatedness. The moderately frustrated autonomy and competence profile was more common among male athletes and those with more experience, whereas the fulfilled profile was more common among athletes who trained longer per week. The stability of the profiles varied over time; the fulfilled and moderately frustrated autonomy and competence profiles were more stable, whereas the highly frustrated competence and relatedness profile was less stable. Athletes in the fulfilled profile reported lower burnout and higher engagement, in contrast to the highly frustrated competence and relatedness profile, where the opposite pattern was observed.

In a study examining the mediating role of need satisfaction in Chinese athletes, Yang et al. (2024) found that somatic anxiety and concentration disruption were positively associated with burnout in athletes.

Additionally, the links between competitive anxiety (worry and concentration disruption) and athlete burnout were mediated by competence and autonomy in need satisfaction. Both Li et al. (2017) and Yang et al. (2024) emphasised the pivotal role of basic psychological need satisfaction as a mediator. These findings indicate that need satisfaction not only serves to prevent burnout but also facilitates optimal functioning by modulating the impact of other variables. In addition, Martinent et al. (2021) have identified distinct profiles based on the satisfaction and frustration of basic psychological needs. The stability of certain profiles over time highlights the necessity of sustained interventions that cultivate supportive environments for these needs to effectively prevent burnout.

Organismic Integration Theory & Basic Psychological Needs Theory

The combination of OIT and BPNT provides a comprehensive framework for explaining burnout, offering a dual perspective: the OIT explains how motivational regulation influences the onset and course of burnout, while the BPNT explains how the satisfaction or frustration of needs for autonomy, competence and relatedness contribute to its development. A broader understanding of the complex interplay between different types of motivation depending on the regulation of autonomy and psychological needs in the context of burnout is allowed for by this integrative approach.

De Francisco et al. (2020) examined the mediating role of motivational regulation in the relationship between basic psychological need satisfaction and burnout and engagement in Spanish athletes. They found that basic psychological need satisfaction directly influences burnout (negatively) and engagement (positively), while also exerting a partial indirect effect through self-determined motivation. Burnout was positively associated with low levels of self-regulated motivation, whereas engagement was positively associated with high levels of self-determined motivation.

Exploring the factors that contribute to athlete burnout and its effects on the performance of top-amateur female rugby union players in the United Kingdom, Martin and Hong (2022) found that seven players experienced the three dimensions of burnout: emotional and physical exhaustion, a reduced sense of accomplishment, and sport devaluation. They also identified antecedents such as role conflict, high physical demands, and coaching behaviours that led to maladaptive outcomes. Consistent with SDT, reduced intrinsic motivation was evident among players who had burnt out, and unmet basic psychological needs had a detrimental impact.

The OIT and BPNT frameworks demonstrate that burnout arises not only from low levels of intrinsic motivation but also from unmet needs for autonomy, competence, and relatedness. Studies reinforce that fostering self-determined motivation and addressing psychological needs are crucial for reducing burnout and enhancing athlete well-being (De Francisco et al., 2020; Martin & Hong, 2022).

Discussion

The main objective of this systematic review was to evaluate and synthesize the available empirical evidence on the application of SDT in the sports context and its relationship with athlete burnout. The findings reveal how different SDT mini-theories have been used to explain the causes and development of burnout, albeit with varying degrees of emphasis.

A relevant finding of this review is the limited scope of SDT application in burnout research. Despite SDT comprising six mini-theories (Deci & Ryan, 2017), most studies have focused on OIT and BPNT, leaving other theoretical dimensions unexplored. For example, CET could provide insights into how feedback and external rewards affect motivation and burnout (Ryan & Deci, 2000). Similarly, GCT could help assess how intrinsic and extrinsic goal orientations influence burnout risk (Hodge et al., 2008; Smith et al., 2007). This limits the scope of understanding burnout through the lens of SDT.

Respect the OIT and BPNT, it is demonstrated that both contribute valuable insights into the mechanisms underlying burnout. Collectively, these studies underscore the significance of motivation regulation and the satisfaction or frustration of psychological needs concerning the development of burnout. The findings suggest that autonomous motivation (as per OIT) and the satisfaction of autonomy, competence, and relatedness (as per BPNT) are integral to understanding athlete burnout.

From the OIT perspective, motivation was found to be a significant predictor of burnout. For instance, studies like Langan et al. (2015) and Madigan et al. (2016) show that higher levels of autonomous motivation are associated with reduced burnout, while controlled motivation or external pressures exacerbate burnout risk. Additionally, De Francisco et al. (2020) and Graña et al. (2021) highlighted that athlete engagement is positively influenced by intrinsic motivation, which, in turn, reduces burnout.

Conversely, BPNT posits that the onset of burnout in athletes is triggered by the frustration of their fundamental psychological needs, namely autonomy, competence, and relatedness. Research by Li et al. (2017) and Martinent et al. (2021) demonstrated that satisfying these needs not only prevents burnout but also promotes greater engagement and well-being. Specifically, the findings of Li et al. (2017) and Martinent et al. (2021) suggest that athletes who have not met their needs for autonomy and competence are more likely to experience higher levels of burnout, while those who have met their needs demonstrate reduced levels of burnout and enhanced engagement.

The integration of OIT and BPNT provides a more comprehensive understanding of burnout, demonstrating how motivational processes (OIT) interact with need satisfaction (BPNT). The synergy of these theoretical frameworks underscores the efficacy of fostering self-determined motivation and a conducive environment for need fulfilment in mitigating burnout. This, in turn, has the potential to enhance athletes' mental well-being and athletic performance. Moreover, studies employing mixed methods and qualitative approaches reinforce the role of psychological need frustration in burnout, particularly in relation to coaching behaviours, competition pressure, and role conflicts (Langan et al., 2015; Martin & Hong, 2022). Research indicates that coaching styles mediate the relationship between burnout and motivation, with autonomy-supportive environments fostering intrinsic motivation and controlling environments increasing burnout risk (Barcza-Renner et al., 2016; Davis et al., 2019). These findings underscore the importance of implementing SDT-based interventions in coaching practices to improve athlete motivation and well-being (Cheval et al., 2017; Langan et al., 2015). To this end, there are still few studies that jointly analyse how these two mini-theories are articulated in the manifestation and prevention of burnout in the sports environment.

It is important to mention the prevalence of cross-sectional studies (62.5%), such as the review by Li et al. in 2013 (66.6%). Cross-sectional studies provide correlational evidence; they do not allow for causal inferences or a deeper understanding of the progression of burnout. Longitudinal studies, such as Madigan et al. (2016), have shown that fluctuations in motivation affect burnout over time, highlighting the need for more research using longitudinal approaches. In addition, the limited number of qualitative studies (25%) in this review (in Li et al., 2013 all were quantitative as one of the inclusion criteria was that they should be quantitative to conduct a subsequent meta-analysis) limits insight into athletes' lived experiences of burnout, motivation and psychological need frustration. The results of a systematic review have the potential to offer evidence-based practical information for coaches, sports psychologists, and other professionals involved in managing athletes' well-being; understanding how the different components of SDT influence burnout can help establish more effective interventions to prevent this syndrome and promote healthy motivation and performance.

A further aspect worthy of consideration in the context of the preceding review pertains to the geographical expansion of research endeavours. In 2013, the majority of studies were concentrated in western countries, namely the United States (5), the United Kingdom (5), Canada (2), France (1), and Norway (1), with the exception of New Zealand (5), which geographically belongs to the East but culturally and politically it is aligned with the West. By contrast, the present review signifies an eastward expansion, encompassing studies conducted in China (1), Malaysia (1), and Singapore (1). Furthermore, studies have emerged in other western countries such as Spain (2) and Ireland (1).

The findings of this systematic review offer valuable insights for professionals working in sports contexts, particularly regarding the prevention and management of athlete burnout. The evidence supports the use of OIT and BPNT as effective frameworks. Consequently, applied work should be established that takes into account the integration of both theories. It is imperative that social environments must implement strategies to enhance autonomous motivation, and the satisfaction of basic psychological needs. The establishment of contexts that facilitate choice, encourage shared decision-making, and acknowledge individual emotions and perspectives is imperative in order to prevent burnout. The establishment of guidelines, incorporating the provision of explanations by coaches for the rationale be-

hind exercise procedures, active listening by players, the adaptation of tasks to the individual requirements of athletes, and the avoidance of excessive pressure on results by focusing attention on performance, will promote a climate that facilitates autonomy. Similarly, sport psychologists can incorporate OIT- and BPNT-informed strategies into intervention programs by fostering athletes' autonomous coping mechanisms, encouraging the pursuit of intrinsic goals, and reinforcing their sense of autonomy. At the institutional level, burnout prevention programs should be grounded in regular assessments of athletes' motivational regulation and perceived need fulfilment. They could include, for example, training in communication styles that support autonomy, positive feedback practices that strengthen the perception of competence, and group dynamics aimed at consolidating bonds between members of the technical staff. All these recommendations would enable the early detection of potentially maladaptive environments and the implementation of tailored individual or group-based strategies to promote athlete engagement and long-term well-being.

Although this review consolidates the evidence on SDT and athlete burnout, it is important to recognise a limitation. The small number of studies included (n = 8) reduces the generalisability of the findings. The previous systematic review (Li et al., 2013) included a larger number of studies (n = 18), but did not include an assessment of the methodological quality of the articles reviewed. The present review adhered to strict methodological criteria (JBI checklist with a cut-off point of 6 out of 8) to ensure the inclusion of studies with a low risk of bias, which reduced the final sample size (which would have been 36 studies without quality assessment). Additionally, the use of strict inclusion criteria—such as the exclusion of grey literature, doctoral dissertations, or unpublished studies—may have limited the diversity of perspectives and empirical evidence available on the phenomenon under study.

Future research should prioritize an integrative approach that incorporates multiple SDT mini-theories to achieve a more comprehensive understanding of athlete burnout, moving beyond the predominant focus on OIT and BPNT. Additionally, employing longitudinal and qualitative methodologies is essential to capture the dynamic nature of burnout and its progression over time, allowing for a deeper exploration of the factors influencing motivation and psychological need satisfaction. By developing a comprehensive model that examines the interplay between SDT components, future studies can contribute to the design of more precise and effective burnout prevention strategies, ultimately enhancing athlete well-being and performance.

Conclusions

This systematic review provides robust evidence that SDT offers valuable insights into the development and prevention of burnout syndrome among athletes. The present study also draws upon the concepts of OIT and BPNT, which emphasise the pivotal role of motivation and the satisfaction of psychological needs in the mitigation of burnout. Specifically, the satisfaction of autonomy, competence, and relatedness, along with self-determined motivation, have been identified as critical in the prevention of burnout and the promotion of athlete engagement and well-being. Considering these findings, future research should explore interventions that enhance self-determined motivation and create need-supportive environments to reduce burnout and must be designed and understood with the integration of the various mini-theories and their interrelationships in mind. Longitudinal and intervention-based studies are particularly needed to examine how motivation and psychological needs fluctuate over time and to assess the efficacy of targeted burnout prevention strategies. Practitioners and sports organizations should focus on implementing coaching techniques and training environments that promote autonomy, competence, and relatedness to foster athlete well-being and long-term engagement in sports.

A comprehensive understanding of the role of SDT in burnout has the potential to inform preventive strategies and interventions that consider both individual and contextual factors, with the aim of improving the mental health, performance and overall well-being of athletes.

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Appendix 1

Table A.1. Methodological Quality Assessment

Author (year)	Were the criteria for inclusion in the sample clearly defined?	Were the study subjects and the setting described in detail?	Was the exposure measured in a valid and reliable way?	Were objective, standard criteria used for measurement of the condition?	Were confounding factors identified?	Were strategies to deal with confounding factors stated?	Were the outcomes measured in a valid and reliable way?	Was appropriate statistical analysis used?	Score
Amorose & Anderson-Butcher (2015)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Barcza-Renner et al. (2016)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Cheval et al. (2017)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Chuang et al. (2023)	No	Yes	Yes	Yes	No	No	Unclear	Yes	4.5
Curran et al. (2013)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
De Francisco et al. (2020)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7.0
DeFreese & Smith (2013)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Fagundes et al. (2019)	Yes	No	Yes	Yes	No	No	Yes	Yes	5.0
Graña et al. (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8.0
Gustafsson et al. (2018)	No	Yes	Yes	Yes	No	Unclear	Yes	Yes	5.5
Harris & Watson (2014)	No	Yes	Yes	Yes	Unclear	Unclear		Yes	5.0
Holmberg et al. (2013)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Jordalen et al. (2016)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Jowett et al. (2013)	No	Yes	Yes	Yes	No	No	No	Yes	4.0
Jowett et al. (2016)	No	Yes	Yes	Yes	No	No	Unclear	Yes	4.5
Langan et al. (2015)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7.0
Langan et al. (2016)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Li et al. (2017)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	7.5
Madigan et al. (2016)	Unclear	Yes	Yes	Yes	No	No	Yes	Yes	6.0
Martin & Hong (2022)	No	Yes	Yes	Yes	Not applicable	Not applicable	Yes	Yes	7.0
Martinent & Decret (2015)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Martinent et al. (2014)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Martinent et al. (2021)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7.0
Martínez-Alvarado et al. (2016)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Martínez-Alvarado et al. (2016)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Pacewicz et al. (2020)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0

Pulido et al. (2017)	No	Unclear	Unclear	Unclear	No	No	Yes	Yes	4.5
Ramírez-Nava (2023)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Russel & Molina (2018)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Sánchez-Romero et al. (2021)	No	No	Yes	Yes	No	No	Yes	Yes	4.0
Scotto di Luzio et al. (2020)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Song & Jung (2014)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Woods et al. (2023)	No	Yes	Yes	Yes	No	No	Yes	Yes	5.0
Wu et al. (2021)	No	Yes	Unclear	Unclear	No	No	Yes	Yes	4.0
Wu et al. (2024)	No	Yes	No	No	No	No	Yes	Yes	3.0
Yang et al. (2024)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7.0

Appendix 2

Table A.2. Main results of the data extraction process.

Author/ year	Study Design	Methodology	Objectives	Participants	Instruments	Findings
De Francisco et al. (2020).	Cross	Quantitative	Analyze the mediating role of motivational regulation between the satisfaction of basic psychological needs and burnout and engagement in athletes.	1011 athletes in team and individual sports	– Spanish version of Basic Needs Satisfaction in Sport Scale (BNSSS; De Francisco et al., 2018). – Spanish version of Behavioral Regulation in Sport Questionnaire (BRSQ; Viladrich et at., 2011). – Spanish version of Athlete Burnout Questionnaire (ABQ; De Francisco, 2015). – Spanish version of Athlete Engagement Questionnaire (AEQ; De Francisco et al., 2017).	– The satisfaction of basic psychological needs has direct effects on burnout and engagement: a negative effect on athlete burnout and a positive effect on engagement. – The satisfaction of basic psychological needs has a partial indirect effect over these variables in the same direction mediated by the self-determined degree of motivation. – Low levels of self-regulated motivation are positively related to burnout, but high levels of self-determined motivation are not. The same was observed with engagement, but vice versa: high levels of self-determined motivation are positively related to athlete engagement, but low levels of self-determined motivation are not.
Graña et al. (2021)	Cross	Quantitative	Analyze the relationship among motivation, burnout, and engagement in sports.	500 federated competitive athletes in team and individual sports	– Spanish version of Athlete Burnout Questionnaire (ABQ; Arce et al., 2012). – Spanish version of Sport Motivation Scale (SMS; Balaguer et al., 2003, Balaguer et al., 2007) – Spanish version of Athlete Engagement Questionnaire (AEQ; De Francisco et al., 2017).	– Motivation is negatively related to burnout and positively to engagement, while burnout and engagement are inversely related to each other. – Engagement has a mediating role between motivation and burnout without gender differences. – There are differences between athletes who practice individual sports and those who practice collective sports (the effect of motivation on engagement is considerably greater in the case of individual athletes than those practicing collective sports.
Langan et al. (2015)	Longitudinal	Mixed methods	(a)Test the effects of a self-determination theory-based intervention on athlete motivation and burnout; (b) examine the feasibility and	87 high college/ school players in Time 1, whereas 76 players in Time 2.	– Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) – Behavioral Regulation in Sport Questionnaire (BRSQ; Lonsdale et al. 2008) – Perceived	– The intervention resulted in a preventative effect on player burnout, with the clearest impact on athlete exhaustion and a trend toward preventative effects on reduced sense of accomplishment. – The exhaustion was the burnout dimension, which

			acceptability of an intervention designed to educate coaches on 'how' to implement SDT-based coaching practices	Additionally, there were 3 experimental coaches.	Environmental Supportive Questionnaire (PESQ; Tobin, 2003) – Controlling Coach Behavior Scale (CCBS; Bartholomew et al. 2010) – Interview	demonstrated little change for the intervention group and significant increases for the control group. This was the burnout dimension that was least related to SDT variables. – Regarding intervention effects on player motivation, there were generally positive trends for the intervention group compared with the control group (small effect sizes), but we did not observe any statistically significant differences. – We expected a reduction in coach controlling behaviors for the intervention group relative to the control (Balaguer et al., 2012; Bartholomew et al., 2011); however, no differences were observed.
Li et al. (2017)	Cross	Quantitative	Investigate the relationships among the talent development environment, needs satisfaction and burnout	691 school players in team and individual sports.	– Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001). It is unclear whether the validated version for the Singaporean population was used. – Basic needs satisfaction in sport scale (BNSSS; Lonsdale, & Hodge, 2011) – Talent development environment questionnaire-5 (TDEQ-5; Li et al., 2015)	– Three talent environmental factors (i.e., longterm development focus, holistic quality preparation and communication) were negative predictors of burnout via needs satisfaction (Needs satisfaction was a full mediator for the relationships between long-term development focus/holistic quality preparation/communication and the three burnout factors)
Madigan et al. (2016)	Longitudinal	Quantitative	Examine perfectionistic strivings, perfectionistic concerns, autonomous motivation, controlled motivation, and athlete burnout in junior athletes	141 athletes from various sports	– Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) – Behavioral Regulation in Sport Questionnaire (BRSQ; Lonsdale et al., 2008) – Four subscales from the Sport Multidimensional Perfectionism Scale (SMPS; Dunn et al., 2006), – Multidimensional Inventory of Perfectionism in Sport (MIPS; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007)	– Low-to-moderate levels of burnout over all time points; a differential pattern of between- and within-person relationships emerged. – Whereas autonomous motivation mediated the negative relationship that perfectionistic strivings had with burnout at the between-and within-person level, controlled motivation mediated the positive relationship that perfectionistic concerns had with burnout at the between-person level only. – The findings suggest that differences in autonomous and controlled motivation explain why perfectionism predicts changes in athlete burnout over time.
Martin & Hong (2022)	Cross	Qualitative	Investigate contributing factors to development of athlete burnout in the context of women's rugby and effects of athlete burnout on performance among top-amateur female rugby union players in the UK	10 amateur rugby players	Interview questions were developed with – Reference to rugby related experiences, – Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001), – Previous literature regarding burnout (e.g., Cresswell & Eklund, 2005a; Gustafsson et al., 2008), – SDT (Ryan & Deci, 2000)	– Seven players exhibited the three dimensions of burnout: emotional and physical exhaustion, reduced sense 10 of accomplishment, and sport devaluation. – Significant antecedents included role conflict, high 11 physical demands, and coaching behaviors that resulted in maladaptive outcomes. – In agreement with SDT (Ryan & Deci, 2000), reduced intrinsic motivation was evident in those who had burnt out and unfulfilled basic needs had a detrimental impact on players. – Elevated stress and pressure from multiple avenues, including negative environments and coaching behaviors, were significant factors of burnout – especially if an individual's perceived resources were depleted. – Furthermore, athletes who

						experienced burnout also faced a lack of psychosocial and informed support. – Three profiles at each time points: Fulfilled, autonomy and competence moderately frustrated, and competence and relatedness highly frustrated profiles. – Male athletes and athletes with more years of experience were more likely to belong to the autonomy and competence moderately frustrated profile in comparison to the other BPN profiles. – Athletes who trained more hours a week were more likely to belong to the fulfilled profile in comparison to the autonomy and competence moderately frustrated profile. – Individuals in fulfilled and autonomy and competence moderately frustrated profiles were especially likely to stay in their respective profile at Times 2 and 3, whereas individuals in competence and relatedness highly frustrated profile were less stable in their profile membership. – Individuals from the fulfilled profiles reported lower scores of burnout and higher scores of engagement than the athletes from the two other BPN profiles. – The opposite pattern of results was observed for the competence and relatedness highly frustrated profile
Martinent et al. (2021)	Longitudinal	Quantitative	Examine (a) whether subgroups of athletes with different levels of basic psychological need (BPN) satisfaction and frustration emerged; (b) if BPN profile differences existed on sex, years of experience, and number of hours of training; (c) the issue of changes of profiles overtime; and (d) whether athletes belonging to distinct BPN profiles differed on sport burnout and engagement.	343 athletes (Time 1), 223 athletes (Time 2), 208 athletes (Time 3). All the athletes participated in team and individual sports	– Athlete Burnout Scale (ABO-S; Isoard-Gautheur et al., 2018) – French questionnaire to assess BPNS in sport - Basic Need Satisfaction in Sporting Context Scale (BNSSCS; Gillet et al., 2008). – French version (Martinent et al., 2015a) of the Psychological Need Thwarting Scale (PNTS; Bartholomew et al., 2011) – French shortened version of the Utrecht work engagement scale (UWES-9; Schaufeli & Bakker, 2003)	
Yang et al. (2024)	Cross	Quantitative	Explore the relationship between competitive anxiety and athlete burnout, with a focus on the mediating role of general need satisfaction from self-determination theory.	618 high college / school players in team and individual sports	– Chinese Version of Athlete Burnout Questionnaire (ABQ; Liu et al., 2022) – Chinese version of Basic Psychological Need Satisfaction Scale-in General (BPNSS-G; Liu et al., 2013) – Chinese version of Sport Anxiety Scale-2 (SAS-2; Zhang et al., 2023)	– Somatic anxiety and concentration disruption in competitive anxiety are positively related to athlete burnout. – Competence and autonomy in need satisfaction mediated the relationship between competitive anxiety (worry and concentration disruption) and athlete burnout.