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The influence of family support, age, and body composition on the perception of burnout syndrome in young football athletes

A influência do apoio familiar, da idade e da composição corporal na percepção da síndrome de burnout em jovens atletas de futebol

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Abstract – This study analyzed nine factors associated with burnout in U-20 soccer players: age, body mass index (BMI), years of sports practice, weekly training frequency, training duration, distance from family residence, number of family visits per year, living with family, and financial dependence on the athlete's salary. The sample included 251 male athletes from five top-division teams in the championship. Data were collected using a structured form, and burnout was assessed through the Athlete Burnout Questionnaire (ABQ), which measures physical and emotional exhaustion (PEE), reduced sense of athletic accomplishment (RSAA), and sport devaluation (SD). Age showed a negative association with PEE (β = -0.919; p = 0.001), indicating lower exhaustion levels in older athletes. BMI was positively associated with PEE (β = 1.025; p = 0.023), suggesting greater exhaustion in athletes with higher BMI. Living with family was positively associated with SD (β = 1.161; p = 0.005) and total burnout (β = 1.068; p = 0.025), indicating that athletes outside the family environment tend to perceive sports more negatively and are at higher risk of burnout. Therefore, family and psychological support, along with nutritional management, are essential for athletes' emotional and physical balance, as they prevent perceptions linked to burnout syndrome, strengthen emotional management, and contribute to promoting better athletic performance and career longevity.

Key words: Athletes; Burnout, psychological; Psychology, sports; Mental health.

Resumo – *Este estudo analisou nove fatores associados à síndrome de Burnout em atletas de futebol Sub-20: idade, índice de massa corporal (IMC), tempo de prática esportiva, frequência semanal de treinos, duração dos treinos, distância da residência familiar, número de visitas à família por ano, moradia com a família e dependência financeira do salário do atleta. A amostra incluiu 251 atletas masculinos de cinco equipes das divisões principais do campeonato. Dados dos participantes foram coletados por ficha estruturada e o burnout do atleta foi avaliado pelo Questionário de Burnout para Atletas (QBA), que mensura exaustão física e emocional (EFE), reduzido senso de realização esportiva (RSR) e desvalorização esportiva (DES). A idade apresentou associação negativa com a EFE (β = -0,919; p = 0,001), o que indica menores níveis de exaustão em atletas mais velhos. O IMC teve relação positiva com a EFE (β = 1,025; p = 0,023), o que sugere maior exaustão em atletas com maior IMC. Morar com a família foi associado positivamente à DES (β = 1,161; p = 0,005) e ao burnout total (β = 1,068; p = 0,025), o que indica que atletas fora do ambiente familiar tendem a perceber o esporte de forma mais negativa e apresentam maior risco de burnout. Portanto, o suporte familiar e psicológico, aliado ao controle nutricional, é indispensável para o equilíbrio emocional e físico dos atletas, pois previne percepções associadas à síndrome de Burnout, fortalece a gestão emocional e contribui para a promoção de um melhor desempenho esportivo e longevidade na carreira.*

Palavras-chave: *Atletas; Esgotamento psicológico; Psicologia do esporte; Saúde mental.*

INTRODUCTION

In competitive sports, the physical, mental, and psychological demands are intense and frequent, imposing significant challenges on athletes. When poorly managed, these pressures can increase stress levels, compromising mental health and directly impacting performance[1]. The complexity of this scenario reflects the interaction between internal and external factors, requiring athletes not only to have technical preparation but also effective strategies to cope with the emotional and psychological demands imposed by the pursuit of high performance[2].

Soccer is one of the most practiced and competitive sports globally, attracting thousands of young athletes striving for professional success from the youth categories. Due to the evolution of this sport over the years, the need to achieve high performance to meet the physical, technical, and tactical standards proposed by clubs has increased[3].

Given these demands, athletes face increased stress associated with factors such as high training demands, time dedicated to competition preparation, adaptation to interpersonal relationships (with club directors, teammates, coaches, and technical staff), and pressure to be selected[4]. Professionalization, even at the youth level, is accompanied by a heavy training load and an accelerated specialization process in the sport, which can lead to injuries and burnout from high training volumes[5]. Approximately 11% of athletes report burnout symptoms throughout their careers, with a significant increase in recorded cases over the past two decades. These data highlight growing concerns about the potential for mental health disorders in this population associated with such symptoms[6,7].

Athlete burnout is understood through a three-dimensional theoretical model[8], which considers the syndrome as comprising: physical and emotional exhaustion, causing the athlete to experience feelings of demotivation and mental and physical fatigue; a reduced sense of athletic accomplishment, characterized by the perceived difficulty in achieving dreams and goals; and sport devaluation, where the athlete exhibits disinterest and a negative attitude toward the sport.

Burnout syndrome in sports is associated with a range of negative outcomes, including withdrawal from a sports career, reduced training efficiency, increased vulnerability to injuries, and declines in motivation and athletic performance[4]. Additionally, athletes with elevated levels of burnout symptoms often exhibit a higher incidence of emotional problems, such as depressive symptoms[9].

There is evidence indicating a growing number of athletes at risk of developing burnout symptoms. A meta-analysis investigating trends in athlete burnout syndrome over two decades (1997 to 2019) revealed a significant increase in symptoms related to athlete burnout and its negative consequences for this period[10]. These findings highlight the need for further investigations into the factors contributing to the development of burnout, particularly among young athletes undergoing transitional phases in their sports trajectories. Therefore, the objective of this study was to investigate the factors associated with the development of burnout syndrome and its dimensions in under-20 soccer athletes during the 2019 São Paulo State Under-20 Championship.

METHOD

Participants

The sample was selected by convenience, consisting of 251 male athletes with an average age of 18.46 ± 0.69 years, affiliated with clubs participating in the São Paulo State Under-20 Championship, in the first or second divisions.

Instruments

The participants' data were collected through a structured form to identify the sample's profile, which included information such as: age, body mass index (BMI), years of sports practice, weekly training frequency (in days), training duration (in minutes), distance from the family residence (in kilometers), number of family visits per year, living with family ("Do you live with your family?": Yes/No), and family financial dependence on the athlete's salary ("Does the family depend on the athlete's salary?": Yes/No).

To assess feelings related to burnout syndrome, the Athlete Burnout Questionnaire (ABQ) was used, in its translated and validated Brazilian Portuguese version[11]. The ABQ consists of 15 items, organized into three subscales corresponding to the dimensions of athlete burnout. Each dimension includes five questions: physical and emotional exhaustion (PEE) (e.g., "I feel physically drained from practicing this sport"); reduced sense of athletic accomplishment (RSAA) (e.g., "I'm not getting anything really important out of this sport"); and sport devaluation (SD) (e.g., "The time I spend on this sport would be better spent doing other things"). Responses are evaluated on a 5-point Likert scale, ranging from "almost never" (1) to "almost always" (5). The available options include "rarely" (2), "sometimes" (3), and "frequently" (4).

The score for each dimension was obtained by summing the responses to the corresponding items. The result is divided by the total number of items, yielding averages that indicate the levels of each subscale of the syndrome. Total burnout is obtained by averaging all the responses to the 15 items of the questionnaire, with score interpretation based on the frequency of reported feelings. For example, an athlete who scores an average of 2.5 in the "physical and emotional exhaustion" dimension indicates that the athlete experiences these feelings with a frequency ranging between "rarely" and "sometimes."

Procedures

The clubs were invited to participate in the research, and after the invitation, a date was scheduled for the presentation to the athletes and the administration of the questionnaires. During the meeting, the objectives of the research were explained to the participants, emphasizing that participation was voluntary and in accordance with the ethical principles of research with human subjects.

Subsequently, the questionnaires were administered collectively, allowing sufficient time for the athletes to respond. The researchers were available to clarify any doubts or provide guidance.

The exclusion criteria established to ensure data eligibility were: failure to agree with the Informed Consent Form (ICF) and incomplete completion of the instruments.

Statistical analysis

The data were summarized using descriptive statistics. The normality of the distribution of continuous variables was assessed using the Kolmogorov-Smirnov test. The variable "number of family visits per year" was categorized into tertiles of the sample, with the following cutoff points: ≤ 2 = rarely; ≤ 20 = sometimes; > 20 = frequently, to indicate the "Frequency of family visits."

To identify the factors associated with the dimensions of burnout syndrome, Generalized Linear Models were performed. Then, the Akaike Information Criterion (AIC) was used to remove the least significant predictors, optimizing the models. All analyses were conducted using IBM SPSS software, version 25.

RESULTS

Table 1 presents the characteristics of the participants, as well as the data obtained from the administration of the Athlete Burnout Questionnaire (ABQ).

Table 1. Characteristics of Under-20 Athletes from the São Paulo State Football Championship

Variable	Minimum	Maximum	Mean	SD
Age (years)	17	22	18.46	0.69
BMI (kg/m²)	17.3	27.2	22.21	1.66
Years of sports practice	1	18	9.94	2.83
Weekly training frequency (days)	5	11	5.62	0.70
Training duration (minutes)	60	240	120.60	25.45
Distance from family residence (km)	30	9200	808.59	1031.01
Number of family visits per year	0	365	18.25	30.811
Athlete Burnout Questionnaire (ABQ)				
Physical and emotional exhaustion (PEE)	1	3.4	1.90	0.55
Sport devaluation (SD)	1	4.2	1.77	0.60
Reduced sense of athletic accomplishment (RSAA)	1.4	5.0	2.71	0.53
Burnout total	1.3	3.5	2.13	0.40

Note. BMI = Body Mass Index; SD = Standard Deviation.

Table 2 presents the factors associated with the dimensions of burnout. The Akaike Information Criterion (AIC) was used to remove the least significant predictors from each model. Regarding Physical and Emotional Exhaustion (PEE), age was found to be a significant predictor with a negative association (β = 0.919; p = 0.001), indicating lower levels of PEE among older athletes. Body Mass Index (BMI) showed a positive association (β = 1.025; p = 0.023), highlighting that a higher BMI is related to greater PEE. For the dimension of Sports Devaluation (SD), the variable 'living with family' was identified as a significant predictor with a positive association (β = 1.161; p = 0.005), indicating that athletes who do not live with their families are more likely to have higher scores in SD. As for Reduced Sense of Athletic Accomplishment (RSAA), the variables analyzed did not show statistically significant associations. In the total burnout model, a positive association with the variable 'living with family' was observed (β = 1.068; p = 0.025), suggesting that athletes who do not live with their families have higher scores in the total burnout score.

Table 2. Factors associated with the dimensions of burnout among under-20 athletes in the Paulista Football Championship.

Dependent Variables	Predictors	β	CI 95%		*p-value*
			Lower	Upper	
PEE	Does the family depend on the athlete's salary?				
	Yes	1.099	0.986	1.225	0.088
	No	1			
	Age	0.919	0.874	0.966	0.001*
	BMI (kg/m^2)	1.025	1.003	1.047	0.023*
SD	Lives with the family?				
	No	1.161	1.047	1.287	0.005*
	Yes	1			
	Weekly training frequency (in days)	0.971	0.921	1.025	0.285
RSAA	Frequency of visits to the family				
	Frequently	1.042	0.975	1.113	0.223
	Sometimes	1.054	0.987	1.125	0.115
	Rarely	1			
Burnout total	Lives with the family?				
	No	1.068	1.008	1.131	0.025*
	Yes	1			
	Does the family depend on the athlete's salary?				
	No	0.935	0.873	1.001	0.054
	Yes	1			
	Age	0.971	0.940	1.003	0.073

Note. Significant results are indicated by the asterisk (*); PEE = Physical and Emotional Exhaustion; SD = Sports Devaluation; RSAA = Reduced Sense of Accomplishment; BMI = Body Mass Index; CI = Confidence Interval.

DISCUSSION

This study aimed to investigate the factors associated with the development of burnout syndrome and its dimensions in Sub-20 football players during the 2019 Paulista Championship Sub-20, considering family support, age, and body mass index (BMI) of these athletes. The analysis sought to understand how these factors influence the levels of Physical and Emotional Exhaustion (PEE), Reduced Sense of Accomplishment (RSAA), Sports Devaluation (SD), and total burnout.

The results indicated that athletes who do not live with their family showed a positive association with the Sports Devaluation (SD) dimension and with total burnout. This finding suggests that the absence of a family environment negatively impacts the perception of success and well-being in sports[12]. A systematic review and meta-analysis highlighted that a supportive family environment helps reduce the risks of developing burnout and its dimensions, including sports career dropout[12].

Social support, especially from family members, is essential in athletes' lives, providing emotional comfort and stability[13]. This support can occur directly, through words of encouragement and practical assistance, or indirectly, as an ongoing support network that promotes psychological well-being and resilience in sports[13]. Since the family is often considered the primary source of social support for the athlete[9,14].

The dimension of physical and emotional exhaustion (PEE) showed a significant negative association with the age variable, revealing that the older the athletes, the lower their perception of symptoms related to this dimension of athlete burnout. According to research, athletes who balance dual careers, especially those approaching 20 years of age, face interpersonal and professional career demands that can lead to excessive stress[15]. Younger athletes, in turn, face greater difficulties in dealing with emotional and psychological situations generated by training and competition demands, as well as other personal responsibilities. Maturation factors, such as changes resulting from puberty, can also psychologically affect these individuals, requiring significant adaptations[16].

Moreover, studies point out that athletes with more practice time use more effective coping strategies to deal with symptoms related to the perception of burnout syndrome[17,18]. In the present study, the average practice time of the athletes investigated can be considered a protective factor, contributing to the reduction of the emergence of symptoms related to burnout and its dimensions. Thus, athletes with more years of sports experience tend to face psychological and physical adversities imposed by the sport more efficiently[17,18].

Additionally, although the athletes showed, on average, a eutrophic pattern of Body Mass Index (BMI), a positive association was observed between BMI and the dimension of PEE, suggesting that a higher body mass may be related to increased physical and emotional exhaustion. This may occur due to the additional demands imposed by body composition or inadequate dietary habits[16]. However, it is important to emphasize that this study did not assess the nutritional routine of the teams, highlighting the need for future investigations on the relationship between dietary practices, physical conditioning, and mental health.

Although the study has some limitations, its practical applications in the sports field are relevant, as psychological, nutritional, and physical monitoring is essential for understanding the athletes' contexts, preventing symptoms of exhaustion and burnout, and promoting well-being and performance. The integration of these strategies into sports planning strengthens the athletes' mental and physical health, favoring the continuity of their careers and achieving better results in sports.

CONCLUSION

This study underscores the significance of factors such as family support, age, BMI, and practice time in understanding burnout in Sub-20 football players. The results suggest that a lack of family support and higher BMI are associated with increased burnout, while older athletes tend to experience fewer symptoms of physical and emotional exhaustion. These findings highlight the importance of psychological, nutritional, and physical monitoring in preventing burnout and promoting athlete well-being, suggesting that a holistic approach can enhance both performance and career longevity in sports.

Compliance with ethical standards

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Ethical approval

Ethical approval was obtained from the local Human Research Ethics Committee – Jundiaí School of Physical Education and the protocol (no. 3,242,142) was written in accordance with the standards set by the Declaration of Helsinki.

Conflict of interest statement

The authors have no conflict of interests to declare.

Author Contributions

Conceived and designed the experiments: ACFJ, BAN, JGCC. Performed the experiments: ACFJ, BAN, JGCC. Analyzed the data: ASSC, VKBS, DAP. Contributed reagents/materials/analysis tools: ASSC, VKBS, DAP. Wrote the paper: ASSC, VKBS, DAP.

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