



Burnout syndrome and motivation aspects in elite motocross athletes

Síndrome de burnout y aspectos motivacionales en atletas élite de motocross

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Abstract

Introduction: Burnout syndrome may negatively affect athletes' well-being and performance, with motivation playing an important role in its development.

Objective: The aim of this study was to investigate the prevalence of burnout syndrome and its relationship with motivation and performance level in elite motocross athletes.

Methodology: Thirty athletes from the MX1, MX2, and MXJr categories participated in this cross-sectional study. Burnout syndrome was assessed using the Athlete Burnout Questionnaire, and motivation was evaluated using the Behavioral Regulation in Sport Questionnaire.

Results: The prevalence of burnout syndrome was 20.69%, with 17.24% of athletes presenting low burnout and 3.45% moderate burnout. In the MX1 category, amotivation was positively correlated with total burnout and physical and emotional exhaustion, whereas extrinsic motivation was negatively correlated with reduced sense of accomplishment. In MX2 athletes, intrinsic motivation was negatively associated with total burnout and reduced sense of accomplishment. In the MXJr category, extrinsic motivation was positively correlated with sports devaluation. No significant differences in burnout syndrome or motivation were observed among the three competitive categories. However, higher-performance athletes exhibited lower reduced sense of accomplishment and higher integrated regulation than lower-performance athletes.

Discussion: Burnout was associated with motivational regulation in elite motocross athletes. Self-determined motivation was related to lower burnout symptoms, while amotivation was associated with higher burnout levels.

Conclusions: Elite motocross athletes showed a considerable prevalence of burnout syndrome associated with motivational factors. More self-determined forms of motivation were related to lower burnout symptoms and more favorable performance outcomes.

Keywords

Athletes; mental health; performance; psychology; sport.

Resumen

Introducción: El síndrome de burnout puede afectar negativamente el bienestar y el rendimiento de los atletas, siendo la motivación un factor importante en su desarrollo.

Objetivo: El objetivo de este estudio fue investigar la prevalencia del síndrome de burnout y su relación con la motivación y el nivel de rendimiento en atletas de motocross de élite.

Metodología: Treinta atletas de las categorías MX1, MX2 y MXJr participaron en este estudio transversal. El síndrome de burnout fue evaluado mediante el Athlete Burnout Questionnaire y la motivación fue evaluada mediante el Behavioral Regulation in Sport Questionnaire.

Resultados: La prevalencia del síndrome de burnout fue del 20,69%, con un 17,24% de atletas presentando burnout bajo y un 3,45% burnout moderado. En la categoría MX1, la desmotivación se correlacionó positivamente con el burnout total y con el agotamiento físico y emocional, mientras que la motivación extrínseca se correlacionó negativamente con la reducción del sentido de logro. En los atletas MX2, la motivación intrínseca se asoció negativamente con el burnout total y la reducción del sentido de logro. En la categoría MXJr, la motivación extrínseca se correlacionó positivamente con la devaluación del deporte. No se observaron diferencias significativas en el burnout o la motivación entre las tres categorías competitivas. Sin embargo, los atletas con mayor rendimiento presentaron menor reducción del sentido de logro y mayor regulación integrada en comparación con los atletas de menor rendimiento.

Discusión: El burnout se asoció con la regulación motivacional en atletas de motocross de élite. La motivación autodeterminada se relacionó con menores síntomas de burnout, mientras que la desmotivación se asoció con mayores niveles de burnout.

Conclusiones: Los atletas de motocross de élite presentaron una prevalencia considerable de síndrome de burnout asociada a factores motivacionales. Las formas más autodeterminadas de motivación se relacionaron con menores síntomas de burnout y resultados de rendimiento más favorables.

Palabras clave

Atletas; deporte; psicología; rendimiento; salud mental.

Introduction

Motocross (MX) is an off-road motorcycle sport characterized by high physical and technical demands. Athletes must navigate turns, jumps, drops, and other obstacles along a one- or two-mile track while controlling heavyweight dirt bikes, which places substantial physiological and perceptual demands on performance (Vieira et al., 2013). In addition to these sport-specific demands, motocross is a high-cost discipline in which sponsors, racing teams, and/or athletes' families often provide financial support. This context may intensify stress exposure and psychophysiological load. Previous research has shown increases in catecholamine levels after MX races, highlighting the high psycho-emotional stress involved in this sport, and suggesting that motocross athletes may be vulnerable to psychophysiological syndromes such as overtraining and burnout, which can negatively affect performance and contribute to early sport retirement (Ascensão et al., 2007; Lonsdale et al., 2009).

Burnout syndrome in sport has been discussed within a self-determination framework, in which chronic stress, motivational depletion, and diminished perceived competence may contribute to withdrawal from training and competition (Moreno, 2006; Guedes, 2016; Raedeke, 1997; Pestana, 2009; Vallerand, 2001). In this perspective, burnout is commonly expressed through physical and emotional exhaustion, reduced sense of accomplishment, and sport devaluation. These symptoms may emerge when athletes are repeatedly exposed to excessive external demands, inadequate recovery, and persistent pressure to perform.

Motivational regulation appears to be central to this process. According to Self-Determination Theory, motivation ranges along a continuum from amotivation to extrinsic and intrinsic forms of regulation, with distinct behavioral consequences for athletes' engagement and adaptation (Deci & Ryan, 1985; Lonsdale & Hodge, 2011; Lundkvist et al., 2018). Intrinsic motivation refers to practicing sport for enjoyment, interest, and personal satisfaction, whereas extrinsic motivation is linked to external outcomes such as recognition, rewards, or approval. In contrast, amotivation reflects a lack of intention and purposeful engagement in sport (Sarrazin et al., 2002). Previous studies have suggested that motivational quality is associated with burnout development and that behavioral regulation may influence whether athletes experience sport as a source of growth or as a source of strain (Lonsdale et al., 2008; Pires et al., 2006; Lonsdale & Hodge, 2011).

In addition to motivational regulation, competitive factors are also widely associated with burnout development. Athletes' ranking, perceived pressure, and the social context surrounding performance may influence emotional strain and the likelihood of burnout symptoms (Lonsdale et al., 2008; Pires et al., 2006; Vieira et al., 2013). In motocross specifically, these pressures may be intensified by the need to maintain sponsorships, manage mechanical and financial constraints, and sustain performance across a demanding season. Consequently, understanding how burnout and motivation interact in elite motocross may provide important insight into the psychological processes that support performance and sport adherence, or, alternatively, contribute to sport dropout.

Given the high psychophysiological demands of MX, it is important to investigate the prevalence of burnout syndrome and its association with motivational aspects in elite motocross athletes. Therefore, the main purpose of the present study was to examine the prevalence of burnout syndrome and its relationship with motivation in elite MX athletes. In addition, the secondary purpose was to determine whether performance level and competitive category influence burnout syndrome and related symptoms. We hypothesized that athletes with higher levels of intrinsic motivation would present lower burnout scores, whereas athletes with higher amotivation and maladaptive extrinsic regulation would present greater burnout-related symptoms.

Method

Participants

All the athletes present at the championship (MX1: $n = 15$; MX2: $n = 17$; MXY: $n = 24$) were invited to take part in the study. Among them, thirty male motocross elite athletes (20.63 ± 4.7 years; 8.3 ± 2.4



years of experience) from the Brazilian Motocross Championship participated in the study. Athletes participated in the following classes: MX1 ($n = 8$; ranging 15-45 years old and racing with motorbikes of 125 to 250cc at two-strokes or 250 to 450cc at four-strokes); MX2 ($n = 12$; ranging 14-23 years old and racing with motorbikes of 125 to 150cc at two-strokes or up to 250cc at four-strokes); MXyoung ($n = 10$; ranging 11-15 years old and racing with motorbikes of 70 to 150cc at two-strokes or 75 to 150cc at four-strokes). All athletes and guardians (when athletes were under-18) signed a consent form authorizing participation in the study. In our analysis, we classified the athletes into low- ($n = 15$) or high-performance ($n = 15$) levels according to their ranking in the Brazilian Championship. The ranking is obtained according to the score on each race (each position in the race received a score) during the championship. To define the level of performance, the overall ranking by points during 6 stages was used, with data collection taking place in the last stage (7th). We used the following as inclusion criteria for the sample: a) males' athletes; b) agreeing to take part in the study; c) being ranked in the Brazilian Motocross Federation; d) complying with the rules for the competition classes. As exclusion criteria, the athletes could not be injured during the data collection stage and all had to complete the race. This research was carried out fully in accordance with the Declaration of Helsinki and approved by the Ethics Committee of North University of Paraná (208.975/2013).

Procedure

Twenty-four hours before starting the final stage of the Brazilian Motocross Championship, the athletes answered the Athlete Burnout Questionnaire (De Francisco et al., 2020) and Behavioral Regulation in Sport Questionnaire (Lonsdale et al., 2008; Dubuc-Charbonneau et al., 2014) to verify, respectively, burnout and motivation levels.

Athlete Burnout Questionnaire: The most current version of Athlete Burnout Questionnaire was adjusted to be used with athletes in different sports. The Questionnaire measures the frequency with which personal feelings and attitudes towards sports are experienced. The questionnaire is constituted of a Likert scale with 15 items distributed equally among three components (physical and emotional exhaustion, reduced sense of accomplishment and sports devaluation). Preceded by the statement "How often do you feel this way?" to each of the items was assigned degrees of increasing intensity with arrangement on a continuum of 1 to 5, being 1 (almost never), 2 (rarely), 3 (sometimes), 4 (frequently) and 5 (almost always).

Instrument

This procedure was initially used in a cluster analysis of several studies (Hernandez et al., 2004; Tutko & Richards, 1984; De Francisco et al., 2020). For this, a cut-off point ≥ 3 units were used to dichotomize the individual average scores of the young athletes by each of the components that make up the burnout syndrome (< 3 = low average score, ≥ 3 = high average score). The answers were categorized into: (a) low burnout syndrome: high average scores on one of the three components; (b) moderate burnout syndrome: high average scores on two of the three components; (c) high burnout syndrome: high average scores on three components, simultaneously (physical and emotional exhaustion, reduced sense of accomplishment, sports devaluation). In this case, it is important to emphasize that the indicated cut-off point was based on arbitrary statistical criteria and was used only to verify the existence or not of the burnout syndrome. For the analysis of the data, the average of the individual data was used in the three existing subscales (physical and emotional exhaustion reduced sense of accomplishment and sports devaluation) and for the total values of Burnout.

Behavioral Regulation in Sport Questionnaire: The Behavioral Regulation in Sport Questionnaire was designed with 36 items, preceded by the statement "/ participate in my sport ...? I practice sports ...", in which the respondent indicates the degree of agreement that best matches his case, using a seven-point Likert type scale (1 = "Not all true"; 4 = "Somewhat true"; 7 = "Very true"). According to the purpose and detail required in the interpretation of the information showed by the respondent, the set of 36 items that make up the Behavioral Regulation in Sport Questionnaire enables an analysis of the continuum of self-determination through the questionnaire.

The Behavioral Regulation in Sport Questionnaire, used in the present study, seeks to meet the subscales designed to identify the three types of intrinsic motivation (Casagrande et al., 2018), considering for the purpose of analysis eight subscales. To identify motivational subscales associated with sports practice

using Behavioral Regulation in Sport Questionnaire, the mean scores were calculated for the eight subscales, and then these data were grouped into intrinsic motivation (intrinsic motivation goals, intrinsic motivation stimulating experiences and intrinsic knowledge motivation), extrinsic motivation (extrinsic motivation external regulation, extrinsic motivation introjected regulation, extrinsic motivation identified regulation, extrinsic motivation integrated regulation) and amotivation.

Data analysis

Data were reported by mean, standard deviation and frequency. The normality of the data was assessed using the Kolmogorov-Smirnov test and homogeneity of variances was confirmed using the Levene test, respectively. The association between burnout and motivation items in the three classes (MX1 vs. MX2 vs. MXyoung) and different performances (low- vs. high-performance) were analyzed using Spearman's correlation. One-way ANOVA was used to test the difference between burnout and motivation subscales (dependent variables) in the different classes and performances (independent variables). When the F value was significant, a Bonferroni's post hoc test for multiple comparisons was applied to identify the differences. Spearman's correlation was classified by: negligible ($r = 0 - 0.3$), weak ($r = 0.3 - 0.5$), moderate ($r = 0.5 - 0.7$), strong ($r = 0.7 - 0.9$), very strong ($r > 0.9$). All analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 25.0 (IBM Corp., Armonk, NY). Statistical significance was considered when $p < .05$.

Results

Our results showed that in the general context of motocross, the burnout syndrome showed a frequency of 20.69% (six of thirty riders), with 17.24% (five of thirty riders) with low burnout and 3.45% (one of thirty riders) with moderate burnout. Analyzing by class, in the MX1 there were no participants with burnout, while that in the MXyoung, only one case was found (10% of sample) with low burnout. On the other hand, in the MX2 class, it was found four cases of low burnout (33.3%) were found and one case of moderate burnout (8.3%), representing a frequency of 41.6%.

In MX1, positive correlations between amotivation and subscale burnout syndrome were identified (physical and emotional exhaustion, $r = 0.69$; sports devaluation, $r = 0.68$; total burnout, $r = 0.68$). In addition, a moderate negative correlation between the mean of extrinsic motivation and reduced sense of accomplishment ($r = -0.64$) were identified. The MX2 class showed negative correlations between the mean intrinsic motivation with reduced sense of accomplishment ($r = -0.58$) and total burnout ($r = -0.60$). The MXyoung showed only a strong positive correlation ($r = 0.72$) between the mean of extrinsic motivation and sports devaluation (Table 1).

Table 1. Correlation coefficients between Burnout Syndrome and Motivation, in different classes.

			Motivation		
			Amotivation	Mean IM	Mean EM
MX1 (n = 8)	Burnout	PEE	0.69*	-0.07	-0.38
		RSA	0.28	-0.33	-0.64*
		SDV	0.68*	-0.38	-0.30
		Total	0.68*	-0.23	-0.50
MX2 (n = 12)	Burnout	PEE	0.12	-0.26	-0.04
		RSA	0.02	-0.58*	-0.35
		SDV	-0.31	-0.48	-0.44
		Total	-0.08	-0.60*	-0.38
MXyoung (n = 10)	Burnout	PEE	-0.06	-0.25	0.13
		RSA	-0.11	-0.09	0.02
		SDV	0.54	0.55	0.72*
		Total	0.21	0.16	0.42

Note. PEE = physical and emotional exhaustion; RSA = reduced sense of accomplishment; SDV = sports devaluation; IM = intrinsic motivation; EM = extrinsic motivation. *Significant correlation, $p < 0.05$

When compare the burnout syndrome and motivation among the three classes analyzed, no was found differences (Table 2).



Table 2. Comparison between Burnout Syndrome and motivation in different classes.

		MX1		MX2		MXyoung		Anova
		Mean	SD	Mean	SD	Mean	SD	
Burnout	PEE	1.85	0.65	2.30	0.56	1.74	0.60	$F_{(2)} = 2.26; p = 0.09$
	RSA	1.52	0.30	2.13	0.82	1.70	0.63	$F_{(2)} = 2.35; p = 0.11$
	SDV	1.30	0.28	1.72	0.66	1.88	0.87	$F_{(2)} = 1.73; p = 0.19$
Motivation	ExtR	1.22	0.52	1.54	0.68	1.92	1.11	$F_{(2)} = 1.67; p = 0.21$
	EtjR	3.44	1.15	3.81	1.21	3.27	1.02	$F_{(2)} = 0.65; p = 0.53$
	IdfR	6.28	1.14	5.27	1.42	6.10	0.86	$F_{(2)} = 2.17; p = 0.13$
	ItgR	5.91	0.88	5.87	1.11	6.42	0.54	$F_{(2)} = 1.21; p = 0.31$
	IMA	6.84	0.23	6.33	0.75	6.80	0.33	$F_{(2)} = 3.07; p = 0.06$
	IMS	6.22	1.12	6.33	0.60	6.70	0.48	$F_{(2)} = 1.09; p = 0.35$
	IMK	6.09	1.00	5.44	1.27	6.27	0.97	$F_{(2)} = 1.72; p = 0.19$
	AMOT	1.22	0.39	2.56	1.25	2.67	1.70	$F_{(2)} = 3.50; p = 0.45$
	Mean IM	6.38	0.68	6.03	0.81	6.60	0.56	$F_{(2)} = 1.79; p = 0.19$
	Mean EM	4.21	0.60	4.12	0.76	4.43	0.61	$F_{(2)} = 0.58; p = 0.57$

Note. PEE = physical and emotional exhaustion; RSA = reduced sense of accomplishment; SDD = sports devaluation; AMOT = amotivation; ExtR = extrinsic motivation external regulation; EMIR = extrinsic motivation introjected regulation; IdfR = extrinsic motivation identified regulation; ItgR = extrinsic motivation integrated regulation; IMA = intrinsic motivation to accomplish; IMS = intrinsic motivation to experience stimulation; IMK = intrinsic motivation to knowledge; IM = intrinsic motivation; Mean EM = average motivation; * Significant difference, $p < 0.05$.

When the analysis was categorized by performance level, athletes with high-performance showed a moderate negative correlation ($r = -0.56$) between the mean intrinsic motivation and physical and emotional exhaustion. In athletes classified as low-performance, there is no correlation between burnout syndrome and motivation (Table 3).

Table 3. Correlation coefficients between Burnout Syndrome and Motivation, at different levels of performance.

			Motivation		
			Amotivation	Mean IM	Mean EM
High performance (n = 15)	Burnout	PEE	0.20	-0.56*	-0.07
		RSA	-0.06	-0.44	-0.29
		SDV	0.35	0.19	-0.00
		Total	0.20	-0.43	-0.18
Low performance (n = 15)	Burnout	EFS	0.11	-0.07	-0.08
		RSA	0.38	-0.37	-0.14
		SDV	0.43	-0.08	0.19
		Total	0.40	-0.21	0.01

Note. PEE = physical and emotional exhaustion; RSA = reduced sense of accomplishment; SDD = sports devaluation; IM = intrinsic motivation; EM = extrinsic motivation. *Significant correlation, $p < 0.05$.

However, there were differences for reduced sense of accomplishment ($F_{(1)} = 5.22; p = 0.03$) and for extrinsic motivation integrated regulation ($F_{(1)} = 3.68; p = 0.03$) among athletes with different performance levels (Table 4).

Table 4. Comparison between Burnout Syndrome and motivation at different levels of performance.

		High performance		Low performance		Anova
		Mean	SD	Mean	SD	
Burnout	PEE	2.43	1.53	2.05	1.25	$F_{(1)} = 1.81; p = 0.19$
	RSA	1.43	0.64	1.73	1.00	$F_{(1)} = 5.22; p = 0.03*$
	SDV	3.70	1.35	3.37	0.85	$F_{(1)} = 0.81; p = 0.38$
Motivation	AMOT	6.18	0.90	5.45	1.45	$F_{(1)} = 0.56; p = 0.46$
	ExtR	6.42	0.72	5.72	0.95	$F_{(1)} = 0.96; p = 0.34$
	EtjR	6.75	0.35	6.50	0.71	$F_{(1)} = 0.65; p = 0.43$
	IdfR	6.50	0.82	6.35	0.67	$F_{(1)} = 2.83; p = 0.10$
	ItgR	6.23	0.96	5.55	1.24	$F_{(1)} = 3.68; p = 0.03*$
	IMA	1.84	0.54	2.15	0.70	$F_{(1)} = 5.19; p = 0.23$
	IMS	1.60	0.55	2.09	0.72	$F_{(1)} = 1.50; p = 0.59$
	IMK	1.55	0.42	1.77	0.88	$F_{(1)} = 0.30; p = 0.10$
	Mean IM	6.50	0.63	6.13	0.77	$F_{(1)} = 1.96; p = 0.17$
	Mean EM	4.43	0.55	4.07	0.74	$F_{(1)} = 2.38; p = 0.13$

Note. PEE = physical and emotional exhaustion; RSA = reduced sense of accomplishment; SDD = sports devaluation; AMOT = amotivation; ExtR = extrinsic motivation external regulation; EMIR = extrinsic motivation introjected regulation; IdfR = extrinsic motivation identified regulation; ItgR = extrinsic motivation integrated regulation; IMA = intrinsic motivation to accomplish; IMS = intrinsic motivation to experience

stimulation; IMK = intrinsic motivation to knowledge; IM = intrinsic motivation; Mean EM = average motivation; * Significant difference, $p < 0.05$.

Discussion

The purpose of this study was to investigate the frequency of burnout syndrome and/or related systems with respect to motivation and performance level. In general, the burnout syndrome showed a frequency of 20.69%, being 17.24% with low burnout and 3.45% with moderate burnout considering all elite motocross athletes in this study. Participants using the MX1 showed a positive correlation between amotivation and subscale burnout syndrome. A negative correlation was found between the mean of extrinsic motivation and reduced sense of accomplishment. The MX2 class showed negative correlations between the mean intrinsic motivation with total burnout and reduced sense of accomplishment. Participants in the MXyoung class showed only a positive correlation between the mean of extrinsic motivation and sports devaluation. When the burnout syndrome and motivation were compared among the three classes analyzed, no differences were found. In the analysis of performance level, our results showed a negative correlation between the mean intrinsic motivation and physical and emotional exhaustion in high performance athletes. In addition, there were differences for reduced sense of accomplishment and for extrinsic motivation integrated regulation among athletes at different performance levels.

Our findings showed a prevalence of 20% of Burnout syndrome in Brazilian MX elite athletes. Recently, 22.4% and 5.2% of moderate and high burnout, respectively, were identified in young non-professional athletes of various modalities (Cresswell & Eklund, 2005). This prevalence is attributed to various factors, such as excessive training and personal relationships with guardians and/or coaches, which may lead to negative experiences within the sport (Ascensão et al., 2007).

In the analysis of MX1, amotivation was positively associated with total burnout and physical and emotional exhaustion. A negative correlation was found between extrinsic motivation and reduced sense of accomplishment. Amotivation is characterized as "lacking in motivations" it is not surprising that amotivation and exhaustion have been associated with syndrome of athlete burnout (Lonsdale, et al., 2008; Raedeke, 1997). This result could be related to needs and frustrations of athletes (ranking in the races, and mechanical state of motorcycles), team pressure, need to keep the sponsors happy, physical conditioning (training) and end season pressure (competition) (Deci & Ryan, 2000). This is in agreement with studies that have shown that levels of amotivation (self-determined motivation), physical and emotional exhaustion are associated with negative outcomes (Raedeke, 1997; Chang et al., 2017). Moreover, the characterization of the extrinsic motivation and its search for external results might explained our results, suggesting that athlete may search for external goals through the sports practice, and not sports performance per se (Pestana, 2009).

The MX2 category showed a mean intrinsic motivation negatively correlated to reduced sense of accomplishment and total burnout. It is widely known that intrinsically motivated athletes are characterized by the search for competitive challenges, so it is natural that intrinsic motivation is associated with these values of competence and autonomy. Hence, the values of total burnout and reduced sense of accomplishment correlated inversely, given that the athlete finds self-accomplishment in the practice of sports (Pestana, 2009). Indeed, Lonsdale, Hodge & Rose (2008) showed negative correlations between burnout and basic psychological needs, such as autonomy, competence and social relations, in accordance with our findings.

Interestingly, the MXjr category showed a positive correlation between the mean of extrinsic motivation and sports devaluation. This trend relationship can be explained by the regulation of extrinsic motivation, which is externally based on rewards, so the sports practice is not performed for its own satisfaction (Pestana, 2009). Therefore, at the same time that there is support from family members, coaches, and sponsors, there is the issue of the sport's devaluation, since motocross is not a common sport in Brazil and in the world, when compared to soccer, volleyball, or basketball.

Our analysis between the three categories, no was found differences when comparing burnout syndrome and motivation. Different from our findings, a prior study that investigated the burnout syndrome between three categories of elite junior tennis players showed a difference between categories



of 14-, 16- and 18-year-olds (Cresswell & Eklund, 2006). The burnout syndrome, might arise for causative factors, financial aspects, warning signs, and consequences associated with the athlete's personality and coping strategies and the sports environment (Lemyre et al., 2006). These multifactorial reasons may explain the difference between our results.

When analyzed by performance, our results showed a negative correlation between the mean intrinsic motivation and physical and emotional exhaustion, indicating that high performance athletes are more intrinsically motivated, perceive less physical and emotional exhaustion from playing sports, mitigating the burnout relationship. These findings are in agreement with Dubuc-Charbonneau et al. (2014), who showed a negative association between intrinsic motivation and burnout-related dimensions, such as reduced sense of accomplishment, physical and emotional exhaustion and sports devaluation.

An additional finding that deserves further consideration is that athletes with higher performance levels exhibited lower reduced sense of accomplishment and higher integrated regulation than lower-performance athletes. Although elite competition is frequently associated with increased physical, psychological, and environmental demands, these results suggest that superior performance is not necessarily accompanied by greater burnout-related symptoms. According to Self-Determination Theory, integrated regulation represents a more autonomous form of extrinsic motivation, characterized by the internalization of sport participation into an athlete's personal values and identity (Deci & Ryan, 2000). Therefore, athletes with higher performance levels may experience a stronger sense of purpose, competence, and self-determination, which could contribute to lower perceptions of reduced accomplishment despite the demands of competitive motocross. These findings are consistent with evidence indicating that more self-determined forms of motivation are associated with greater psychological well-being, persistence, and sport engagement, whereas less autonomous forms of motivation are more frequently linked to maladaptive outcomes, including burnout symptoms (Lonsdale et al., 2009; Gustafsson et al., 2011). Consequently, the present results reinforce the notion that motivational quality, rather than competitive level itself, may play a central role in the development or prevention of burnout among elite athletes.

From a practical standpoint, athletes' coaching staff must have the knowledge and tools to assess burnout syndrome. Motivational aspects may act either as protective factors that favor performance and sport adherence or as risk factors associated with burnout and possible sport dropout. Specifically, for Brazilian MX, coaching staff must have a sports psychologist to prevent and/or treat burnout syndrome or burnout-related symptoms, avoiding the deleterious effects associated with this condition, which can culminate in early sport retirement. Additionally, athletes with higher values for amotivation and/or extrinsic motivation need to be especially careful to prevent the development of burnout syndrome. We suggest and encourage future studies to investigate burnout syndrome at different stages of competition using a longitudinal design, relating it to physiological and social variables, the influence of social networks, family income, training load, different sports, and different categories. Thus, the influence of stress and competition on burnout and its variables can be observed over the long term.

Conclusions

Elite motocross athletes have a high frequency of burnout (20.69%), associated with motivational aspects. The MX coaching staff should have a sports psychologist to prevent and treat burnout syndrome-related aspects, to avoid deleterious effects on sports performance, which can culminate in early retirement from the sport.

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