

Burnout and coping perceptions of judo athletes throughout a sport season

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ABSTRACT

This study aimed to investigate burnout and coping throughout a year of competition as well as to analyse the relationship between dimensions of burnout and coping strategies. Brazilian high-level judo athletes (N = 20) completed questionnaires of burnout and coping. Data collection occurred four times throughout a sport season. Although the results showed no increase in burnout dimensions, the confidence/motivation coping strategy increased during the season. Moreover, burnout dimensions showed a moderate and inverse correlation to confidence/motivation throughout the season.

Keywords: Stress; Sport psychology; Motivation.

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INTRODUCTION

In the early 1980s, burnout was introduced to the sports' context, and has since been considered a complex syndrome particularly important to the elite sport setting. This notion was supported by 102 articles conducted to examine burnout in various age groups and types of sports (Gustafsson et al., 2014). Actually, the prevalence of burnout in young elite athletes reaches 12% (Gerber et al., 2018).

Burnout among elite athletes is a cognitive-affective syndrome resulting from chronic stress comprised of three core components: physical and emotional exhaustion; a reduced sense of athletic accomplishment; and sport devaluation (Raedeke and Smith, 2009). The first is the feeling of no energy, which is associated with stressful demands from training and competition. Of the three dimensions of burnout, exhaustion comes closest to the orthodox stress variable, and therefore is the most predictive of stress-related health consequences (Maslach and Leiter, 2016). The second is dissatisfaction related to one's skills and prowess in sport. Finally, the third is a negative attitude or indifference toward a previously beloved sport activity (Raedeke and Smith, 2001). Over the last two decades, empirical research on burnout became frequent due to growing concerns regarding the negative implications of the syndrome on athletes' performance and health (Gustafsson et al., 2017). Moreover, research on athlete burnout is of great interest to coaches, managers and sport organizations (Davis et al., 2019).

As burnout is a reaction to chronic stress (Smith, 1986), the management of stressful situations (i.e., coping) should be relevant to preventing and controlling burnout (John and Henrik, 2013; Madigan et al., 2020). The burnout control can be done through coping, a set of behavioural and cognitive efforts aimed to control, reduce or tolerate internal or external demands that arise in specific stressful situations and are evaluated as overloads (Folkman and Lazarus, 1985). The stressful situations in sports environment are related, for example, to the high competitiveness and the expectations of others for good results (Nicholls and Levy, 2016). Thus, coping is considered a part of an individual's psychological defence against various stressors. In addition, the development of coping skills is an important tool to manage challenging situations and improve performance (Kent et al., 2018). In sports literature, coping includes strategies such as coping with adversity, peaking under pressure, freedom from worry, and confidence/achievement motivation (Smith and Christensen, 1995). Considering motivation as an example of coping strategy, recent study highlighted that the dimensions of amotivation (absence of motivation) are effective markers to predict athlete burnout in the preparatory and competitive periods (Fagundes et al., 2019).

Unfortunately, how elite athletes cope over time is not well understood. Golf players change coping strategies before, during, and after periods of competition. The pre competitive utilization of increased effort, suppression of competitive activities, and seeking of social support was greater than the competitive and post competitive utilization of these strategies (Gaudreau et al., 2001). On the other hand, coping profiles from French athletes drawn from 16 individual and team sports exhibited both stability and changes before and during competition from an individual perspective (Martinent and Nicolas, 2016). This behaviour highlights the need to assess coping at each phase of a season rather than relying on measures of how athletes typically cope during a competition.

Burnout and coping variables were investigated in college volleyball players in a longitudinal study that indicated coping suppressed the relationship between passion types and changes in stress-related outcomes, so different types of coping influenced different types of passion, which influenced goal attainment and also burnout over the course of a season (Schellenberg et al., 2013). However, the season in question was relatively short (approximately 3 months). Also, the participants did not compete in high-level

championships. As we wanted to understand the changes in burnout syndrome and its correlation with coping strategies throughout a season of individual sports, the present research assessed the burnout and coping scores of elite judo athletes at four time points over a year-long sport season.

As an individual combat sport, judo presents specific characteristics regarding its technical and tactical requirements, as well as psychosocial demands (Rogowska and Kuśnierz, 2012). Judokas need to simultaneously attack and defend while deciding on alternative offensive and defensive manners (Ziv and Lidor, 2013). Also, judo is mainly characterized by solitude during competition (i.e., no teammates during the fights, only opponents), as well as by an accumulation of critiques, sacrifices, and responsibilities. These situations can enhance the feeling of burnout dimensions, as well as the adoption of coping strategies, during a season of competition (Hill et al., 2010).

Based on the previous findings, this research aimed to analyse the perceptions of burnout dimensions and coping strategies from a longitudinal perspective as well as to correlate temporal burnout and coping strategies in athletes. First, we hypothesized that burnout and its dimensions would increase over time and that personal coping resources and coping strategies would decrease. Second, we expected to find negative associations between burnout and coping variables during the season.

MATERIAL AND METHODS

Participants

Twenty athletes (sixteen men and four women) were recruited from a Brazilian professional judo team (age $M = 20.35$ years, $SD = 2.98$, range 17-29). Athletes had to meet two criteria to participate in the study. First, they had to compete in national- and/or international-level competitions. Second, the athletes had to be present at the four data collection points.

Measures

The Athlete Burnout Questionnaire (ABQ)

This scale is a 15-item self-report questionnaire containing three subscales (Raedeke and Smith, 2001): physical and emotional exhaustion (e.g., I feel so tired from my training that I have trouble finding the energy to do other things), a reduced sense of athletic accomplishment (e.g., It seems that no matter what I do, I don't perform as well as I should), and sport devaluation (e.g., The effort I spend participating in my sport would be better spent doing other things). Also, the global value from the instrument addresses the total burnout. The participants responded to the items on a Likert scale ranging from 1 (almost never) to 5 (almost always). The ABQ has shown good construct validity and a high internal consistency (Gerber et al., 2018). To assess the burnout data of the Brazilian athletes, the ABQ Portuguese version (known as QBA) was adopted. QBA's validity and reliability was obtained by Pires et al. (2006). Based on the current research, it seems that there is no definitive burnout threshold. One approach has been to use the mean item response for each subscale, where a score ≥ 3 on at least one ABQ subscale signifies some degree of burnout (Raedeke and Smith, 2009). Other approach have emphasized the proportion of athletes scoring ≥ 3 across all three subscales (Eklund and Cresswell, 2007) as this reflects a stronger experience of burnout symptoms. In the present study, we assumed that athletes scoring ≥ 3 on any one subscale were considered to be experiencing burnout.

Athletic Coping Skills Inventory (ACSI)

Coping was measured through ACSI-28BR, the Portuguese version (Miranda et al., 2018) of the Athletic Coping Skills Inventory (ACSI-28) (Smith et al., 1995). This is a 28-item questionnaire that assesses the

thoughts and actions that athletes use to address internal or external demands. Each item refers to one of seven factors that represent coping strategies in sports (Smith and Christensen, 1995): coping with adversity (CA), peaking under pressure (PP), goal setting/mental preparation (MP), concentration (CO), freedom from worry (FW), confidence/achievement motivation (CM), and coachability (COA). Also, the global value from the instrument addresses the personal coping resources (PCR). The answers are rated on a Likert scale ranging from "almost never" (0) to "almost always" (3).

Procedures

Data collection was conducted at four time points distributed throughout a year of the sport season to analyse burnout and coping strategies. The first moment (M1) was preseason (January). The second moment (M2) was during the Brazilian National Judo Cup (May). The third moment (M3) was during the State Championship (September), and the fourth moment (M4) was the Brazilian National Olympic and Youth team trials (December).

The University Ethics Committee approved this study and all the standards established by the Brazilian National Board of Health for Research involving human beings as well as American Psychological Association (APA) procedures were respected.

Analysis

Demographic data were analysed by descriptive statistics (percentage, mean and standard deviation). The normality of the data was assessed by Shapiro-Wilk's test. The effects of dependent variables on burnout and coping strategies were determined using Friedman's test, analysing the four moments cited before, and *post hoc* Dunn's test was adopted for pair comparisons.

Spearman's correlation coefficient (*rho*) was applied to verify the relationship between burnout and coping dimensions at the four data collection moments. A minimum critical $\rho > 0.4$ was considered valid when analysing the correlation between variables, as this value corresponds to the lower limit of moderate strength for the correlation between variables (Hair et al., 2009). All statistical procedures were calculated by Prisma statistical package, version 6 (GraphPad Software Inc, San Diego, CA). The level of significance was set at $p < .05$.

RESULTS

Data from the prevalence of burnout reported 35% of the sample experiencing burnout in M1, 60% in M2, 35% in M3, and 25% in M4. Considering all season (from M1 to M4), two athletes (10% of the sample) presented some degree of burnout.

Before the main analysis, an assessment of the instruments' internal consistency (Cronbach's alpha) supported their reliability for assessing burnout from QBA (PEE α = from .73 to .82, RSA α = from .69 to .87, SDE α = from .15 to .85). The reliability of the coping strategies from ACSI-28BR were as follows: CA α = from .49 to .80, PP α = from .57 to .87, MP α = from .60 to .80, CO α = from .01 to .68, FW α = from .02 to .59, CM α = from .28 to .59, COA α = from .46 to .86, and PCR α = from .72 to .86.

The data did not show a normal distribution, and Friedman's test was thus adopted to compare the scores of the four selected moments of the season. The analysis of the perception of physical and emotional exhaustion, as seen in Figure 1, showed that the frequency of feeling exhausted did not change significantly over the four observed moments ($X^2 = 2.26$; $p = .520$). The analysis of a reduced sense of athletic

accomplishment also did not show a change in the frequency of the feeling in the four moments ($X^2 = 6.72$; $p = .081$). Moreover, the feeling of sport devaluation did not change in frequency over the four moments ($X^2 = 2.10$; $p = .551$). Finally, the analysis of the total burnout perceptions in the season also did not show a significant change in frequency in the four observed moments ($X^2 = 2.91$; $p = .406$).

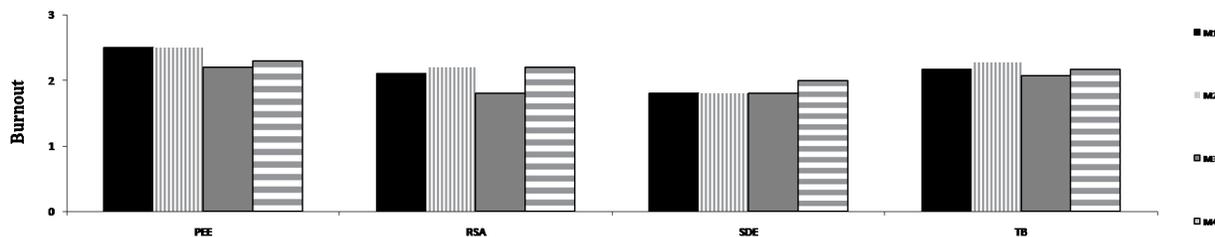


Figure 1 shows PEE = Physical and emotional exhaustion; RSA = Reduced sense of athletic accomplishment; SDE = Sport devaluation; TB = Total burnout; M1 = Moment 1; M2 = Moment 2; M3 = Moment 3; M4 = Moment 4.

Figure 1. Median scores of burnout variables in judo athletes (n = 20).

The confidence/motivation coping strategy, as Figure 2 shows, changed significantly during the four observed moments ($X^2 = 9.23$; $p = .026$). The results of *post hoc*'s test showed that judo athletes had a greater use of this strategy in M3 compared to M1 ($p = .014$) and M2 ($p = .041$). The dealing with adversity strategy did not change significantly over the four time points ($X^2 = 2.95$, $p = .267$). Similar results were found for the other strategies analysed: performance under pressure ($X^2 = 0.05$, $p = .997$); goals/mental preparation ($X^2 = 5.30$, $p = .151$); freedom from worry ($X^2 = 4.70$, $p = .195$); concentration ($X^2 = 2.49$, $p = .476$) and coachability ($X^2 = 2.35$, $p = .503$). There were also no significant differences in personal coping resources ($X^2 = 4.68$; $p = 0.197$).

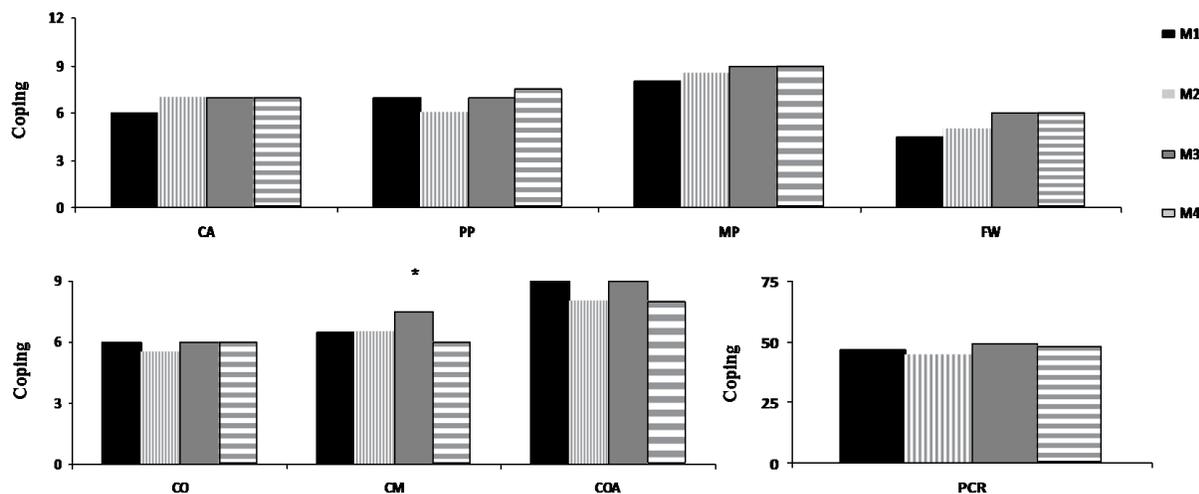


Figure 2a shows CA = Coping with adversity; PP = Peaking under pressure; MP = Goal setting/Mental preparation; FW = Freedom from worry. Figure 2b shows CO = Concentration; CM = Confidence/Motivation; COA = Coachability. Figure 2c shows PCR = Personal coping resources; M1 = Moment 1; M2 = Moment 2; M3 = Moment 3; M4 = Moment 4. Note: * $p < .05$ (compared to M1 and M2).

Figure 2. Median scores of coping variables in judo athletes (n = 20).

The analysis of total burnout and confidence/motivation shown in Table 1 identified significant and moderate negative correlations in the four moments (M1: $\rho = -0.59$, $p = .007$; M2: $\rho = -0.52$, $p = .018$, M3: $\rho = -0.45$, $p = .046$; M4: $\rho = 0.62$, $p = .004$). The analysis also showed the same pattern of correlations between a reduced sense of athletic accomplishment and goals/mental preparation in M2 ($\rho = -0.66$, $p = .002$) and M4 ($\rho = -0.69$, $p = .001$). Moreover, sport devaluation and coachability showed significant, negative, and moderate correlations, but only in M3 ($\rho = -0.64$, $p = .002$) and M4 ($\rho = -0.49$, $p = .029$).

Table 1. Correlations between burnout and coping variables throughout a sport season.

M1 (Preseason)								
	CA	PP	MP	CO	FW	CM	COA	PCR
PEE	-.15	-.04	.13	-.10	-.36	-.16	-.03	-.14
RSA	-.43	-.13	-.40	-.04	-.22	-.57*	-.13	-.38
SDE	-.21	-.08	-.10	-.18	-.23	-.43	-.29	-.31
TBU	-.41	-.13	-.18	-.15	-.43	-.59*	-.02	-.42
M2 (Brazilian National Judo Cup)								
	CA	PP	MP	CO	FW	CM	COA	PCR
PEE	.01	-.32	-.01	-.09	-.14	-.25	.18	-.17
RSA	-.26	-.20	-.66*	-.12	.02	-.55*	.02	-.52*
SDE	.02	-.31	-.45*	-.02	-.01	-.43	.25	-.30
TBU	-.10	-.35	-.47*	-.10	-.06	-.52*	.19	-.42
M3 (Minas Gerais State Championship)								
	CA	PP	MP	CO	FW	CM	COA	PCR
PEE	-.17	-.27	.11	.06	-.28	-.21	-.34	-.29
RSA	.11	-.18	-.36	-.19	-.15	-.39	-.20	-.33
SDE	.30	.03	.04	.21	-.13	-.49*	-.64*	-.14
TBU	.09	-.19	-.08	.03	-.24	-.45*	-.49*	-.32
M4 (Trials for Brazilian National Olympic and Young teams)								
	CA	PP	MP	CO	FW	CM	COA	PCR
PEE	-.05	-.21	-.24	-.22	-.01	-.39	-.46*	-.37
RSA	-.35	-.41	-.69*	-.08	-.16	-.60*	-.26	-.64*
SDE	-.24	-.29	-.60*	-.07	-.13	-.61*	-.49*	-.59*
TBU	-.26	-.36	-.61*	-.13	-.12	-.62*	-.45*	-.62*

Note: PEE = Physical and emotional exhaustion; RSA = Reduced sense of athletic accomplishment; SDE = Sport devaluation; TBU = Total Burnout; CA = Coping with adversity; PP = Peaking under pressure; MP = Goal setting/Mental preparation; CO = Concentration; FW = Freedom from worry; CM = Confidence/Motivation; COA = Coachability; PCR = Personal coping resources. * $p < .05$.

DISCUSSION

This study investigated the effects of burnout and coping throughout a sports season among judo athletes performing at national and international levels and also correlated the temporal characteristics of burnout with coping. Two hypotheses were tested. The first hypothesis stated that burnout and dimensions of burnout would increase over time and that personal coping resources and coping strategies would diminish, and the second hypothesis stated that burnout and coping variables would be negatively associated during the season.

The first hypothesis regarding increases in burnout and its dimensions was not confirmed. This result may have been caused by the schedule of competitions. The national judo calendar did not show an increase in competing demands during the season. The Brazilian Cup (M2) represented a context of greater physical, technical, and psychological requirements, as the winners would be recognized by the clubs and the Brazilian national team as outstanding athletes; this recognition improved the athlete's probability of participating in international competitions. Moreover, the State Championship (M3) represented a lower level of demand due to the disparity between the athletes in the present study and those participating in the competition, who were not ranked high enough to participate in this study. The State Championship for the athletes included in this study was thus a very easy competition. Finally, M4 was the time when the Brazilian Olympic Youth teams were formed and again showed a highly competitive requirement.

These fluctuations in the competitive demands over the season were reflected in the perceptions of the burnout variables (with the exception of sport devaluation, all other dimensions and total burnout showed lower scores in M3 than in M1, M2 and M4). However, these differences were not significant and are similar to the findings of a study of Wiggins et al. (Wiggins et al., 2006), who found no significant differences in perceived burnout over time in college athletes from three individual and two team sports. Data from a team sports context (Pires et al., 2016) shed light on the increase in perceived burnout in volleyball athletes with the accumulation of training and competitions, as well as the need for optimal performance in important competitions. In contrast with volleyball, the lower demands of M3 in the middle of the season could have diminished the perceived burnout in the present study. The players could have been relaxed and ready for M4, resulting in no differences between the four moments over the year. Therefore, the present results address the cognitive-affective model of sport burnout (Smith, 1986) by showing that the burnout development represents complex interactions between environmental and personal characteristics.

Regarding the scores for coping strategies over the season, judo athletes showed increased confidence/motivation in M3 (State Championship) versus M2 (Brazilian Cup) and M1 (Pre-Season). One possible explanation for this finding is related to situational characteristics, as the athletes who participated in this study were favoured to be on the podium at the State Championship (M3), and all of them easily reached their goals in the competition. This finding is in line with the meta-model of stress, emotions and performance (Fletcher and Fletcher, 2005) that highlights the influence of personal and situational characteristics in the coping process.

The change in application of the confidence/motivation strategy in different scenarios reinforces the perspective of coping as a state, as proposed in the transactional model of Lazarus and Folkman (1984). According to this perspective, how people react to stressful situations should be considered a psychological process that is susceptible to the intervention of cognitive, motivational, and relational factors. The findings of this study indicate that the use of the confidence/motivation strategy increases when there is a competition (increased from M1 to M3), maybe because there was congruency of the expectations of the athletes with the possibility of victory (Fletcher and Fletcher, 2005). Consequently, the higher certainty of success in the sporting context such as in M3 increased the use of coping strategy. However, when the certainty is reduced such as in M2, the use of this strategy is also reduced. Future studies should aim to identify why the use of coping strategies changes throughout a season as well as why individuals choose different coping strategies (Lazarus and Folkman, 1984; Rogowska and Kuśnierz, 2012).

Regarding other coping strategies and personal coping resources, the results of the present study point to the predominance of a stable application of coping strategies over time and situations, and this may be interpreted as evidence of the existence of preferred coping strategies that are used by each athlete in

different stressful situations. The use of consistent strategies as a reflection of a preferred coping strategy lends support for a proposal to understand coping as a trait (Louvet et al., 2007).

However, it remains unclear why athletes show consistency (trait approach) or variability (state approach) in their coping strategies (McDonough et al., 2013). Individual's disposition or tendency to select certain coping strategies when faced with stressful situations may explain whether or not positive or negative outcomes occur (Arnold et al., 2017).

In general, the burnout dimensions did not increase but one coping strategy increased from M1 to M3, so we can say that the first hypothesis was not confirmed. The second hypothesis was then analysed, which stated that there would be a negative association between burnout and coping variables during the season.

Concerning the correlations between burnout and coping during preseason (M1), there was a reduced frequency of negative and moderate correlations between the burnout and coping variables. The characteristics of preseason (restarting workouts after a period of rest and enjoyment, reduced pressure due to the absence of competition) may have resulted in the fewer correlations observed between burnout and coping.

In M2 and M4, negative and moderate correlations between the reduced sense of athletic accomplishment and sport devaluation dimensions and goals/mental preparation were observed. These two moments refer to the main competitive periods experienced by athletes during the season (Brazilian Cup and trials for Brazilian Youth and Olympic teams). When thinking about M2 and M4, judo athletes should set realistic goals and improve their mental toughness to control for symptoms of burnout in periods of major competition (Madigan and Nicholls, 2017). Therefore, athletes who are aware of their capabilities and limitations, who prepare themselves mentally for the training and competitions and who have action plans to manage difficult situations are less likely to show symptoms of burnout.

In moments M3 and M4, the sports devaluation dimension and total burnout were inversely correlated with the coachability strategy, suggesting that from the second half of the season, the way judo athletes incorporated the guidance and criticism of the coaching staff during the training and competitions was associated with perceptions of burnout. When athletes are open and amenable to learning from training, exercise the ability to address critiques and avoid considering criticisms as personal insults, it is likely easier to maintain low levels of perceived burnout (Granz et al., 2019).

Regarding the correlations between burnout and coping variables measured during preseason (M1) and in competitive moments (M2, M3, and M4), total burnout presented significant, negative, and moderate correlation with confidence/motivation. The association between loss of motivation and emergence of burnout was observed in previous studies (Cresswell and Eklund, 2005a, 2005b). The findings of a recent study suggest that fostering coping strategies such as confidence and motivation may be useful for avoiding burnout (Gustafsson et al., 2018).

Although some burnout and coping variables showed negative and moderate correlations (e.g., reduced sense of athletic accomplishment and confidence/motivation), this association was not observed for other variables (e.g., burnout dimensions and concentration). So, the second hypothesis was confirmed for trusting in skills and motivation strategies but not for focusing on the task and avoiding distractions. Consequently, this question remains unclear and should be addressed on future longitudinal studies.

Despite the strengths of this study with respect to its novelty, one potential limitation warrants mention: a number of the coping alpha coefficients were found to be weak or marginal. However, this is a recurring historical characteristic in the coping literature. According to Levy et al. (2011), internal consistency coefficients are often reduced because a coping response, from a particular category, may singularly be enough to decrease stress. Therefore, the need to use other coping strategies from the same category is diminished.

Our results may be helpful to coaches and trainers. For example, data from prevalence revealed that 10% of the judokas presented some degree of burnout during the entire season, which is in accordance with recent investigations in the sport context (Gerber et al., 2018; Madigan et al., 2019). However, data from each moment of the season showed higher incidence of perceived burnout, pointing to the need for psychological monitoring of athletes. The results illustrate the benefits of obtaining data at key moments throughout a season to identify how athletes perceive the dimensions of burnout and employ coping strategies over the course of a season. Finally, the results of this study suggest that coping strategies such as confidence and motivation are key to avoiding burnout.

CONCLUSIONS

Although the results showed no increase in burnout dimensions, the confidence/motivation coping strategy increased during the season. Moreover, burnout dimensions showed a moderate and inverse correlation to confidence/motivation throughout the season.

AUTHOR CONTRIBUTIONS

Each author contributed significantly to the development of the manuscript. D.A.P. conducted bibliographic research, followed athletes and collected data throughout the sporting season. D.A.P. and H.U. contributed to the intellectual concept of the study, actively participated in the analysis of the results, and performed the revision of the final version of the manuscript.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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