

Motivational climate, resilience, and burnout in youth sport

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Abstract

Purpose Grounded in the theoretical framework of achievement goal theory, the purpose of this study was to examine the role of some personal factors (perceived competence and resilience) and situational variables (motivational climate) on burnout in young athletes practicing team sports.

Methods Participants were 87 adolescent basketball and volleyball players.

Results Mastery (task-involving) climate correlated positively with resilience and perceived competence, and negatively with the three dimensions of burnout (emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation). In contrast, performance (ego-involving) climate related positively with the three dimensions of burnout. Regression analysis results showed perceived mastery climate to significantly contribute to the amount of the variability in two burnout variables (i.e., reduced sense of accomplishment and sport devaluation). In addition, resilience and perceived competence were shown to moderate the effects of the motivational context towards burnout.

Conclusions Overall, findings suggest protective effects of mastery climate, resilience, and perceived competence against burnout symptoms. From an applied perspective, coaches should adopt suitable behaviours to promote a mastery-involving climate.

Keywords Youth sport · Burnout · Motivational climate · Perceived competence · Resilience

Introduction

A primary aim of youth sport programs is to promote desirable psychological and social development as well as improvement of physical skills and fitness. It has been suggested that sport engagement should result in a pleasant experience for young athletes to foster their participation in sports and welfare throughout a lifetime [1]. Sport experience is commonly a source of enjoyment for youngsters, although physical and psychological constraints may be perceived as too demanding. Indeed, intense training and competitive pressure to succeed can lead young athletes to experience chronic stress and burnout symptoms [2].

Athlete burnout has been defined as a multidimensional phenomenon characterized by: (a) emotional and physical exhaustion, associated with intense training and competition; (b) reduced sense of accomplishment, with athletes feeling unable to achieve personal goals and performing below expectations; and (c) sport devaluation, referring to a loss of interest, a “don’t care” attitude or resentment toward the sport environment [3–5]. This conceptualization is well-established and supported by several studies in sport contexts [6, 7].

Athlete burnout represents a dysfunctional and maladaptive outcome that underpins psychological and

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physical ill-being. High-level and experienced athletes who endure repeated and exhausting training loads with insufficient recovery are most susceptible to burnout [8]. However, young athletes are also at risk of experiencing burnout, which may lead to early dropout from sport [9, 10]. Burnout in sport may develop gradually and remain long unnoticed by those who are concerned [11]. Therefore, it is important to identify psychological antecedents of burnout to prevent it, particularly in young athletes.

In the sport context, motivational processes play an important role in predicting intentions regarding sport participation and dropout from sport [12, 13]. A prominent theoretical perspective in the study of motivation in sport is the achievement goal theory [14, 15]. This interactionist approach ascribes importance to individual motivational dispositions, as well as to situational factors. Perception of competence is a central construct within achievement goal theory. People can use different criteria to judge their own competence in achievement settings. Task-oriented individuals assess their success according to self-referenced criteria that reflect feelings of personal improvement and effort. In contrast, ego-oriented people feel success when they outperform others or demonstrate greater ability than others with less effort.

In addition to personal orientation, situational factors (i.e., the motivational climate) also play a crucial role [14]. Perceived motivational climate is proposed as a situational variable created by influential persons. In a mastery (task-involving) climate, coaches emphasise improvement, effort, cooperation, learning, and social relations. They view mistakes as naturally associated with the learning process, and encourage athletes to persist in overcoming difficulties. Conversely, in a performance (ego-involving) climate, coaches foster social comparison, intra-team competition, and normative-based evaluation. They also criticise athletes who commit mistakes or underperform [16, 17].

A few studies grounded in achievement goal theory have examined the relationship between perceived motivational climate and burnout in young athletes. Perceptions of high performance and low mastery motivational climate were shown to predict emotional and physical exhaustion (i.e., dimensions of burnout) in international junior elite tennis players [18]. In another study, those junior athletes who perceived a strong performance climate coupled with a weak mastery climate were more vulnerable to burnout [19]. These athletes experienced augmented physical and emotional exhaustion, reduced perceptions of personal accomplishment, and augmented devaluation of sport. Of note, physical and emotional exhaustion and reduced sense of accomplishment were negatively associated with mastery climate, while sport devaluation was positively related to performance climate. These findings suggest that when

athletes tend to perceive the climate created by their coaches as more performance and less mastery involving, the risk of burnout becomes greater.

Recently, some researchers in sport setting have examined the relationship between burnout and resilience, starting from the hypothesis that resilience can mediate or moderate the relationship between the stressors and subsequent burnout symptoms [10]. Resilience is thought as a personal trait that enables an individual to thrive in the face of adversity [20]. In sport-related studies, resilience has been defined as the ability of athletes to manage adversities, such as injuries, career transitions, or burnout [21, 22]. It is deemed to protect athletes from difficulties and adverse events, and considered a prerequisite of sport excellence [23].

Given the scant research in this area and the importance of the topic, the purpose of the current study was to examine the role of personal factors (perceived competence and resilience) and situational variables (motivational climate) on burnout in young athletes practicing team sports. Consistently with the literature, we hypothesized protective effects of mastery climate, resilience, and perceived competence against burnout symptoms.

Materials and methods

Participants

Eighty-seven youngsters, 46 girls and 41 boys, aged 15–18 years (M age = 15.92, SD = 1.12), playing basketball (n = 45) or volleyball (n = 42) participated in this study. Youth athletes were recruited from six clubs playing in regional leagues in Central Italy. Agreement to conduct the study was obtained from sport managers and coaches after we explained to them the general purpose of the study. Eighteen year-olds signed an informed consent, minors provided written assent and their parents signed an informed consent.

Measures

Perceived motivational climate

The Perceived Motivational Climate in Sport Questionnaire (PMCSQ) [24] is a 12-item measure that includes a 6-item mastery climate scale (e.g., “On this team, the coach makes sure participants improve on skills they’re not good at”) and a 6-item performance climate scale (e.g., “On this team, participants are encouraged to outplay the other participants”). Participants rate their responses on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Support for the two-factor structure of the

translated questionnaire was shown in an Italian sample [25]. The Cronbach alpha value was 0.76 on mastery scale scores and 0.70 on performance scale scores.

Resilience

A 10-item scale was created to examine resilience. While developing the instrument, we considered previous scales (e.g., Connor-Davidson Resilience Scale; Resilience Scale) [20, 26], and adapted the content of items to the sport context. Responses were indicated on a five-point scale from 1 (*not true at all*) to 5 (*true nearly all the time*). The internal reliability of this measure reached an acceptable level in the current study (Cronbach alpha = 0.78).

Perceived competence

Individual's perceptions of competence in sport were determined through a single-item scale ranging from 1 (*very, very poor*) to 11 (*excellent*). Participants were asked to assess themselves while thinking about their global skill level in their sport. Several authors have argued in favour of self-referenced performance criteria to account for factors not easily quantifiable through objective measures [27, 28].

Burnout

Burnout was assessed using the 15-item Athlete Burnout Questionnaire (ABQ) [5]. The ABQ includes three burnout scales, 5 items each, named emotional/physical exhaustion (e.g., "I feel overly tired from my sport participation"), reduced sense of accomplishment (e.g., "I am not performing up to my ability in sport"), and sport devaluation (e.g., "I'm not into sport like I used to be"). Respondents indicate how often they felt or thought a certain way during the current season on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). Cronbach alpha values for the subscales ranged from 0.84 to 0.88 [2].

Procedure

Assessment was conducted in nearby training facilities before a regular practice session. An investigator administered the multi-section questionnaire to groups of up to five participants. Prior to questionnaire administration, participants were told that the general purpose of the study was to investigate motivation and stress in sport. They were also presented with instructions indicating that there were no right or wrong answers, and emphasis was placed on the confidentiality of responses.

Data analysis

Data were screened for missing data, potential outliers, and violations of assumptions of normality, linearity, multicollinearity, and homogeneity of variance-covariance matrices through frequency and scatter plots, and Box's *M* test [29]. Mean scores were computed for all of the questionnaire scales. Descriptive statistics, scale reliability, and Pearson product-moment correlation coefficients were derived for all measures.

Multivariate analysis of variance (MANOVA) was conducted on the scores of dependent variables to examine possible differences by gender, age categories (≤ 15 and > 15 years), and sport (basketball and volleyball). To predict burnout, hierarchic regression was performed entering perceived competence and resilience scores, and then perceived motivational climate scores. The scores of the ABQ scales were entered separately as dependent variables in the analysis.

Results

Descriptive statistics and correlations

Descriptive statistics, correlation coefficients, and scale reliabilities are reported in Table 1. As can be observed, scores of perceived mastery climate were larger than scores of perceived performance climate. It is also worth noting that mastery climate correlated positively with resilience and perceived competence, and negatively with the three scales of burnout. In contrast, performance climate related positively with the three scales of burnout. Finally, resilience correlated negatively with burnout and positively with perceived competence.

MANOVA results

Logarithmic transformations of mean variable scores were used to reduce skewness and number of outliers, and improve normality, linearity, and homoscedasticity of residuals. After correction, data distribution substantially improved.

MANOVA results by gender and age were not significant: gender, Wilks' $\lambda = 0.91$, $F(7, 79) = 1.16$, $p = 0.336$, $\eta^2 = 0.09$, power = 0.47; age, Wilks' $\lambda = 0.91$, $F(7, 79) = 1.13$, $p = 0.351$, $\eta^2 = 0.09$, power = 0.46. Conversely, significant results were found by sport, Wilks' $\lambda = 0.79$, $F(7, 79) = 2.98$, $p = 0.008$, $\eta^2 = 0.21$, power = 0.91. Follow-up univariate analysis ($p < 0.05$) showed that basketball players reported higher scores than volleyball players on perceived performance

Table 1 Descriptive statistics, Pearson product-moment correlation, and alpha coefficients

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Mastery climate	4.28	0.54	(0.70)					
2. Performance climate	2.10	0.73	−0.21	(0.70)				
3. Emotional/physical exhaustion	1.73	0.69	−0.37**	0.24*	(0.81)			
4. Reduced sense of accomplishment	2.27	0.73	−0.42**	0.25*	0.27*	(0.72)		
5. Sport devaluation	1.55	0.74	−0.47**	0.31**	0.49**	0.54**	(0.77)	
6. Resilience	3.58	0.58	0.39**	0.07	−0.19	−0.48**	−0.43**	(0.78)
7. Perceived competence	7.75	1.58	0.32**	0.02	−0.21	−0.49**	−0.40**	0.45**

Alpha coefficients are presented in brackets on the diagonal

* $p < 0.05$, ** $p < 0.01$

Table 2 Hierarchical regression analysis results of resilience, perceived competence, and perceived mastery climate as predictors of reduced sense of accomplishment and sport devaluation

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	R^2	Unique R^2
Reduced sense of accomplishment						
Step 1					0.00	0.00
Sport	0.00	0.03	0.01	0.07		
Step 2					0.32	0.32
Resilience	0.33	0.14	0.27	2.40*		
Competence	0.24	0.08	0.30	2.86**		
Step 3					0.36	0.03
Mastery climate	0.22	0.11	0.20	2.03*		
Sport devaluation						
Step 1					0.07	0.07
Sport	−0.10	0.03	−0.27	2.85*		
Step 2					0.24	0.18
Resilience	0.42	0.17	0.28	2.43*		
Competence	0.04	0.11	0.05	0.42		
Step 3					0.30	0.06
Mastery climate	0.36	0.14	0.27	2.65**		

* $p < 0.05$, ** $p < 0.01$

climate ($M = 2.25$, $SD = 0.75$ vs. $M = 1.81$, $SD = 0.60$), emotional/physical exhaustion ($M = 1.85$, $SD = 0.76$ vs. $M = 1.5$, $SD = 0.47$), and sport devaluation ($M = 1.68$, $SD = 0.81$ vs. $M = 1.30$, $SD = 0.52$).

Regression analysis results

Analysis was conducted on mean variable scores logarithmically transformed. Hierarchic regression was used to determine whether perceived motivational climate variable improved prediction of burnout beyond that afforded by resilience and perceived competence variables. To this purpose, sport was dummy-coded and included as a

covariate in step 1, because of the significant differences between basketball and volleyball players found in the MANOVA. Perceived competence and resilience scores were entered as independent variables in step 2 of the model, while perceived mastery climate was entered in step 3 to predict reduced sense of accomplishment (first analysis) and sport devaluation (second analysis). Regression analysis to predict emotional/physical exhaustion was not performed because scores were not related significantly to resilience and perceived competence scores. Furthermore, perceived performance climate was excluded from regression because scores did not correlate significantly with resilience and perceived competence scores (see Table 1).

Regression results are displayed in Table 2. Reduced sense of accomplishment was predicted by both resilience and perceived competence. Addition of perceived mastery climate to the equation improved significantly the amount of variance accounted for. Sport devaluation was predicted by resilience and perceived mastery climate.

Discussion

The main findings of this study suggest that a perceived mastery (task-involving) climate created by coaches may play a protective effect against burnout in youngsters, whereas a perceived performance (ego-involving) climate may lead to burnout. Notably, resilience and perceived competence were found to moderate the effects of the motivational context towards burnout symptoms. These results are important given the limited research examining the relationship among perceived motivational climate, resilience, perceived competence, and burnout in young athletes.

In particular, regression analysis results showed perceived mastery climate to significantly contribute to the amount of the variability in two burnout variables (i.e., reduced sense of accomplishment and sport devaluation) beyond the variability accounted for by resilience and/or perceived competence. The two latter personal variables

were shown to moderate the effects of the motivational context towards burnout variables. Taken together, correlation and regression analyses provide evidence for the hypothesized protective effects of mastery climate, resilience, and perceived competence against burnout symptoms.

In accordance with the hypothesis expressed by other researchers [10], findings of our investigation suggest resilience to be a protective factor against burnout of young athletes. Resilience may reduce perceptions of burnout symptoms on those youngsters who perceive sport demands as excessive and experience high levels of stress. The significant positive correlation between perceived competence and resilience reinforce the view that successful experiences in sport promote feelings of competence, which may enhance resilience in young athletes. Regarding perceived competence, previous studies [30] noted that a mastery-involving climate, with an emphasis placed on improvement and working together (an essential aspect in team sports), enhances athletes' sense of self-determination and competence, both critical factors in motivating athletes to continue their sport involvement.

In addition to the main findings, significant differences were shown by sport: Basketball players reported higher scores than volleyball players on perceived performance climate and all the burnout dimensions. These differences may rely on sport characteristics. Basketball, indeed, is a contact sport in which legitimate physical contrasts and assertive behaviours occurring during the game are not only permitted, but also functional for the play. Of course, assertive behaviours are clearly constrained within the basketball rules and accepted when executed within the boundaries of the norms. Similarly, to other team contact sports [31], physical contrasts in basketball are encouraged by coaches and teammates. While struggling to win, coaches often incite their players to overcome physically the opponents in competition and even teammates during practice. The coaches' pressure of outperforming others at all costs typifies a performance climate, which most likely leads to high levels of burnout. Previous studies [32] also found that a performance climate emerged as a negative predictor of ill-being physical symptoms, such as the emotional/physical exhaustion dimension of burnout and other reported physical symptoms. Placing too much importance to interpersonal comparison and competition may thwart feelings of success, make athletes more aware of their inadequacy and limitations and, ultimately, engender frustration. Notably, a comparison of mean scores in the whole sample showed that participants, in general, perceived a higher level of mastery motivational climate than performance climate. This finding is consistent with earlier motivational research in youngsters [17, 33], and

highlight a commendable propensity of coaches to establish a mastery-involving climate in youth sport.

Although our results shed light on the multifaceted phenomenon of burnout in youth sport, a limitation lies in the correlational nature of the study in which the relationship among variables cannot indicate causal links. Experimental or longitudinal designs would provide greater insight about causality. Notwithstanding this limitation, findings are important as they provide information that may guide the development of effective interventions. The relationship between motivational climate and youth athlete burnout considered in the present work are of particular relevance to coaches and practitioners who are interested in preventing burnout. From an applied perspective, our study can provide a rationale for the development of coach-focused interventions. Coaches should be cognizant about the motivational climate they create and do their best in the attempt to promote a mastery-involving climate. A mastery-involving climate, indeed, tends to promote adaptive cognitions, emotions, well-being, satisfaction, motivation, task perseverance, and interest in sport [for a review, see 34]. When young athletes experience physical, emotional and psychological well-being, most likely they will persist in their participation and will benefit from long-term involvement in sport. A comprehensive analysis of motivational processes relevant to sport should provide insight in regard to potentially positive or negative health outcomes associated with youth sport participation. Coaches can trigger adaptive or maladaptive motivational patterns, and therefore, foster pleasant sport participation or, conversely, create the conditions for burnout. Achievement goal theory represents a sound framework to investigate the potential implications of situational factors on well-being of athletes and on burnout risk.

Conflict of interest Francesca Vitali, Laura Bortoli, Luciano Bertinato, Claudio Robazza, and Federico Schena declare they have no conflict of interest.

Human and Animal Rights All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5).

Informed consent Additional informed consent was obtained from all patients for which identifying information is included in this article.

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