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A COMPARATIVE ANALYSIS OF STATE ANXIETY AND COPING IN SPRINT AND MIDDLE- AND LONG-DISTANCE RUNNERS

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Abstract

Competitive anxiety and coping with competitive stress determine successful athletic performance in important ways. The first goal of this study was to investigate the intensity and potential differences in state anxiety (somatic and cognitive) and self-confidence between sprinters and middle- and long-distance runners, as well as to compare their use of coping strategies and/or coping dimensions. The second goal was to define which coping strategies runners use most frequently in general. The third aim was to examine if there is a relationship between competitive anxiety and coping dimensions in runners. A sample of 52 runners, 44.2% sprinters and 55.8% long-distance runners, (M_{age} = 24.25; $M_{sp.exp}$.= 9.78) completed the SCAI-2 and CICS. Compared to middle- and long-distance runners, sprinters scored higher on somatic and cognitive anxiety and lower on self-confidence. In total, runners most frequently use task-oriented coping strategies. There are no differences between sprinters and middle- and long-distance runners in coping dimensions and strategies except in mental distraction, which is more frequently used by middle- and long-distance runners. Task-oriented coping was positively related to self-confidence and negatively to cognitive anxiety. Disengagement-oriented coping is positively related to both somatic and cognitive anxiety and negatively to self-confidence. The study results highlight the possible directions for further research and provide a basis for several practical recommendations.

Key words: STATE ANXIETY / COPING STRATEGIES / COPING DIMENSIONS / SPRINTERS / MIDLE AND DISTANCE RUNNERS

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INTRODUCTION

Athletic competitions have become highly demanding and potentially stressful for most athletes, which is especially pronounced in professional and elite sport. The highest levels of performance are an immanent characteristic of athletic competitions. Competitive stress can be defined as an ongoing transaction between an individual and the demands of the environment which is directly related to competitive performance (Fletcher, Hanton, & Mellalieu, 2006, p.7). Both before and during the competition, when performance of the acquired motor skills is being evaluated, athletes are exposed to different stressors of varying intensity (Kimball & Freysinger, 2003). Athletes may react with a wide spectrum of emotions that can impair their performance. A large number of studies investigated the relationship between competition stressors and athletes' cognitions, emotions, and coping strategies (Abedalhafiz, Altahayneh, & Al-Haliq, 2010).

Anxious thoughts and feelings surrounding competitive events are usually designated as competitive anxiety (Martens, Vealey, & Burton, 1990; Mellalieu, Hanton, & Fletcher, 2006). Since competition stressors are anxiety-provoking factors (Ford, Ildefonso, Jones, & Arvinen-Barrow, 2017), it is not surprising that over four decades sports scientists were particularly interested in studying various theoretical and practical issues of anxiety (Jones & Hanton, 1996); for example, effects of anxiety as disposition "trait anxiety" and situational anxiety or "state anxiety", antecedents and consequences of competitive anxiety in different sport settings, etc. The Multidimensional Anxiety Theory developed by Martens and collaborators (Martens, Burton, Vealey, Bump, & Smith, 1990) is widely used in sport psychology. This theoretical model suggests that competitive anxiety is a multidimensional construct and it consists of two separate anxiety subcomponents: cognitive anxiety (worry and negative thoughts) and somatic anxiety (increasing heart rate, sweating, tight muscles, butterflies in the stomach, etc.). The third component of this model is self-confidence (positive expectations of success), which is not a component of anxiety, but its deficiency may be a signal that athletes are suffering from cognitive anxiety.

According to Martens' theory, these components affect athletic performance differently: cognitive anxiety and performance are in a negative linear relationship; somatic anxiety is in a curvilinear or inverted-U relationship with performance (e.g. an increase in somatic anxiety to a certain level will have a positive effect upon performance, but too low and too high levels have detrimental effects on performance); self-confidence is linearly positively related to performance. In sum, the relationship between anxiety and performance is complex and evidence from numerous empirical studies is mixed. On one hand, there is an abundance of empirical evidence that high anxiety has the potential to impair competition performance (Kleine, 1990; Woodman & Hardy, 2003), but on the other, there are a lot of studies that show anxiety has the potential to improve competitive performance (Hanin, 2007). It should not be neglected that there are large inter-and intra- individual differences in the optimal intensity of anxiety (i.e. performance-facilitating intensity). If the intensity is within the athletes' own optimal range, they will perceive as facilitative for performance (Swain & Jones, 1996). Additionally, studies (Hanin, 2010) suggest that many athletes perform well at different levels of anxiety (in the range from low to high). Authors of two meta-analyses (Craft, Magyar, Becker, & Feltz, 2003; Woodman & Hardy, 2003) reported that the anxiety-performance relationship is weak, that it depends on numerous moderating factors (such as gender, competitive level, type of sport, sample characteristics, time of testing, etc.) and that self-confidence is better in predicting performance than anxiety measures.

The study by Craft and colleagues (Craft et al., 2003) indicates that anxiety is more important for performance in individual vs team sports and "open" compared to "closed" skills sports. These findings point that certain structural attributes of the game potentially moderate the directional interpretation of anxiety (whether it is perceived as positive or negative) (Mellalieu et al., 2004) and consequently determine the anxiety-performance relationship.

The studies of differences in state anxiety between sprinters and long-distance runners are limited. The results of several previous studies are inconsistent. One of the three studies shows that sprinters have higher anxiety when compared to long-distance runners (Kar, 2013). In contrast, two other studies showed there are no significant differences between sprint and endurance runners neither in somatic nor cognitive state anxiety (Khodayari, Saiiari, & Dehghani, 2011; Singh & Deol, 2018).

Coping with competitive stress and anxiety is an essential factor for athletes' successful self-regulation (Hanin, 2000), successful competition performance (Anshel, Sutarso, & Juvenville, 2009; Nicholls & Polman, 2007), as well as for enjoyment in sport (Nicholls & Polman, 2007). Many studies investigated which type of coping athletes use to manage the stressful demands of competition in different sport settings, as well as the antecedents and consequences of coping strategies they chose to apply (Gaudreau & Blondin, 2002). Empirical studies on coping in the field of sport psychology are predominantly based on Lazarus and Folkman's transactional model of stress and Lazarus's cognitive-motivational-relational framework (Crocker, Tamminen, & Gaudreau, 2015; Nicholls & Polman, 2007). According to Lazarus and Folkman (Lazarus & Folkman, 1984, p. 141), coping is defined as "…constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person". Two types of cognitive appraisals can be distinguished in this approach (Lazarus, 2000). Firstly, a person cognitively evaluates the significance of an event for personal well-being (primary appraisal). If the person evaluates a situation or an event as stressful, then s/he will proceed to evaluate their coping capacities – what may be done to deal with and to take control over the stressor (secondary appraisal). Coping can be conceptualized either as a disposition that underlines an athlete's usual way of overcoming competitive stress or as a situational response to the specific stressor (Hurst, et al., 2011). A systematic review of the literature in sport psychology revealed that athletes use a multitude of different coping strategies and that the selection of a particular strategy is a response to the cognitive appraisals of the threatening situation (Kim & Duda, 2003).

There are various hierarchical classifications of coping at the micro and macro levels in the coping literature. These classifications are made by grouping similar cognitive or behavioral actions into coping strategies which can be grouped further into broader, second-order dimensions (Crocker et al., 2015; Hurst et al., 2011). For example, coping strategies can be classified into problem-focused coping strategies, emotion-focused coping strategies, and avoidance coping strategies (Nicholls & Polman, 2007); another example of a second-order classification is differentiating between approach strategies and avoidance strategies (Roth & Cohen, 1986); the third classification distinguishes between task-oriented coping, distraction-oriented coping and disengagement-oriented coping and this is the most frequently used classification in sport psychology. (Gaudreau & Blondin, 2004). However, coping researchers do not agree whether it is justified to classify coping strategies into broader dimensions. According to some authors (e.g. Compas, et al., 2001), such classifications can obscure the complexity and diversity of coping strategies, while according to others (Nicholls & Polman, 2007), such classifications are useful because they provide a comprehensive framework for understanding coping in competitive situations.

Studying coping strategies most frequently used by runners, and comparing coping strategies between different running disciplines has not been in the focus of previous studies. Moreover, comparing the results of coping studies is complex because different classifications of coping and different instruments for assessing coping were used in different studies. A study conducted on a sample of cross-country runners showed that they most frequently use problem-focused coping strategies (Nicholls et al, 2009). Additionally, a study showed that long-distance runners have better coping skills compared to sprinters (Gedefaw & Suleiman, 2016).

Several studies (Dias, et al., 2012) report that some psychological variables, like emotions and self-confidence, can be influenced by coping strategies. Moreover, state anxiety is directly related to coping, which is a frequently studied topic in the domain of sport (Jones, 2003). Research findings suggest that athletes with different anxiety levels, especially cognitive anxiety, cope with stressors differently. The higher the anxiety

intensity in athletes, the more they use avoidance and emotion-focused coping strategies and less the problem-focused coping strategies (Dias, et al., 2012).

The physical and related psychological demands of a running discipline vary with the running distance (Dosil, 2006). Sprint disciplines (100m and 200m) and prolonged sprint (400m) require an extreme level of concertation and very high arousal levels for a fast start, for generating the maximum performance in a short time interval, and also for the ability to endure and overcome the maximal physical fatigue. For long-distance disciplines, in addition to the physical form, tactics becomes a significant factor. Long-distance runners often achieve victory in the last meters. Therefore, the management of physical limits, proper selection of information, and proper focus throughout the race, as well as confidence in the victory of the opponent are significant factors of winning.

The main goal of this study was to investigate whether the intensity of state anxiety (somatic and cognitive) and self-confidence, as well as frequency of coping strategies and/or coping dimensions, differ significantly between sprinters and long-distance runners. The second goal was to investigate what is the most frequent coping strategy that runners use and if there are differences in coping dimensions use between sprinters and long-distance runners. The third goal of this study was to examine if anxiety dimensions and coping dimensions are related in the population of runners.

METHOD

Sample

The sample consisted of 52 runners, 44.2% of which compete in sprint disciplines (n = 23) and 55.8% long-distance disciplines (n = 29). Athletes of both genders were included in the sample and the percentage of men (61.5%) is somewhat higher than the percentage of women (38.5%). The runners were 15-45 years old (M = 24.25 SD = 7.49), and had 1-35 years of experience in sport (M = 9.78, SD = 6.35).

Instruments

The Competitive State Anxiety Inventory-2– CSAI-2 developed by Martens and collaborators (Martens, et al., 1990) was used to measure the intensity of runners' pre-performance cognitive anxiety ("I am worried about performing well."), somatic anxiety ("I feel tense in my stomach") and self-confidence ("I'm confident I can meet this challenge"). The scale consists of 27 items (with nine items in each subscale) accompanied with a four-point Likert type scale (from 1 "not at all" to 4 "very much so"). The score range for each subscale is 9 – low score to 36 – high score.

The Coping Inventory for Competitive Sports (CICS), developed by state (Gaudreau & Blondin, 2002) was used to measure coping strategies – cognitive and behavioural strategies athletes use before and during the competition to deal with stressful situation. The CICS is a self-report instrument with 39 items accompanied with a five-point Likert type scale (from 1 "not at all" to 5 "very strongly"). Items are grouped into ten coping strategies (mental imagery, effort expenditure, thought control, relaxation, logical analysis, seeking support, distancing, mental distraction, disengagement and venting of unpleasant emotions). Strategies are grouped in three second-order dimensions: Task-oriented coping (strategies used to manage the internal and external requirements of a competitive situation), Distraction-oriented coping (strategies used to direct one's current attention on things unrelated to sport competition) and Disengagement-oriented coping (strategies used to disengage oneself from the process that generally lead to goal attainment).

Additionally, participants provided socio-demographic information as well as sport-related information (discipline, experience).

Procedure

The sample consisted of active competitors recruited conveniently. The questionnaires were administered in paper form and completed in controlled settings. After completing socio-demographical and sports questions, participants first completed the CSAI-2, and then the CICS. As the focus of this study was to determine the possible differences in psychological characteristics between sprinters and middle-and-long

distance runners, participants were instructed to recall and focus on their thoughts and feelings before their most important competitions during the season. This procedure of administration of CSAI-2 had been used in previous studies (Jones & Uphill, 2004). The study lasted 10 minutes on average. The participants took part in the study voluntarily. They were informed on the purpose of the study and data storage and provided their informed consent.

Statistical analysis

Descriptive statistics (*M*, *SD*) were applied to summarize the data. Multiple MANOVAs followed by univariate ANOVAs and discriminant analyses were used to test for differences between sprinters and middle- and long-distance runners on somatic anxiety, cognitive anxiety, and self-confidence, as well as on coping dimensions and strategies. Repeated measures ANOVA was used to test the differences in coping dimensions, followed by three dependent samples t-tests. Pearson correlation coefficient was used to measure the intensity and direction of the relationship between anxiety and coping.

RESULTS

MANOVA was used to test the differences between sprinters and long-distance runners in somatic anxiety, cognitive anxiety, and self-confidence. The results indicate there are significant differences between disciplines in anxiety subscales composite, There was a significant main effect of running discipline, $F_{(3, 48)}$ =3.55, $p < .05$; Wilk's $\Lambda = 0.82$, partial $\eta 2 = .18$. Follow-up univariate ANOVAs yielded significant effects of discipline on all three dependent variables (Table 1): sprinters reported a higher level of somatic anxiety, cognitive anxiety, and lower level of self-confidence. Additionally, discriminant analysis indicates that cognitive anxiety score (r_{ca} =.946) contributes to group differentiation the most, followed by somatic anxiety (r_{sa} = .746), and then self-confidence (r_{sc} = -.661), and that 71.2% of the runners could be correctly classified as sprinters or middle-long distance based on their anxiety composite score.

Table 1. Somatic anxiety, cognitive anxiety and self-confidence – descriptives and differences between sprinters and middle- and long-distance runners

	All	**Sprinters**	**Middle/Long-distance**	*F*	*p*	η^2
	M ± *SD*	*M* ± *SD*	*M* ± *SD*			
Somatic anxiety	17.53 ± 5.12	19.42 ± 4.73	16.03 ± 4.99	6.18	.016	.110
Cognitive anxiety	17.85 ±6.58	20.83 ± 6.71	15.48 ± 5.52	9.93	.003	.166
Self-confidence	27.28 ± 5.02	25.62 ± 5.18	28.60 ± 5.20	4.85	.032	.088

Descriptive measures for coping dimensions and coping strategies are presented in Table 2. MANOVA was used to test if there are differences between sprinters and long-distance runners in frequency of use of coping strategies grouped in coping dimensions. There were no significant effects of discipline, $F_{(3, 50)}$ =1.24, $p < .05$; *Wilk's* $\Lambda = 0.928$, indicating that there are no differences between sprinters and middle- and long-distance runners on the linear composite of coping dimensions; additionally, univariate ANOVAs indicate these two groups do not differ in any of the coping dimensions analyzed separately (task-oriented coping $F_{(1, 50)} = .359$, $p > .05$; distraction oriented coping $F_{(1, 50)} = 2.534$, $p > .05$; disengagement oriented coping $F_{(1, 50)} = .206$, $p > .05$).

To test whether there are significant effects of running discipline on differences in the use of specific coping strategies within dimensions, three separate MANOVAs were used. In task-oriented coping strategies (mental imagery, effort expenditure, thought control, seeking support, relaxation, logical analysis) there are significant effects of running discipline, $F_{(6, 45)}$ =3.03, $p < .05$; Wilk's $\Lambda = 0.71$, $\eta 2 = .29$. Univariate ANOVAs

indicate that when each task-oriented coping strategy is analyzed separately, there are no significant differences in any of the strategies, which points that sprinters and middle- and long-distance runners are different in the combination of strategies they use. Further discriminant analysis indicates that relaxation (r =.438) contributes most to the group differentiation, then seeking support (r =.373) and mental imagery (-.266) and that 71.2% of the runners could correctly be classified as sprinters or middle-long distance based on these task-oriented coping scores. For distraction-oriented coping strategies the difference between sprinters and middle- and long-distance runners is not significant, $F_{(2, 49)}$ =2.30, p > .05; Wilk's Λ = 0.91; univariate ANOVAs indicate disciplines are different in mental distraction scores, $F_{(1, 50)}$ = 4.57, p < .05, η2 = .08, but not in distancing scores, $F_{(1, 50)}$ = .10, p > .05. For disengagement-oriented strategies, there were no significant differences between disciplines neither in multivariate, $F_{(2, 49)}$ =1.49, p > .05; Wilk's Λ = 0.94, nor in univariate analyses (venting $F_{(1, 50)}$ = .33, p > .05, resignation $F_{(1, 50)}$ = 2.05, p > .05).

Table 2. Descriptive statistic for coping dimensions and coping strategies

	All	**Sprinters**	**Middle/Long-distance**
	M ± *SD*	*M* ± *SD*	*M* ± *SD*
Task-oriented coping	3.83 ± .45	3.79 ± 0.41	3.87 ± .48
Mental imagery	3.99 ± .66	4.11 ± .61	3.89 ± .69
Effort expenditure	4.54 ± .48	4.56 ± .52	4.53 ± .45
Thought control	3.75 ± .69	3.76 ± .74	3.73 ± .66
Seeking support	3.38 ± .59	3.23 ± .57	3.50 ± .59
Relaxation	3.71 ± .71	3.50 ± .66	3.88 ± .71
Logical analysis	3.63 ± .76	3.59 ± .75	3.67 ± .78
Distraction-oriented coping	2.66 ± .67	2.49 ± .60	2.79 ± .71
Distancing	2.87 ± .75	2.84 ± .69	2.90 ± ,81
Mental distraction	2.44 ± .90	2.15 ± .90	2.67 ± .85
Disengagement-oriented coping	2.21 ± .58	2.26 ± .69	2.18 ± .48
Venting of unpleasant emotions	2.63 ± .78	2.57 ± .78	2.69 ± .78
Disengagement/resignation	1.78 ± .69	1.95 ± .79	1.67 ± .58

Further, we analyzed which coping strategies grouped into dimensions are used most frequently by runners regardless of their discipline with repeated measures ANOVA. Results indicated there are significant differences in frequency of use of task-, distraction- and disengagement-oriented strategies in runners, $F_{(2, 102)}$ = 121.14, p < .05, η2 = .70. Three paired samples t-tests were used for further comparison. The first t-test indicated there was a significant difference between task-oriented coping, M = 3.83, SD = .66, and distraction-oriented coping, M = 2.66, SD = .67; t(51) = 10.71, p < .01. The second paired samples t-test indicated that there was a significant difference between task-oriented coping, M = 3.83, SD = .66, and disengagement-oriented coping, M = 2.21, SD = .69; t(51) = 14.64, p < .01. The third paired samples t-test indicated that there was a significant difference between distraction-oriented coping, M = 2.66, SD = .67, and disengagement-oriented coping, M = 2.21, SD = .69; t(51) = 4.46, p < .01. In summary, runners most frequently use task-oriented coping strategies and disengagement-oriented strategies the least.

Correlations between anxiety and coping dimensions are presented in Table 3. Correlations between anxiety subscales are moderate to high, with cognitive and somatic anxiety being positively related and both expectedly negatively related to self-confidence. On the other hand, in coping dimensions, there is a low positive correlation between distraction- and disengagement-oriented coping, but other correlations are not significant.

Regarding the relationship between anxiety and coping in runners, task-oriented coping was moderately positively related to self-confidence and negatively albeit weakly with cognitive anxiety. Disengagement-oriented coping was moderately related to cognitive anxiety (positively) and self-confidence (negatively), as well as to somatic anxiety (weak positive relationship). In other words, more anxious and less confident runners (regardless of the discipline) use disengagement-oriented coping strategies more frequently, while more confident and less cognitively anxious use the task-oriented coping strategies. Distraction-oriented coping strategies were not related to anxiety measures in our sample of runners. Task-oriented coping dimension is in a positive moderate correlation with self-confidence and a negative, but weak correlation with cognitive anxiety. Disengagement-oriented coping dimension is in a weak positive correlation with Somatic anxiety, a moderate positive correlation with cognitive anxiety, and a moderate negative correlation with self-confidence.

Table 3. Correlations between anxiety and coping dimensions

	SA	CA	SC	TASK	DISTR	DISEN
Somatic anxiety	1					
Cognitive anxiety	.63**	1				
Self-confidence	-.74**	-.76**	1			
Task oriented coping	-0.25	**-.33***	**.43****	1		
Distraction oriented coping	-0.02	0.16	-0.07	0.04	1	
Disengagement oriented coping	**.29***	**.45****	**-.47****	-0.24	.35*	1

Note: SA – Somatic anxiety; CA – Cognitive anxiety; SC – Self-confidence; TASK – Task-oriented coping; DISTR – Distraction-oriented coping; DISEN – Disengagement-oriented coping; * $p < .05$, ** $p < .01$.

DISCUSSION

It is well-known that competitive performance is influenced by numerous factors in a complex interdependent relationship. Since every competitive situation can be stressful and can induce feelings of anxiety in athletes, coping with competitive stress and anxiety is very important for competitive performance, as well as for the mental health of athletes.

The first goal of this study was to compare the intensity of somatic anxiety, cognitive anxiety, and self-confidence, as well as the frequency of use of various coping strategies between sprinters and long-distance runners. In our study, sprinters reported a higher level of somatic and cognitive anxiety and lower level of self-confidence than long-distance runners, with cognitive anxiety, i.e. performance-related worry and negative thoughts as the most important differentiating measure. These results are in line with some previous studies of anxiety in runners (Kar, 2013) but not all (Khodayari, et al., 2011, Singh & Deol, 2018). A possible explanation for higher intensity of anxiety in sprinters can be derived from Jones' claim (Jones, 2003) that high arousal goes hand in hand with certain emotions, especially with anxiety. Since sprinters have to achieve and maintain an extreme level of arousal during the race, these results are not surprising. The demands of sprint and long-distance disciplines are fundamentally different (Dosil, 2006). Long distances involve more complex tactics, such as efficacy in managing physical resources during prolonged periods as well as maintaining confidence that achieving victory and beating the opponent at the end of the race is possible to do. These characteristics can be seen as multiple pathways for winning. Consequently, it could be hypothesized that middle- and long-distance runners are less anxious and more self-confident because they perceive higher levels of control over the outcome

and multiple opportunities to influence it. Additionally, higher levels of anxiety can also be related to performance intensity, as this intensity is maximal in sprinters almost always, which often implies fear of injury.

The next set of results relates to the question if there are there any differences in coping between these two groups of runners. Bearing in mind that there is no agreement if it is more useful to analyze single coping strategies or higher-order dimensions of coping (Compas et al., 2001), we compared the two groups of runners at both micro and macro level. Results of this study indicated that sprinters and middle- and long-distance runners use three higher-order coping dimensions – task-oriented coping, distraction-oriented coping, and disengagement-oriented coping – with equal frequency. In essence, this means that these two groups of athletes, despite the different demands of their competition disciplines, cope with the competitive stressors similarly. A comparison of sprinters and middle- and long-distance runners within each coping dimension revealed that there are differences only in task-oriented coping strategies, with middle- and long-distance runners can be described as more prone to relaxation and support-seeking strategies and at the same time less prone to mental imagery. There are no significant differences in distraction- and disengagement-oriented strategies, and the only significant univariate difference between sprinters and middle- and long-distance runners is the one on mental distraction, which is more frequently used by the latter. In other words, long-distance runners, as their race is inherently longer, have more time to think and more possibilities to divert their focus both to relevant and irrelevant points. Consequently, their full attention cannot be completely devoted to the task they are performing at the given moment all the time and can become mentally "detached" from the task. These results contradict the evidence in the sport psychology literature to a certain extent (Kim & Duda, 2003), stating that athletes choose a particular coping strategy in accordance with the appraisals of the stressors. Further, we should mention that it could be expected that sprinters and long-distance runners apply different coping strategies because they experience different levels of competitive anxiety. This hypothesis is based on the results of Dias and collaborators (Dias, et al., 2012), that athletes who score higher on anxiety measures, especially cognitive anxiety, use emotion-focused coping more and problem-focused coping less often. Despite the reported differences in anxiety, sprinters and middle- and long-distance runners choose various coping strategies with similar frequency.

The second goal of this study was to determine which coping dimensions are most frequently used by runners. Results indicated that the task-oriented coping (strategies aimed to manage the demands of the competition) was the most frequently used group of strategies, followed by distraction-oriented coping (strategies aimed to refocus attention to the factors that are not related to the competition), and then disengagement-oriented coping (strategies aimed to separate runners from the stressors and the related emotions). This finding is in accordance with a previous study conducted on a sample of cross-country runners (Nicholls, et al., 2009) which used a somewhat different classification of coping strategies.

The third purpose of this study was to investigate if there is an association between anxiety dimensions and coping dimensions. Correlational analysis indicated that anxiety and coping are weakly to moderately related. Concretely, runners who are more self-confident and less cognitively anxious tend to use task-oriented coping, whereas runners who experience higher levels of somatic and cognitive anxiety tend to use disengagement-oriented coping. These results support the previously discussed hypothesis by Dias (Dias, et al., 2012), that the more anxiety athletes experience, the more emotion-focused and the less problem-focused coping they would use.

CONCLUSION

This study is one of the few aimed to compare the intensity of state anxiety and frequency of coping strategies on a situational level, between sprinters and middle- and long-distance runners. In summary, the findings of this study highlight some differences in precompetitive anxiety and self-confidence intensity between the two groups of runners and suggest that they cope with competitive stressors in a similar fashion. These

findings can be used to provide some recommendations for sport psychology practice. Firstly, it should be taken into account that optimal anxiety level in sprinters and middle- and long-distance runners could be different; second, and perhaps more important, special attention should be devoted to increasing self-confidence in sprinters; third, runners who experience higher levels of cognitive and somatic anxiety should be encouraged and directed to use task-oriented coping strategies more frequently

The results of this study have several limitations. The first one is methodological and it relates to a relatively small number of participants which does not allow for more complex statistical techniques to be used. Future studies should investigate whether the relationship between anxiety and coping strategies is the same in both groups of runners, i.e. if anxious sprinters and anxious long-distance runners potentially use different coping strategies. Other potential limitations can be seen as directions for future studies reproducing and expanding the scope of this study. From a practical point of view, it would be useful to investigate and compare sprinters and long-distance runners in other aspects of competitive anxiety and coping, such as directional interpretation of anxiety (*negative* versus *positive*) and the perceived effectiveness of coping strategies.

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