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Pre-competitive emotions in team sports: Differences across gender and perceived importance and difficulty of the competition.

KEYWORDS:
Team sports. Gender differences. Perceptions. Self-confidence. Emotions.

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ABSTRACT

The purpose of the present study was to analyse precompetitive emotions in team sports, assessing differences between athletes from different genders, and with different perceptions regarding the importance and difficulty of the competition. Fifty-four athletes (n = 30 female, n = 24 male, M = 22.76 years, SD = 4.42) completed the Portuguese version of the Competitive State Anxiety Inventory–2, and an Inventory of Emotions in Sport. Results showed that participants experienced positive emotions (e.g., hope, happiness) more intensely than negative emotions (e.g., guilt, shame). Additionally, significant positive correlations were found between the positive emotions and self-confidence. Finally, athletes who perceived the competition as more important and difficult reported significantly higher levels of hope and anxiety. These results lend support for further investigation into different positive and negative emotions in sport, as well as their interaction with individual and situational variables.

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Emoções pré-competitivas em desportos colectivos: Diferenças entre género, importância percebida e dificuldade da competição.

RESUMO

O presente estudo procurou analisar as emoções pré-competitivas em desportos colectivos, avaliando diferenças entre atletas de diferentes sexos e com diferentes percepções a respeito da importância e da dificuldade da competição. Cinquenta e quatro atletas (n = 30 do sexo feminino, n = 24 do sexo masculino, M = 22.76 anos, DP = 4.42) completaram a versão portuguesa do *Competitive State Anxiety Inventory*–2, e um Inventário de Emoções no Desporto. Os resultados revelaram que os participantes experimentaram as emoções positivas (por exemplo, esperança, felicidade) mais intensamente do que as emoções negativas (por exemplo, culpa, vergonha). Além disso, foram encontradas correlações positivas significativas entre as emoções positivas e a auto-confiança. Finalmente, os atletas que percebiam a competição como mais importante e difícil relataram níveis significativamente mais elevados de esperança e ansiedade. Estes resultados fornecem suporte para uma investigação mais aprofundada sobre diferentes emoções positivas e negativas no desporto, bem como sobre a sua interacção com variáveis individuais e situacionais.

PALAVRAS-CHAVE:

Desportos Colectivos. Diferenças de género. Percepções. Autoconfiança. Emoções.

INTRODUCTION

Anxiety is undeniably one of the most intensely investigated constructs in the field of sport psychology. Hence, it is not surprising that, over the years, considerable contributions have been made regarding the nature of this emotion and the role it plays on athletes' sport performance. Earlier models and theories (e.g., drive theory, inverted-U hypothesis) have been replaced by different theories (e.g., multidimensional anxiety theory, zones of optimal functioning), furthering our understanding of the anxiety-performance relationship [26]. Additionally, numerous studies have focused on the effects of anxiety on performance [e.g., 13, 15], investigating not only the intensity of competitive anxiety symptoms, but also other dimensions of the competitive anxiety construct (e.g., directional interpretation) [e.g., 46, 50].

However, despite the amount of research, at the present time there is consensus that anxiety alone is too narrow and clearly insufficient to account for the athletes' emotional reactions and explain sport performance and success. Accordingly, a growing number of researchers propose that precompetitive responses include a wide range of emotions rather than anxiety [e.g., 14, 16, 29, 38, 39]. In recent years much research effort has been spent on investigating the role of several positive and negative emotions on sport performance (e.g., anger, happiness, guilt, fear, shame, hope) [e.g., 2, 3, 46, 48, 63]. We have been witnessing, for example, the refinement, and sometimes even the "reformulation" of various conceptual models and explanatory hypotheses of the anxiety-performance relationship. These models' field of analysis has been expanded in order to address the role of other emotional reactions above and beyond anxiety. Several of them tried to explain the generation and development of emotional reactions [12]. Among these, the most popular are Hanin's individual zones of optimal functioning (IZOF) model [29], and Lazarus' cognitive-motivational-relational (CMR) theory of emotion [37, 38, 39].

The IZOF, previously known as the zone of optimal functioning (ZOF) hypothesis, was based upon the association of the intensity of pre-competition state anxiety to optimal sport performance [28]. While increasingly acknowledging the influence of positive and negative emotions, Hanin [29] proposed the extension of that notion into the IZOF, an ideographic approach to investigating the patterns, structure, and function of positive and negative emotional experiences of athletes [20]. Specifically, the IZOF-emotion model proposes five basic dimensions (form, content, intensity, time, and context) to describe individually optimal and dysfunctional structure and dynamics of performance related emotional experiences. The explanation of this dynamics is based on a detailed description of athletes' idiosyncratic subjective experiences [54].

Otherwise, Lazarus' [39] CMR theory presents a thorough description of the cognitive processes involved in specific emotions. Although it was not originally developed as a sports-specific individualized approach, Lazarus [38, 39] applied it to understanding emotions in this setting. Specifically, the author stated that emotions are the result of cognitive appraisals

(i.e., the cognitive interpretation) of events, stimulus and experiences [37]. These cognitive-evaluative reactions include primary appraisals (e.g., goal relevance, goal congruence, type of ego involvement), and secondary appraisals (i.e., options for coping, coping potential, and future expectations) and influence emotional responses. Then, together with emotions, they affect actual performance [38]. For instance, a threatening encounter that makes the person feel uneasy (anxious) will, at the same time, be connected with a strong effort to protect oneself from anticipated danger [37]. In this matter, Uphill and Jones [56] interviewed international athletes from various sports and found support for the association of cognitive appraisals with a variety of emotions, including anger, anxiety, guilt, happiness, pride, relief, sadness, and shame.

Additionally, it is worth mentioning that, more recently, Jones, Meijen, McCarthy, and Sheffield [34] proposed the theory of challenge and threat states in athletes (TCTSA). Alongside the theory of Lazarus, this theory outlines "*why* athletes may perceive an upcoming competition as either a challenge or threat, *how* they respond emotionally and physiologically when they do, and *how* challenge and threat states can influence performance (sic)" [34, p. 162]. According to the TCTSA, a challenge state is associated with high self-efficacy, high perception of control and a focus on approach goals, whereas a threat state is linked to low self-efficacy, low perceived control and a focus on avoidance goals. Moreover, while athletes in a challenging state will perceive their emotions as helpful for performance, those in a threating state will perceive their emotions as negative for performance. In any case, after the appraisal, the athlete will experience an emotional response [44].

As regards to the measurement of emotions in the sport context, and although there are samples of facial, autonomic, and brain-based measures within the literature, self-report measures dominate [44]. In this context, the majority of investigations conducted to examine the relationship between emotions and sport performance typically used single adjective checklists such as the Profile of Mood States (POMS; [45], or general measures of positive and negative affect, such as the Positive and Negative Affect Schedule (PANAS; [61]). However, the fact that two of the most used instruments to assess emotions in sport were not originally designed for this purpose may reflect some of the methodological limitations of the study of emotional experience in sport. According to Mellalieu et al. [46], psychometric scales taken from clinical settings generally are negatively biased and are not adapted to the specificities of other contexts. Ultimately, this may result in content and construct validity problems [25], since these instruments may not adequately capture the emotional spectrum that exists in sports [44].

On the other hand, instruments such has the PANAS, the POMS, or even The Affect Grid - a single-item questionnaire based on the circumplex model of emotion (see [36] for more information) - do not measure specific discrete emotions, such as happiness, anger, or pride, but rather moods or generic positive and negative affect. In fact, although, in sport psychology, the terms "emotion", "mood" and "affect" are often used interchangeably, they are relatively distinct concepts (see [7, 60]). Furthermore, although a dimensional approach - which groups emotions by valence or direction of motivated action [31] -, has been dominant in psychology for a long time, an approach centred on discrete categories of emotion has recently been attaining ascendance [39]. A discrete emotion is defined as an organized psychophysiological reaction encompassing a subjective experience, a facial expression, cognitive processing, and physiological changes, to ongoing relationships with the environment [43]. The study of discrete emotions in sport is important because they are thought to affect performance (objectively or subjectively) and they communicate crucial information to understand athletes (e.g., the importance of the event, perceived coping ability, action tendency) [13]. One of the few instruments that evaluate discrete emotions in sport is the Sport Emotion Questionnaire (SEQ; [33]). This questionnaire is a sport-specific measure of precompetitive emotion to assess anger, anxiety, dejection, excitement, and happiness. The SEQ has shown evidence of content and concurrent validity and is considered appropriate for use in sport settings [33]. In addition, it has been used successfully in retrospective situations [e.g., 2, 3, 11]. However, we agree with McCarthy [44] when he stated that many emotions remain in the margins of sport investigation. In our opinion, a better comprehension of the emotional experience in sport must contemplate several other emotions that are customary in sport contexts and, thus, may have a determinant role in athletes' sports performance.

Accordingly, based on the need to evaluate a broader spectrum of emotions in sport (as opposed to the assessment of affect, mood states, a few discrete emotions, or the exclusive emotion of anxiety), the purpose of the present study was to analyse other emotions rather than anxiety. The need for a theoretical rational prompted us to adopt the perspective of Lazarus [38] regarding some of the emotions that are likely to be important in competitive sports, namely anger, anxiety, shame, guilt, hope, relief, happiness, and pride. These emotions were assessed in an ecologically valid setting (i.e., a precompetitive situation), with athletes from team sports. Team sports constitute an appropriate environment to explore emotional responses, since those responses can play an important role in determining the groups' behavioural patterns [6] and may be significant for determining the success of groups [2]. Moreover, some authors referred that although emotions can be experienced in several competitive moments, researchers should consider the emotional states of athletes before the competition, since different negative emotions (e.g., anxiety) may negatively affect subsequent performance [48, 63].

A second purpose of this study was to investigate whether athletes from both genders differed in their emotional experiences. In this regard, several investigations have shown that male athletes generally report higher levels of anxiety that female athletes [e.g., 32, 35]. However, few studies have examined athletes' gender differences in relation to other emo-

tional states rather than anxiety; those who did have mainly focused in the broader construct of affect. In a study with 235 female and male athletes by Crocker and Graham [16], for example, males experienced higher levels of positive affect than women. Additionally, in non-sport settings, there is evidence that women consistently report more fear in threatening situations [9].

Finally, the present study compared the intensity of positive and negative emotions among athletes with high and low perceptions of the importance/ difficulty of the competition. Martens, Vealey, and Burton [42] have suggested a causal model in which the trait of competitive anxiety, perceived uncertainty, and perceived importance were the most significant variables affecting perception of threat, and, consequently, competitive anxiety responses. Several investigations found support for this model and recognized these variables as critical in anxiety reactions [see 40, 41, 51]. Moreover, Cerin Szabo, Hunt, e Williams [14] have suggested that when the athletes acknowledge the importance and difficulty of the competition they mobilize resources to cope with it. Nevertheless, to the best of our knowledge and at least in what pertains to the perceived importance of competition variable, no evidence exists regarding the relationship of this variable with other emotions besides anxiety.

METHOD

PARTICIPANTS

The present study was limited to athletes competing in team sports. Fifty-four athletes (30 female and 24 male), aged between 15 and 39 years old (M = 22.76, SD = 4.42), participated in this study. The sample comprised participants from handball (n = 8), field hockey, (n = 18), and volleyball (n = 28). All the participants competed at national level, either in the first (n = 40) or in the second division (n = 14) of their respective championships.

INSTRUMENTATION

Competitive State Anxiety Inventory–2_p (CSAI-2_p) [18]. The Portuguese version of the CSAI–2 [42] was used to measure competitive state anxiety. This scale is a multidimensional state-anxiety measure specific to sport, consisting of nine-item intensity subscales for cognitive anxiety, somatic anxiety, and self-confidence. Participants were required to rank their responses on a Likert scale ranging from 1 (*not at all*) to 4 (*very much so*). Scores range from 9 to 36. A confirmatory factor analysis was conducted to examine the factorial validity of the CSAI-2_p [53]. The results of this analysis revealed an acceptable fit of the data to a model composed of 22 of the original 27 items ($c^2(206) = 405.8$, $p < .05$; CFI = .92; RMSEA =.06; RMR = 04). CSAI-2_p comprised the three original subscales - cognitive anxiety (7 items), somatic anxiety (8 items) and self-confidence (7 items), all of which revealed high levels of internal consistency: Cronbach's $\alpha_{\text{cognitive anxiety}}$=.86; Cronbach's $\alpha_{\text{somatic anxiety}}$=.83; Cronbach's $\alpha_{\text{self-confidence}}$=.88. In the present investigation the coefficients of internal consistency were also markedly high: Cronbach's $\alpha_{\text{cognitive anxiety}}$=.86; Cronbach's $\alpha_{\text{somatic anxiety}}$=.91; Cronbach's $\alpha_{\text{self-confidence}}$=.93.

Inventory of Emotions in Sport (IES). This instrument is a single-item measure designed to assess precompetitive discrete emotions and was originally developed by Cruz [17]. IES is based on the adaptation of Lazarus' [38, 39] CMR theory of emotion to sport settings. Specifically, respondents are asked to rate, on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*), how intensely they are experiencing the emotions of anger, anxiety, shame, guilt, hope, relief, happiness and pride. The use of single-item measures has been encouraged by several authors asserting that they are appropriate and can substitute multiple-item measures in many cases [1]. Wanous, Reichers, and Hudy [59], for example, sustained that single-item measures can be used when situational constraints limit the use of scales or when the research question implies their use. Accordingly, in the present study, situational time constraints regarding the assessment of precompetitive emotions were taken into consideration in the preference for a single-item measure. As regards to the research question, because this investigation was exploratory exploring different positive and negative emotions in sport, single-item measures were deemed sufficient for satisfying the aims of the study [2].

Other measures. Participants were required to rate the importance and difficulty of the forthcoming competition on a 7-point scale ranging from 1 (*little importance*) to 7 (*high importance*), and 1 (*little difficulty*) to 7 (*high difficulty*), respectively. The battery of questionnaires also comprised a section for the collection of demographic data.

PROCEDURES

Consent to conduct the study was granted by a universities' scientific committee. Previous to the distribution of the questionnaires, the athletes were briefed about the purpose of the investigation, and they were informed about their right to withdraw and confidentiality was guaranteed. A multi-section questionnaire was then distributed approximately one-half hour prior to one competition. When completing the questionnaire, participants were instructed that there were no right or wrong answers, and were asked to work independently, answering all the questions as honestly as possible. The first author was present to answer any of the athletes' queries. Similar procedures were adopted for all the athletes.

DATA MANIPULATION AND ANALYSIS

The SPSS statistical package was used for all analysis. Since the data were not normally distributed, nonparametric tests were applied. First, a series of univariate Spearman correlational analysis were conducted to test the strength and direction of the relationship between all the variables involved in the present study. Additionally, in order to examine differences between groups of athletes in pre-competitive emotions we used the nonparametric Mann–Whitney test. As regards to specifically the comparison of athletes with different perceptions of importance/ difficulty of the competition, groups were determined by calculating a tercile split using scores derived from athletes' perceptions. The results of this calculation, using a composite measure of the 'perception of importance' and of the 'perception of difficulty' scores, showed that the participants in the first quartile (simultaneous 'low importance/ difficulty') scored between 3 and 5 in importance and 1 and 4 in difficulty, while the in the upper range scored 7 in importance and between 6 and 7 in difficulty. A total of 10 athletes comprised each group.

RESULTS

DESCRIPTIVE STATISTICS AND SPEARMAN CORRELATIONS

The descriptive statistics and Spearman correlations for all the psychological variables in this study are presented in Table 1. With respect to IES, the results showed that although the participants in the present study experienced both positive and negative emotions, hope and happiness were predominant (i.e., clearly above the midpoint), whereas guilt and shame were the less experienced emotions (i.e., clearly below the midpoint). Regarding CSAI-2_p, athletes reported higher levels of self-confidence than cognitive or somatic anxiety.

The analysis of the correlational coefficients revealed positive intercorrelations between two sets of variables. One set comprised negative emotions, namely anxiety, anger, guilt and shame (intercorrelations ranging from .31 to .73), and the other encompassed happiness, pride, hope, and self-confidence (intercorrelations ranging from .30 to .31). Moreover, there were significant negative correlations between self-confidence and all negative emotions (ranging from -.40 to -.65).

TABLE 1 – Summary of descriptive statistics and intercorrelations for scores on the CSAI - 2_p, and IES (N = 54)

VARIABLE	M	SD	1	2	3	4	5	6	7	8	9	10
1. Somatic anxiety	13.53	4.99	-									
2. Cognitive anxiety	15.74	4.90	.73***	-								
3. Self-confidence	19.18	4.82	-.65***	-.57***	-							
4. Happiness	4.45	1.26	-.13	-.06	.31*	-						
5. Pride	4.26	1.51	-.11	.05	.20	.31*	-					
6. Anxiety	3.52	1.76	.55***	.48***	-.25	.13	.11	-				
7. Anger	2.09	1.73	.31*	.39**	-.40**	-.25	-.14	.19	-			
8. Hope	5.30	1.67	.09	.03	.13	.30*	.10	.35**	.03	-		
9. Guilt	1.67	1.20	.38**	.49***	-.43***	-.21	-.05	.01	.62***	-.09	-	
10. Relief	2.31	1.45	.16	.14	-.19	.06	-.07	.13	.16	.03	.14	-
11. Shame	1.61	1.35	.37**	.53***	-.48***	-.25	-.13	.24	.64***	.11	.68***	.11

* p< .05; ** p< .01; *** p< .001

DIFFERENCES ACROSS GENDER AND PERCEIVED IMPORTANCE/ DIFFICULTY OF THE COMPETITION

The comparison of male and female athletes showed no significant differences in pre-competitive emotions. However, female athletes seemed to experience higher levels of negative emotions, such as anxiety, anger, guilt or shame, as well as lower levels of self-confidence. Conversely, they reported higher levels of happiness and hope than male athletes. With regard to the comparison of pre-competitive emotions in athletes with different perceptions concerning the importance and difficulty of the competition, the results showed that the "high importance/ difficulty" group reported significantly higher levels of hope and anxiety (as measured by the IES), than the "low importance/ difficulty" group. Additionally, with the exception of anger, the 'high importance/ difficulty" group also showed higher levels in all other emotions, although these differences were not statistically significant (Table 2).

TABLE 2 – Differences across gender and perceived importance/ difficulty of the competition in pre-competitive emotions

	MALES (n = 24)	FEMALES (n = 30)			LOW IMPORTANCE/ DIFFICULTY (n = 10)	HIGH IMPORTANCE/ DIFFICULTY (n = 10)		
Variables	*M (SD)*	*M (SD)*	*z*	*p*	*M (SD)*	*M (SD)*	*z*	*p*
CSAI - 2$_r$								
Cognitive anxiety	14.83 (4.51)	16.47 (5.14)	-1.15	.25	12.9 (4.93)	16.6 (5.23)	-1.37	.17
Somatic anxiety	12.88 (4.06)	14.08 (5.64)	-0.66	.51	11.8 (4.44)	14.4 (5.13)	-1.26	.21
Self-confidence	20.00 (4.85)	18.52 (4.76)	-1.07	.29	20.1 (5.97)	19.5 (4.97)	-0.34	.73
IES								
Happiness	4.42 (1.28)	4.48 (1.27)	-0.38	.71	4.22 (1.48)	4.80 (1.23)	-1.03	.31
Pride	4.58 (1.50)	4.00 (1.49)	-1.46	.15	4.10 (1.20)	4.80 (1.32)	-1.26	.21
Hope	5.25 (1.65)	5.33 (1.71)	-0.28	.78	2.40 (1.78)	3.60 (1.26)	-2.21	.02
Relief	2.38 (1.41)	2.27 (1.51)	-0.68	.50	1.20 (0.42)	1.90 (1.52)	-0.80	.75
Anxiety	3.29 (1.33)	3.70 (2.04)	-0.46	.65	4.20 (1.25)	5.90 (1.37)	-2.35	.03
Anger	1.96 (1.23)	2.20 (2.06)	-0.76	.45	1.60 (1.26)	1.50 (0.97)	-0.05	.43
Guilt	1.46 (0.72)	1.83 (1.46)	-0.38	.71	2.50 (1.72)	2.60 (1.51)	-0.32	.96
Shame	1.25 (0.68)	1.90 (1.67)	-1.34	.18	1.10 (0.32)	1.40 (0.97)	-0.67	.50

DISCUSSION

Another initiative to specifically explore discrete positive emotions was undertaken by Curry, Snyder, Cook, Ruby, and Rehm [19]. These authors found that hope predicted athletic outcomes in female cross-country and track athletes, and considered this emotion to be essential success in sports. In addition, more recently, in an investigation with 18 semi-professional male British soccer players, Woodman et al. [63] found that hope generated faster soccer-related reaction times. It seems that hope avoids feelings of discouragement and despair, both in training and in competition: if an athlete can preserve hope even after a disappointing performance "there is more likelihood that the full utilization of resources can be restored" [38, p. 247]. On the other hand, in general, negative emotions can have a detrimental effect in any achievement domain and be a disadvantage to athletes, removing all the pleasure from sports experience [4]. Thus, it is encouraging that guilt and shame were the less experienced emotions. First, to win consistently in sports, there is little room for guilt; in addition, shame can lead athletes to demean themselves and want to hide their failure or flaw from everyone, delaying coping and undermining their power to regulate the emotion they are experiencing and their concentration on the competitive task [39].

Self-confidence has been identified by elite athletes as the most crucial mental skill for success in sports [57]. The results from the present study seem to corroborate this assertion, suggesting that self-confidence is essential, not only concerning cognitive and somatic anxiety, but also in connection with other positive and negative emotions. In the first case (i.e., self-confidence vis-à-vis anxiety), the results of the present study are consistent with previous investigations, in which self-confident athletes systematically showed lower levels of state anxiety [e.g., 42]. In addition, while the negative association found between self-confidence and several negative emotions, such as anger, shame or guilt, seems to suggest these emotions' inadequability to a superior sport performance, the positive intercorrelations between positive emotions and self-confidence emphasize the importance of promoting an emotional positive environment in the sport context.

Concerning the comparison of male and female participants, the results seem to be consistent with previous research in sports contexts showing that, generally, men experience higher levels of self-confidence and lower levels of cognitive and somatic anxiety [e.g., 32, 35, 42] and more positive emotional states than women [e.g., 16]. These results may be, at least partially, due to certain negative stereotypes related to women's participation in sports, which may explain their higher levels of anxiety, and other negative emotions, such as guilt or shame. Nevertheless, women also reported higher levels of happiness and hope than men. In fact, it seems that, overall, they experienced a wide range of positive and negative emotions simultaneously. These results are consistent with the idea that emotional expressiveness is higher in feminine cultures [21] and that women report more negative affect than men but equal happiness [22]. One possible explanation may be related to the fact that, generally, women are more honest and open in their self-report measures [10, 35]. In addition, there is evidence that women feel more satisfaction and pleasure and less 'reluctance' in expressing their emotions and talking about their feelings than men [e.g., 8].

The results also suggested that athletes who perceived the competition as more important and difficult experienced higher emotional levels, or, at least, were more conscientious and aware of their emotions (either negative or positive). As regards to anxiety, these results are in line with previous research [e.g., 40, 41], indicating that perceived importance was closely associated with state anxiety. Also, a number of anecdotal reports from practitioners suggest the prevalence of higher levels of activation and motivation in more important and difficult competitions. It seems that, in highly stressful situations, athletes are more alert regarding their precompetitive emotional states. In fact, nearly all the precompetitive emotions assessed in the present study were experienced more intensely by the athletes with higher perceptions of importance and difficulty regarding the competition. Lazarus' [38, 39] CMR theory sustains that athletes' appraisals are associated with their experience of emotional responses. Earlier, we mentioned that cognitive-evaluative reactions include primary and secondary appraisals. Primary appraisals evaluates what is 'at stake'

for the athlete, encompassing goal relevance, goal congruence and type of ego involvement. In this context, important and difficult competitions will impose more demands on the athletes' resources (i.e., more stress), thus eliciting more primary (and secondary) evaluations and, eventually, more intense emotions.

Conversely, it was surprising to find the existence of differences in anxiety in the IES, but not on the CSAI-2 dimensions. It should be noted that, as mentioned previously, the CSAI-2 measures the constructs of self-confidence, cognitive anxiety, and somatic anxiety. Even though somatic anxiety is related to arousal, they are distinct and independent constructs, and have differential effects upon performance (for more details see 30). Somatic anxiety has been defined as the "perceptions of the physiological-affective elements of the anxiety experience (...) feeling states such as nervousness and tension (p.541)" (47,). In effect, Ward and Cox (62) sustained that it would be problematic to substitute the construct of somatic anxiety for physiological arousal. In this context, it is possible that, in a single-item measure like the IES, when the participants were asked to rate their level of 'anxiety', they were actually reporting their levels of physiological arousal. In other words, perhaps the athletes were reporting how aroused or activated they felt, independent of the valence – positive or negative – of the feeling associated with that arousal (52).

One of the limitations of the present study arises because some athletes may find it intrusive to complete a questionnaire in the preparation period before the competition. Several authors (e.g., 62) posit that, to be representative of athletes psychological states immediately or during performance, the data should be obtained the nearest to the actual performance as possible. However, the fact is that, usually, it takes between three and 10 minutes to complete de CSAI-2. This often makes it less practical for use in actual competitive settings, where there is no room for delays or distractions. Furthermore, the instruction to pay attention to one's own emotions can lead to an emotional intensification, particularly negative emotions such as anxiety. Nevertheless, in the present study, in addition to the fact that all the participants were volunteers, none of the athlete reported that this methodology had somehow distorted their own emotions or subsequent performance.

Focusing on other directions for future research, our understanding in this domain could be further enhanced by the investigation of the specific effects of discrete positive and negative emotions, both on the performance and on the well-being of sport performers. This can be achieved through longitudinal research that investigates whether (and which) specific positive emotions are associated with greater long-term achievement in sport or enhanced well-being. Performers' appraisals and coping responses, and their link to the experience of emotional responses during sport performances also deserve attention. As a final remark, given the small sample size, future research should seek to consolidate and confirm the results of this study in different sports and with larger samples. It is important to explore not only the role of individual differences and the possible moderating effect of situational variables such as importance/ difficulty, age and competitive level in athletes' emotional reactions, but also to examine its direct relationship with athletes' performance. From a practical perspective, the results of the present investigation suggest important implications for the development and implementation of emotional control and self-confidence programs. If these programs have the expected outcome of generating collective positive emotional manifestations, it is probable that athletes achieve higher levels of success. This may be particularly important in team sports, since, as we mentioned previously, positive emotions appear to be particularly "contagious" in relation to teammates, especially when what is "at stake" is the attainment of collective shared goals (55). Moreover, it is well known the concept of "collective efficacy", which influences group judgment on their joint capabilities to organize and execute the courses of action required to accomplish certain levels of performance (5). Still, so as to ensure that these programs are effective in the medium and long term, sport psychology specialists should also be aware that teaching athletes how to cope with adverse situations without having a proper understanding of their cognitive and emotional styles and processes probably is not very efficient (49). Our results provide some evidence, for example, that men and women experience (or report) different precompetitive emotional levels, or that important and difficult competitions may generate a higher level of 'overall' emotional alert. In other words, at any competitive level, psychological intervention should be highly individualized.

In summary, this study demonstrated that the attention paid to precompetitive emotional responses cannot and should not be restricted to anxiety, highlighting the importance of investigating a wide range of discrete emotions in performance contexts. Moreover, self-confidence was confirmed as a crucial and determinant factor in sports performance. As well, the analysis of the results regarding the comparison of emotional states across genders and competition characteristics, namely its perceived importance/ difficulty, showed the usefulness of investigating the effects of several individual and situational variables as potentially critical factors in emotional reactions.

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Psychological impact of sports injuries and psychological well-being in relation to sports performance in competition gymnasts

KEY WORDS:
Psychological impact. Sports performance. Sports injuries. Psychological well-being.

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ABSTRACT

Investigations with athletes who have suffered injuries have always been associated to the physical aspects of the injury, and there has not been enough investigation on its psychological aspects and how they affect athletes' lives. The present paper examines the relationship between the psychological impact of a sport injury, psychological well-being and sports performance, before and after the injury, in 14 female gymnasts aged between 12 and 18 years old. Before the sport season begun, an adapted version of the Rating of Perceived Effort assessed the perceived psychological impact and the Spanish version of the Scale of Psychological Well-Being was used to assess psychological well-being. At the end of the season, the performance of the athletes, was compared to the results of the last season before the injury. Results were analyzed using descriptive and inferential statistics and showed a significant improvement in the overall athletic performance in the aftermath of the injury with respect to the previous season. However, there were no significant correlations between sports performance and the psychological well-being or the perceived psychological impact of the injury. Conversely, the results showed a positive relationship between the perceived psychological impact and the personal growth dimension of psychological well-being.

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