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THE ROLE OF ACHIEVEMENT GOALS AND MOTIVATIONAL CLIMATES IN UNDERSTANDING YOUTH ATHLETE EMOTIONS: A STUDY WITH YOUTH TEAM PLAYERS

O PAPEL DOS OBJETIVOS DE REALIZAÇÃO E DOS CLIMAS MOTIVACIONAIS NA COMPREENSÃO DAS EMOÇÕES: UM ESTUDO COM JOVENS JOGADORES DE MODALIDADES COLETIVAS

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ABSTRACT

Youth sports can enhance adolescents' well-being, but their impact depends on factors such as achievement goals and perceived motivational climate. This study examined the relationship between achievement goals (task/ego) and perceived motivational climate (task, performance, mistakes) with the emotional states of fear of failure and anxiety. Six hundred eighty-five male adolescent team sport players, aged between 10 and 16, completed questionnaires assessing the targeted variables. Correlational, canonical, and regression analyses revealed that task orientation and a perceived task-involvement climate were generally associated with lower levels of fear of failure and anxiety. Conversely, ego orientation and a perceived ego-oriented climate (performance - or mistakes-focused) were linked to higher levels of these emotional states. The findings highlight the importance of considering motivational climates and achievement goals in youth sports to understand better how participation influences young athletes' emotional well-being.
Keywords: achievement goals, motivational climate, anxiety, fear of failure, team sports

RESUMO

A prática de desporto pode melhorar o bem-estar dos adolescentes, mas o seu impacto depende de fatores como os objetivos de realização e o clima motivacional percebido. A presente investigação analisou a relação entre os objetivos de realização (tarefa/ego) e o clima motivacional percebido (tarefa, desempenho, erros) com o medo de falhar e a ansiedade competitiva. Seiscentos e oitenta e cinco adolescentes do sexo masculino, praticantes de modalidades coletivas, com idades compreendidas entre os 10 e os 16 anos, completaram questionários que avaliavam as variáveis em análise. Análises correlacionais, canónicas e de regressão revelaram que a orientação para a tarefa e um clima de envolvimento na tarefa estavam geralmente associados a níveis mais baixos de medo de falhar e ansiedade. Por outro lado, a orientação para o ego e um clima orientado para o ego (focado no desempenho ou nos erros) foram associados a níveis mais elevados destes estados emocionais. Os resultados sublinham a importância de considerar o clima motivacional e os objetivos de realização no desporto juvenil, visando compreender melhor como a participação desportiva influencia o bem-estar emocional dos jovens atletas.
Palavras-chave: objetivos de realização, clima motivacional, ansiedade, medo de falhar, desportos coletivos

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Over the years, scientific advancements have made it increasingly clear that psychology plays a decisive role in sports. Research has repeatedly shown that psychological preparation is as crucial as physical training, often serving as the distinguishing factor between elite performers (Jones et al., 2010). As a result, there has been a growing investment in research within sport psychology, leading to identifying key concepts and constructs critical in preparation and competition scenarios (Gould et al., 2002).

Cognitive orientations are among the most central factors influencing performance. They shape how athletes interpret situations as either success or failure and, based on these perceptions, how they establish their goals (Nicholls, 1984). Two main cognitive orientations can be highlighted: task orientation, which emphasizes learning, values effort in tasks, and views mistakes as part of the natural development process; and ego orientation, which focuses on outperforming others and winning, often involving comparisons and a negative perception of mistakes, impacting both performance and self-esteem. Similarly, the motivational climate also plays a vital role in shaping athletes' performance and behaviour throughout their sporting careers. This climate refers to the environment created by coaches, teammates, and other team members. Depending on its nature, the climate can be task-oriented, promoting continuous improvement and learning efforts (Duda & Nicholls, 1992); performance-oriented, emphasizing comparisons and surpassing others (Treasure & Roberts, 2001); or error-oriented, placing excessive importance on mistakes, which are perceived as threats to personal competence and honor.

Both cognitive orientations and motivational climate have been associated with various outcomes, including decreased self-esteem and sport dropout (Jõesaar et al., 2011) heightened frustration and stress (Quested & Duda, 2010), unethical behaviours, and diminished sportsmanship (Ommundsen et al., 2003). Whereas task orientation and task-oriented climates have consistently been linked to lower levels of anxiety (Smith et al., 2007) and fear of failure (Smith et al., 2007), ego orientation and performance- or error-oriented climates are frequently tied to higher anxiety levels (Nicholls et al., 2010; Ommundsen et al., 2003; Smith et al., 2007) and fear of failure, often due to their emphasis on external evaluation (Ruiz-Sánchez et al., 2017).

Despite considerable research on the influence of cognitive orientations and motivational climates on athletes' emotional experiences, their relationship with specific emotions, such as anxiety and fear of failure, remains insufficiently understood. While task-oriented climates are generally associated with positive outcomes, ego-oriented and performance-focused climates yield mixed results, with the potential for negative and context-dependent positive effects.

For example, some studies present differing perspectives, suggesting that ego orientation can positively influence performance when paired with self-confidence, persistence, and perceived competence (Ommundsen, 2004). In addition, among high-performance athletes accustomed to competitive environments, a performance-motivational climate has been associated with motivation to achieve success without a corresponding increase in anxiety (Smith et al., 2007). Moreover, the role of error-oriented climates in shaping athletes' emotional responses warrants further exploration, particularly given its association with heightened fear of failure in certain contexts.

Finally, recent studies have provided further insights into the relationship between motivational climates and athletes' fear of failure. Gómez-López et al. (2019) found that coaches who foster a task-involving climate, viewing mistakes as part of the learning process, can

reduce athletes' fear of failure. Likewise, González-Ponce et al. (2023) showed that empowering motivational climates are negatively associated with fear of failure, suggesting that supportive environments can mitigate such fears. These findings align with earlier research (e.g., Dweck, 1986), indicating that athletes focused on personal growth and development tend to experience lower fear of failure.

Therefore, this study aimed to address existing gaps and contribute to a more comprehensive understanding of how achievement goals and motivational climates interact to influence young athletes' emotional experiences. By investigating their relationships with anxiety and fear of failure in youth team-sport athletes, this study aims to provide valuable insights into potential intervention strategies to mitigate negative emotional outcomes.

METHODS

Participants

This study involved 685 male Portuguese athletes aged 10 to 16 years (M = 13.41, *SD* = 1.28) who participated in various team sports, including football (n = 191), handball (n = 108), volleyball (n = 93), water polo (n = 61), and basketball (n = 232). All athletes were affiliated with sports clubs in Portugal's northern region.

Instruments

Task and Ego Orientation in Sport Questionnaire (TEOSQ). The TEOSQ assessed athletes' achievement goals, differentiating between task and ego orientations. The Portuguese version (TEOSQp) translated and adapted by Fonseca and Biddle (2001), from the original questionnaire developed by Chi and Duda (1995), comprises 13 items addressing perceptions of success in sports, divided into two dimensions: task orientation (e.g., "I feel most successful in football when I work really hard") and ego orientation (e.g., "I feel most successful in football when I am the only one who can execute certain techniques"). Responses were recorded on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Perceived Motivational Climate in Sport Questionnaire (PMCSQ). The PMCSQ assessed athletes' perceptions of their team's motivational climate, distinguishing between mastery-oriented and performance-oriented environments. The Portuguese version (PMCSQp), adapted by Fonseca (2002) from the original questionnaire developed by Seifriz et al. (1992), consists of 19 items addressing three dimensions: mastery (e.g., "In my training, athletes learn new things and feel satisfied"), performance (e.g., "In my training, athletes try to outperform others"), and error emphasis (e.g., "In my training, athletes are afraid of making mistakes"). Participants responded using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Sport Anxiety Scale – 2 (SAS-2). The SAS-2 is a multidimensional scale designed to assess the trait of anxiety in athletes, focusing on cognitive and somatic dimensions. The Portuguese version, adapted by Cruz and Gomes (2007) from the original questionnaire developed by Smith et al. (2006), consists of 15 items measuring three subscales: somatic anxiety (5 items), worry (5 items), and concentration disruption (5 items). Participants respond using a 4-point Likert scale ranging from 1 (Not at All) to 4 (Very Much).

Performance Failure Fear Appraisal Inventory (PFAI). The PFAI evaluates the cognitive, motivational, and relational dimensions of fear of failure. The original questionnaire developed by Conroy et al. (2002) included 25 items distributed across five subscales: fear of experiencing shame and embarrassment (7 items), fear of reduced self-esteem (4 items), fear of losing the interest

of significant others (5 items), fear of upsetting significant others (5 items), and fear of an uncertain future (4 items). However, in the Portuguese version, adapted by Coutinho et al. (2022), the scale was reduced to 19 items to enhance its psychometric properties while maintaining the integrity of the subscales. Athletes responded on a 5-point Likert scale ranging from 1 (Not at All) to 4 (Very Much).

Data analysis

Data collection was conducted within the scope of the project "In search of excellence in sport: A mixed-longitudinal study in young athletes" (INEX), led by the Centre for Research, Education, Innovation, and Intervention in Sport (CIFI2D) at the Faculty of Sport, University of Porto (FADEUP). The Ethics Committee (CEFADE 13.2017) approved the study, and clubs provided formal permission for data collection.

Data Processing and Analysis

The data were processed using IBM SPSS Statistics version 29.0 (SPSS Inc., Chicago, IL, USA).

Preliminary Analyses

Before conducting the main analyses, the number of missing values in the dataset was examined. The data failed Little's MCAR test for completely random missingness [$\chi^2(5192) = 5725.26$, $p < .001$]. However, as the total missing data did not exceed 5% (ranging from 0 to 1.6%), missing values were replaced with the mean of the respective item (Schlomer et al., 2010). Outliers were identified using boxplots and the calculation of Q1 - 3 * IQR and Q3 + 3 * IQR, as well as Mahalanobis distance (D^2), which revealed significant deviations in seven cases. These participants were excluded, reducing the final sample size to 685. The distribution properties of the variables (e.g., skewness, kurtosis) were also examined. No significant violations of normality were found, with absolute skewness values below |2| (-1.221 to .931) and kurtosis values below |7| (-2.6865 to .523). These results align with thresholds for univariate normality (-3 to +3 for skewness and -10 to +10 for kurtosis) as outlined by Kline et al. (2011). Finally, the internal consistency of all scales and subscales was examined before conducting the main analyses using Cronbach's alpha coefficients. The reliability values ranged from acceptable to excellent ($\alpha = .60$ to .93), demonstrating adequate consistency for the measured constructs (Kline, 1999).

Main Analyses

Descriptive statistics and bivariate correlations were calculated to examine relationships between achievement goals, motivational climate, anxiety, and fear of failure. Canonical correlation analysis was conducted to explore multivariate relationships between cognitive orientations and motivational climates (predictor variables) and anxiety and fear of failure (dependent variables). Hierarchical multiple regression analyses were performed to determine the variance in anxiety and fear of failure explained by the predictor variables (i.e., cognitive orientations and motivational climates). Before calculating these multivariate statistics, assumptions of linearity, multicollinearity (with VIF values between 1.004 and 1.766 and tolerance values between .566 and .996), residual normality, and absence of autocorrelation (tested using the Durbin-Watson statistic, yielding values of 1.863 and 1.926, which fall within the acceptable range 1.5–2.5, indicating no significant autocorrelation) were verified. The analyses showed acceptable conditions for conducting the multivariate analyses.

RESULTS

Descriptive statistics

The descriptive statistics and reliability

coefficients for the variables analyzed in the study are presented in Tables 1 and 2.

Table 1: *Descriptive statistics and reliability of study variables.*

Variables	*M*	*SD*	*α*
Achievment Goals			
Task	4.38	.52	.82
Ego	2.69	.97	.85
Motivational climate			
Task Motivational Climate	4.41	.49	.85
Performance Motivational Climate	3.01	.71	.69
Mistakes Motivational Climate	3.05	.97	.84
Trait anxiety			
Somatic Anxiety	1.79	.68	.82
Worry	2.63	.80	.84
Concentration Disruption	1.93	.60	.71
Total Anxiety	2.12	.56	.88
Fear of failure			
Fear of experiencing shame and embarrassment	2.60	.95	.83
Fear of devaluing one's self-estimate	2.47	.95	.72
Fear of having an uncertain future	2.42	.87	.60
Fear of others losing interest	1.96	.97	.89
Fear of upsetting important others	2.28	.93	.77
Total fear of failure	2.35	.79	.93

Correlational analyses

The data in Table 2 show key relationships between athletes' achievement goals and perceived motivational climate motivation with anxiety and fear of failure. Overall, task orientation and a task-oriented motivational climate were generally linked to more positive outcomes, including lower anxiety and reduced fear of failure. These approaches were associated with less disruption in concentration, fewer feelings of shame, and less worry about disappointing others or devaluing oneself. In contrast, ego orientation, performance-oriented climates, and error-oriented climates were connected to less favorable outcomes. These variables showed stronger connections to increased anxiety and fear of failure, including fears of embarrassment, rejection by others, and uncertain futures.

Canonical correlations

Table 3 presents the results of a canonical correlation analysis examining the multivariate relationships between cognitive orientations and motivational climate (first set of variables) and anxiety and fear of failure (second set of variables). The analysis identified three statistically significant canonical functions: first function, $R_c = .57$, $R_c^2 = .32$ (32% variance explained), Wilks' $\Lambda = .58$, $F_{(40, 2931.98)} = 9.66$, $p < .001$; second function, $R_c = .29$, $R_c^2 = .08$ (8% variance explained), Wilks' $\Lambda = .86$, $F_{(28, 2427.96)} = 3.68$, $p < .001$; and third function, $R_c = .22$, $R_c^2 = .05$ (5% variance explained), Wilks' $\Lambda = .94$, $F_{(18, 1906.85)} = 2.46$, $p < .001$.

The redundancy index for the first function indicated that 10.7% of the variance in the cognitive orientations and motivational climate set (Set 1) could be explained by the canonical variable from the anxiety and fear of failure set (Set 2). Conversely, 13% of the variance in set 2

Table 2: *Bivariate correlations between achievement goals, perceived motivational climate, anxiety and fear of failure.*

	Somatic Anxiety	*Worry*	*Concentration Disruption*	*Total Anxiety*	*Fear of experiencing shame and embarrassment*	*Fear of devaluing one's self-estimate*	*Fear of having an uncertain future*	*Fear of others losing interest*	*Fear of upsetting important others*	*Total fear of failure*
Task	-.20*	-.02	-.23*	-.17*	-.16*	-.22*	-.19*	-.29*	-.21*	-.25*
Ego	.03	.11*	.01	.06	.19*	.13*	.19*	.19*	.17*	.20*
Task Motivational Climate	-.13*	.01	-.17*	-.11*	-.17*	-.24*	-.21*	-.38*	-.25*	-.30*
Performance Motivational Climate	.14*	.15*	.17*	.19*	.26*	.29*	.32*	.41*	.36*	.39*
Mistakes Motivational Climate	.16*	.20*	.21*	.23*	.30*	.26*	.21*	.25*	.29*	.31*

* $p < .01$.

was explained by the canonical variable from set 1. For the second function, redundancy indices were notably lower, with only 1.6% of the variance in set 1 and 1.2% of the variance in set 2 explained. Similarly, for the third function, only 1% of the variance in Set 1 and less than .05% of the variance in Set 2 were explained. Nonetheless, although all three canonical functions were statistically significant and thus relevant from a statistical perspective, the low redundancy indices and percentages of variance explained by the second and third functions suggest limited practical relevance. Consequently, we focused primarily on the first canonical function, which explains the largest variance percentage.

The first canonical variable was characterized by negative loadings from task orientation (r_s = -.58) and a task-oriented motivational climate (r_s = -.68), alongside positive loadings from performance-oriented (r_s = .74) and error-oriented motivational climates (r_s = .49). In contrast, the second canonical variable was characterized by positive loadings from somatic anxiety (r_s = .42), concentration disruption (r_s = .50), and all dimensions of fear of failure, including fear of shame/embarrassment (r_s = .60), fear of reduced self-esteem (r_s = .70), fear of an uncertain future (r_s = .67), fear of losing the interest of significant others (r_s = .95), and fear of upsetting significant others (r_s = .78). These results suggest that a stronger task orientation and perception of a task-oriented climate, combined with a climate more focused on performance or errors, were associated with lower levels of somatic anxiety, concentration disruption, and all dimensions of fear.

Table 3: *Canonical correlation between study variables.*

Variables	**Function 1**
Task	-.58
Ego	.28
Task Motivational Climate	-.68
Performance Motivational Climate	.74
Mistakes Motivational Climate	.49
Somatic Anxiety	.42
Worry	.24
Concentration Disruption	.50
Fear of experiencing shame and embarrassment	.60
Fear of devaluing one's self-estimate	.70
Fear of having an uncertain future	.67
Fear of others losing interest	.95
Fear of upsetting important others	.78

Regression analyses

Finally, two multiple regression analyses (Table 4) were conducted to evaluate the relationship between achievement goals and motivational climates (predictor variables) and total anxiety and total fear of failure (dependent variables).

Model 1, which included achievement goals, was statistically significant in the hierarchical regression analysis for total anxiety, $F_{(2, 682)}$ = 12.65, $p < .001$, and accounted for 4% of the variance. Adding motivational climate in Step 2 increased the total variance explained by the model to 9.4%, $F_{(3, 679)}$ = 14.63; $p < .001$. In the final adjusted model, three predictors were statistically significant: task orientation (β = -.20, $p < .001$) and the motivational climate focused on errors (β = .19, $p < .001$) contributed more strongly to the model than the motivational climate focused on performance (β = .11, $p = .009$). These results suggest that higher levels of anxiety were associated with lower task orientation and higher levels of motivational climates focused on errors and performance.

In the hierarchical regression analysis for total fear of failure, Model 1, which included achievement goals, was statistically significant, $F_{(2, 682)} = 43.53$, $p < .001$, but explained only 1% of the variance. When the motivational climate was added in Step 2, the variance explained by the model increased to 3%, $F_{(3, 679)}$ = 45.15; $p < .001$). In the final model, all predictors were statistically significant: motivational climate focused on performance (β = .26, $p < .001$), motivational climate focused on errors (β = .19, $p < .001$), task motivational climate (β = -.15, $p < .001$), and task orientation (β = -.15, $p < .001$) had stronger predictive values compared to ego orientation (β = .09, p =

Table 4: *Hierarchical regression analyses predicting total anxiety and total fear of failure from achievement goals and motivational climates.*

Variables	*B*	*SE B*	β	*t*
Total Anxiety				
Model 1				
Task	-.20	.04	-.18	-4.75***
Ego	.04	.02	.07	1.95
Model 2				
Task	-.21	.05	-.20	-4.07***
Ego	.01	.02	.02	.38**
Task Motivational Climate	.05	.06	.05	.92
Performance Motivational Climate	.09	.03	.11	2.63**
Mistakes Motivational Climate	.11	.02	.19	4.72***
Total Fear of Failure				
Model 1				
Task	-.41	.06	-.27	-7.43***
Ego	.18	.03	.22	6.12***
Model 2				
Task	-.23	.07	-.15	-3.45***
Ego	.07	.03	.09	2.45*
Task Motivational Climate	-.24	.07	-.15	-3.45***
Performance Motivational Climate	.29	.04	.26	6.71***
Mistakes Motivational Climate	.16	.03	.19	5.42***

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

.02). These results suggest that higher levels of fear of failure were associated with lower task orientation and a motivational climate focused on tasks, while higher levels of fear of failure were related to motivational climates focused on performance and errors, as well as a greater focus on ego orientation.

DISCUSSION AND CONCLUSION

The primary objective of this study was to investigate how achievement goals and perceived motivational climates interacted to influence young players' emotional experiences, specifically their levels of anxiety and fear of failure. By addressing this objective, the study aimed to provide a more comprehensive understanding of these relationships and provide insights that could inform interventions to reduce negative emotional outcomes. Overall, the findings confirm the importance of these psychological constructs, demonstrating that both achievement goals and perceived motivational climates are critical determinants of athletes' emotional states. Moreover, the results not only align with existing literature but also offer new insights into the specific contributions of cognitive orientations and motivational climates in shaping anxiety and fear of failure among youth athletes, which are well-documented as having negative consequences on athletic performance if not effectively managed through appropriate interventions (Fortes et al., 2019).

In interpreting these findings, all types of analyses - correlational, canonical, and hierarchical regression - point to consistent conclusions. First, the correlational results showed that task orientation and task-focused motivational climates were negatively associated with anxiety and fear of failure, suggesting that emphasizing personal improvement, effort, and learning can promote a sense of well-being (Gomez-Lopez et al., 2020; Ruiz-Sánchez et al., 2017). This aligns with previous research that highlights the positive effects of task-oriented approaches, such as greater well-being and satisfaction with sport participation (Balaguer et al., 2002; Smith et al., 2007). By contrast, ego orientation and climates focused on performance or mistakes were positively correlated with anxiety and fear of failure, reflecting a more pressurized environment centered on outperforming teammates and opponents (Ommundsen et al., 2003).

Further reinforcing these patterns, the canonical correlation and hierarchical regression analyses revealed that cognitive orientations (task/ego) and motivational climates (task, performance, and mistake-focused) emerged in different combinations across the analyses. However, the findings remained consistent: lower task orientation and task--focused climates, alongside higher ego orientation and performance- or mistake-focused climates, were associated with higher levels of anxiety and fear of failure. These associations were observed not only in the overall scores for total anxiety and total fear of failure but also in the specific dimensions of anxiety, including somatic anxiety, worry, and concentration disruption, and the specific dimensions of fear of failure, such as fear of shame/embarrassment, fear of reduced self-esteem, fear of an uncertain future, fear of losing the interest of significant others, and fear of upsetting significant others (Braithwaite et al., 2011).

The findings emphasize that task orientation and task-centered climates are crucial in mitigating negative emotional states, such as anxiety and fear of failure. These approaches, whether at the individual level (achievement goals) or environmental level (motivational climates), promote positive emotional experiences by emphasizing personal progression, effort, and learning. In contrast, ego orientation and performance- or mistake-focused climates contribute to the exacerbation of these negative emotions, creating environments centered on comparison and error avoidance that heighten pressure and emotional distress

(Castro-Sánchez et al., 2019; Gomez-Lopez et al., 2020; Ntoumanis & Biddle, 1999). By fostering task-oriented mindsets and climates, the detrimental effects of performance- and error-focused environments can be minimized, offering youth athletes a more supportive and constructive emotional experience.

Despite the value of these results, several considerations warrant further research. First, this study only included male participants, so future investigations should incorporate female athletes to explore potential gender-related differences. Second, because this research employed a cross-sectional design, it cannot capture changes over time; a longitudinal approach would offer more profound insights into how these relationships evolve and how targeted interventions might influence them. Finally, examining a range of individual sports may be worthwhile, as the social dynamics and competitive structures in those contexts may shape motivational orientations and emotional outcomes differently. Addressing these gaps will enhance our understanding of how best to foster healthy psychological environments and ensure that all athletes can benefit from evidence-based strategies to reduce anxiety and fear of failure.

In terms of practical implications, these findings offer guidance for coaches, sports organizations, and youth development programs aiming to foster healthier psychological environments for young athletes. Emphasizing personal growth, skill mastery, and effort - rather than relentless competition or fear of making mistakes - can help athletes feel supported and secure, ultimately reducing anxiety and fear of failure. Coaches can actively promote task-focused climates by setting individual goals, celebrating progress, and reframing errors as essential opportunities for learning. Moreover, these strategies can be integrated into broader interventions, such as training sessions and workshops designed to improve coaches' communication styles, give constructive feedback, and reinforce intrinsic motivation. By fostering positive emotional experiences and resilience in competitive settings, athletes will be better equipped to succeed on and off the field.

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