

Relationship between Athletic Temperament, Competitive Anxiety, and Sports Performance

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Abstract: Sports performance is influenced not only by physical fitness, technical ability, tactical knowledge, and training experience but also by psychological characteristics. Among the psychological variables that have received considerable attention, athletic temperament, competitive anxiety, and sports performance are closely interconnected. Athletic temperament refers to relatively stable individual differences in emotional reactivity, behavioral regulation, motivation, persistence, risk-taking, sociability, and responses to stressful situations. Competitive anxiety refers to the cognitive and physiological responses experienced by athletes when they perceive competition as threatening, demanding, or highly evaluative.

Keywords: Athletic Temperament, Personality, Competitive Anxiety, Sports Performance, Emotional Regulation, Athletes, Sport Psychology.

I. INTRODUCTION

Athletic performance is a multidimensional outcome that depends on the interaction of physical, technical, tactical, physiological, and psychological factors. Athletes competing at similar physical and technical levels often demonstrate substantially different performances because of differences in psychological preparation and emotional regulation. An athlete's ability to remain focused, confident, motivated, and emotionally balanced under competitive pressure can influence whether available physical and technical abilities are successfully translated into performance.

Athletic temperament represents an important psychological foundation for understanding individual differences in sport. Although the terms temperament and personality are not identical, both are commonly used to describe relatively stable individual differences that influence emotional and behavioral responses. In sport settings, temperament may be reflected in persistence, novelty seeking, harm avoidance, emotional reactivity, self-control, sociability, competitiveness, and sensitivity to failure or evaluation. These characteristics influence how athletes perceive competitive situations and how they respond to pressure.

Competitive anxiety is one of the most frequently studied psychological experiences in sport. It generally includes cognitive anxiety, such as worry, negative expectations, and concerns about failure, and somatic anxiety, such as muscular tension, sweating, increased heart rate, and physical discomfort. Self-confidence is also frequently considered alongside these dimensions because it can alter the interpretation of competitive anxiety. A systematic review and meta-analysis found that competitive anxiety is associated with athlete characteristics and sport context, with more robust relationships reported for factors such as younger age, lower experience, and female gender in the reviewed literature.

The relationship between athletic temperament, competitive anxiety, and performance is therefore best understood as a dynamic process. Temperament may influence how an athlete interprets competition; this interpretation may influence anxiety; anxiety may subsequently affect attention, decision-making, physiological activation, and performance. However, the effect is not necessarily linear. Some athletes interpret physiological activation as a sign of readiness, whereas others interpret similar sensations as evidence of impending failure.

This review paper examines the relationship between athletic temperament, competitive anxiety, and sports performance by discussing major concepts, theoretical perspectives, empirical evidence, moderating variables, practical implications, and directions for future research.



II. CONCEPT OF ATHLETIC TEMPERAMENT

Temperament is generally understood as a relatively stable pattern of emotional and behavioral tendencies. It influences how individuals react to stimulation, stress, reward, novelty, and social situations. In the athletic context, temperament may shape an athlete's willingness to take risks, tolerance of uncertainty, persistence during difficult training, response to defeat, emotional control, and capacity to perform under pressure.

Athletes differ considerably in their competitive behavioral patterns. Some athletes are naturally calm and emotionally stable, whereas others are highly reactive to criticism, mistakes, or uncertainty. Some demonstrate strong persistence and disciplined preparation, while others may be more impulsive or sensation-seeking. These characteristics can influence both training behavior and competitive responses.

Research involving temperament and anxiety has shown that athletes may differ according to sport type and individual temperamental characteristics. For example, differences in harm avoidance and anxiety-related tendencies have been observed among athletes participating in different sports, supporting the view that psychological dispositions may influence sport experiences and competitive behavior.

Temperament should not be viewed as determining athletic success. Instead, it may create tendencies that interact with coaching, training, experience, coping skills, social support, and environmental demands. An emotionally reactive athlete may be more vulnerable to competitive anxiety, but appropriate psychological training can help develop emotional regulation and coping strategies.

Table 1. Major Athletic Temperament Characteristics and Their Possible Sport Implications

Temperament characteristic	General behavioral tendency	Possible influence on competition
Emotional stability	Calm and controlled emotional response	May support concentration under pressure
High emotional reactivity	Strong response to stress and evaluation	May increase vulnerability to competitive anxiety
Persistence	Continued effort despite difficulty	May improve resilience and long-term performance
Conscientiousness	Discipline, organization, responsibility	Supports systematic training and preparation
Extraversion	Sociability and energetic engagement	May facilitate positive emotional experiences
Harm avoidance	Sensitivity to danger, criticism, or failure	May increase worry and avoidance responses
Sensation seeking	Preference for stimulation and challenge	May support performance in high-arousal situations



Self-control	Regulation of impulses and emotions	May reduce disruptive competitive responses
Achievement orientation	Strong desire for success	May enhance motivation but also increase pressure

III. UNDERSTANDING COMPETITIVE ANXIETY

Competitive anxiety refers to anxiety experienced before, during, or in anticipation of athletic competition. It occurs when athletes perceive competitive demands as exceeding their available resources or when the consequences of performance are considered highly important.

Competitive anxiety is commonly divided into cognitive and somatic components. Cognitive anxiety includes worry, fear of failure, negative self-evaluation, difficulty concentrating, and concerns about disappointing coaches or teammates. Somatic anxiety involves physiological responses such as increased heart rate, muscle tension, sweating, gastrointestinal discomfort, and trembling.

Competitive anxiety is also influenced by the distinction between state and trait anxiety. State anxiety refers to temporary anxiety experienced in a specific situation, whereas trait anxiety reflects a more stable tendency to perceive situations as threatening. Athletes with high trait anxiety may be more likely to experience intense competitive anxiety when exposed to stressful sporting situations.

Competitive anxiety should not automatically be considered harmful. Its effect depends on intensity, interpretation, timing, and the demands of the sport. Moderate activation may increase alertness and readiness, whereas excessive anxiety may interfere with attentional control and motor execution. Reviews of competitive anxiety research have emphasized that anxiety-performance relationships depend on whether athletes interpret anxiety as facilitative or debilitating and on the interaction between cognitive and physiological responses.

Table 2. Major Dimensions of Competitive Anxiety

Dimension	Main characteristics	Possible effect on performance
Cognitive anxiety	Worry, negative thoughts, fear of failure	May disrupt concentration and decision-making
Somatic anxiety	Increased heart rate, tension, sweating	May improve readiness or impair coordination
Trait anxiety	Stable tendency toward anxious responses	May increase vulnerability in stressful competition
State anxiety	Temporary situational anxiety	Varies according to competition demands
Self-confidence	Belief in ability to perform successfully	Often buffers negative effects of anxiety



Facilitative interpretation	Anxiety viewed as readiness or challenge	May support motivation and performance
Debilitative interpretation	Anxiety viewed as threat or loss of control	May impair performance

IV. THEORETICAL PERSPECTIVES ON ANXIETY AND SPORTS PERFORMANCE

Several theories have been used to explain the relationship between anxiety and performance. Early arousal theories proposed that performance improves as arousal increases until an optimal point is reached, after which further increases may reduce performance. This general perspective is often described through an inverted-U relationship.

Multidimensional approaches distinguish between cognitive anxiety and somatic anxiety. Cognitive anxiety is often considered particularly disruptive because excessive worry competes with task-relevant attention. Somatic anxiety may show a different relationship with performance and can sometimes be interpreted as a normal physiological preparation for competition.

The catastrophe model proposes that when physiological arousal is high, increases in cognitive anxiety may produce a sudden and substantial decline in performance rather than a gradual reduction. This perspective is particularly relevant to athletes who perform effectively under moderate pressure but experience rapid performance deterioration when both physical activation and worry become excessive.

The Individual Zones of Optimal Functioning perspective proposes that athletes differ in their ideal emotional and arousal ranges. One athlete may perform best with relatively low anxiety, whereas another may require a higher level of activation to achieve optimal performance. Therefore, the search for one universal optimal anxiety level is inconsistent with individual differences in temperament and psychological functioning.

The concept of facilitative and debilitative anxiety also provides an important framework. Athletes who believe that competitive anxiety is harmful may experience increased worry and reduced confidence. In contrast, athletes who interpret activation as excitement or readiness may maintain more adaptive performance responses.

V. COMPETITIVE ANXIETY AND SPORTS PERFORMANCE

Competitive anxiety may influence performance through several mechanisms. Cognitive anxiety can interfere with attention by directing mental resources toward worry and self-evaluation rather than the immediate task. An athlete may become preoccupied with possible failure, consequences of losing, audience reactions, or the expectations of coaches and teammates.

Somatic anxiety may also influence performance. Moderate physiological activation can prepare the body for action, but excessive muscular tension may interfere with coordination and fluid movement. This may be especially problematic in sports requiring fine motor control, precision, balance, and rapid decision-making.

The overall relationship is therefore not simply that more anxiety produces poorer performance. Some athletes perform effectively when moderately anxious because anxiety increases vigilance and competitive intensity. Problems are more likely when anxiety exceeds the athlete's capacity for emotional regulation or when anxiety is interpreted as uncontrollable and threatening.

Psychological interventions can help reduce maladaptive competitive anxiety. A meta-analysis of psychological interventions reported small-to-medium overall effects on competitive anxiety and found evidence that such interventions can be beneficial across different athlete and intervention characteristics.



Table 3. Potential Effects of Competitive Anxiety on Athletic Performance

Level or interpretation of anxiety	Likely psychological response	Possible performance outcome
Very low activation	Reduced alertness and urgency	Possible underperformance
Moderate and controlled anxiety	Increased attention and readiness	Potentially optimal performance
High but facilitative anxiety	Strong activation interpreted positively	May support motivation
High cognitive anxiety	Excessive worry and negative thoughts	Reduced concentration
High somatic anxiety	Severe tension and physiological discomfort	Reduced coordination
Catastrophic anxiety response	Sudden loss of control under extreme pressure	Major performance decline
Anxiety with high confidence	Pressure managed through positive interpretation	Performance may be maintained

VI. COMPETITIVE ANXIETY AS A MEDIATOR BETWEEN TEMPERAMENT AND PERFORMANCE

One of the most important explanations for the relationship among the three variables is mediation. Athletic temperament may influence how athletes perceive competitive stress, and these perceptions may determine the intensity and interpretation of competitive anxiety. Competitive anxiety may then influence sports performance.

For example, an athlete with high emotional instability may interpret an important competition as a major threat. This interpretation may produce excessive cognitive anxiety, physiological tension, and reduced confidence. Attention may then shift away from task-relevant information, resulting in impaired decision-making and execution.

Conversely, an athlete with strong persistence and emotional regulation may interpret the same competition as a challenge. Physiological activation may be interpreted as excitement rather than danger. The athlete may therefore maintain confidence and concentration despite experiencing anxiety.

Recent research has examined more complex pathways between personality traits, competitive anxiety, stressors, and performance. One study involving competitive athletes reported that personality-related factors influenced performance through mediated pathways involving competitive anxiety and stress-related variables, supporting the importance of indirect psychological processes rather than simple direct relationships.

Table 4. Proposed Relationship Among Athletic Temperament, Competitive Anxiety, and Performance

Stage	Psychological process	Potential outcome
1	Athletic temperament shapes emotional reactivity	Different sensitivity to competitive pressure
2	Athlete interprets competition	Challenge or threat appraisal
3	Competitive anxiety develops	Cognitive and/or somatic activation
4	Anxiety is regulated or interpreted	Facilitative or debilitative response
5	Attention and confidence are affected	Improved or impaired task focus
6	Motor and tactical execution occurs	Variation in sports performance

VII. MODERATING FACTORS

The relationship among temperament, anxiety, and performance is influenced by several moderating variables.

1. Age and Experience

Experienced athletes may develop stronger coping strategies and become more familiar with competitive demands. A systematic review found that lower experience was among the athlete characteristics more robustly associated with competitive anxiety.

2. Gender

Gender-related differences in competitive anxiety have been reported, although these differences should not be interpreted as universal because sport type, competitive level, cultural expectations, and measurement approaches can influence results.



3. Type of Sport

Individual and team sports may create different psychological demands. Individual athletes may experience greater personal responsibility for outcomes, while team athletes may receive emotional support from teammates but also experience concerns about letting the group down.

4. Level of Competition

Elite competition involves greater public evaluation and higher consequences. However, elite athletes may also possess more advanced coping skills and greater experience with competitive pressure.

5. Coaching Climate

A highly controlling and punitive coaching environment may increase fear of mistakes and anxiety. A supportive mastery-oriented environment may encourage athletes to view mistakes as opportunities for improvement.

6. Social Support

Support from coaches, teammates, family members, and sport psychologists may reduce perceived stress and strengthen coping resources.

VIII. ASSESSMENT OF ATHLETIC TEMPERAMENT, COMPETITIVE ANXIETY, AND PERFORMANCE

The accurate assessment of these variables is essential for research and applied sport psychology. Temperament and personality can be assessed using standardized inventories based on established theoretical frameworks. Competitive anxiety is commonly assessed through sport-specific instruments measuring cognitive anxiety, somatic anxiety, and self-confidence.

Sports performance should ideally be measured through objective indicators such as competition rankings, scores, successful actions, accuracy, reaction time, or other sport-specific performance statistics. Self-reported performance measures may also provide useful information but can be influenced by subjective evaluation.

Table 5. Common Assessment Areas

Variable	Possible assessment focus	Examples of information obtained
Athletic temperament	Emotional reactivity and behavioral tendencies	Persistence, harm avoidance, emotional stability
Personality	Broad trait dimensions	Neuroticism, extraversion, conscientiousness
Competitive anxiety	Cognitive and somatic anxiety	Worry, tension, physiological activation
Self-confidence	Belief in competitive capability	Perceived readiness and control
Performance	Objective competitive outcomes	Scores, rankings, accuracy, success rate



Coping ability	Stress-management strategies	Emotional control and problem-focused coping
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IX. PRACTICAL IMPLICATIONS FOR COACHES AND SPORT PSYCHOLOGISTS

Coaches should recognize that athletes respond differently to the same competitive environment. A strategy that motivates one athlete may increase anxiety in another. Psychological preparation should therefore be individualized. Temperament and personality assessment may help identify athletes who are more vulnerable to excessive competitive anxiety. This information should not be used to label or exclude athletes. Instead, it can guide the development of individualized psychological interventions.

Athletes with high cognitive anxiety may benefit from cognitive restructuring, imagery, self-talk training, and attentional control techniques. Athletes with strong physiological anxiety responses may benefit from breathing exercises, progressive muscle relaxation, and routines that improve control over pre-competition arousal.

The goal should not always be the complete elimination of anxiety. Because some level of activation may be useful, psychological training should focus on helping athletes recognize, regulate, and interpret competitive anxiety effectively. Sport psychology frameworks emphasize that mental skills can contribute to performance by influencing attention, confidence, emotional regulation, and behavior under competitive pressure.

X. CONCLUSION

The relationship between athletic temperament, competitive anxiety, and sports performance is complex and multidimensional. Athletic temperament influences how athletes respond emotionally and behaviorally to competitive demands. Traits associated with emotional stability, persistence, discipline, and adaptive regulation may support effective competitive functioning, whereas high emotional reactivity and threat sensitivity may increase vulnerability to excessive anxiety.

Competitive anxiety can either facilitate or impair performance depending on its intensity, interpretation, timing, and the athlete's coping resources. Moderate and well-regulated activation may improve readiness and concentration, whereas excessive worry and physiological tension can interfere with attention, decision-making, coordination, and confidence. The available evidence suggests that temperament and personality characteristics should be considered alongside competitive anxiety when evaluating sports performance. Recent systematic evidence supports meaningful relationships between personality characteristics, anxiety, athlete characteristics, and performance, while also demonstrating substantial variation across sports and individuals.

Therefore, an integrated approach is recommended. Coaches and sport psychologists should assess relatively stable psychological tendencies, identify athletes who are vulnerable to maladaptive anxiety, and provide individualized interventions that strengthen emotional regulation, self-confidence, attentional control, and adaptive interpretations of competitive pressure. Such an approach can help athletes transform competitive anxiety from a potential barrier into a manageable component of high-level performance.

REFERENCES

1. Bhardwaj, M., & Devi, V. (2024). The impact of competitive anxiety on athletic performance: A comprehensive review. *International Journal of Physiology, Health and Physical Education*, 6(1), 102–105.
2. Craft, L. L., Magyar, T. M., Becker, B. J., & Feltz, D. L. (2003). The relationship between the Competitive State Anxiety Inventory-2 and sport performance: A meta-analysis. *Journal of Sport and Exercise Psychology*, 25(1), 44–65.



3. Dai, P., Chen, C., & Gu, M. (2026). The influence of athletes' personality traits on competition performance: The multiple mediating effects of competitive anxiety, perfectionism, and stressors. *Frontiers in Psychology*, 16, Article 1724618.
4. Gee, C. J. (2010). How does sport psychology actually improve athletic performance? A framework to facilitate athletes' and coaches' understanding. *Behavior Modification*, 34(5), 386–402.
5. Han, D. H., Kim, J. H., Lee, Y. S., Soo, J. B., Kim, H. J., Sim, M. Y., Sung, Y. H., & Lyoo, I. K. (2006). Influence of temperament and anxiety on athletic performance. *Journal of Sports Science & Medicine*, 5, 381–389.
6. Herinasari, N. N. V. (2025). Personality and competitive anxiety in athletes: A systematic literature review. *Majalah Ilmiah Fisioterapi Indonesia*, 13(3).
7. Jones, G. (1995). More than just a game: Research developments and issues in competitive anxiety in sport. *British Journal of Psychology*, 86(4), 449–478.
8. Jones, G., Hanton, S., & Swain, A. B. J. (1994). Intensity and direction dimensions of competitive state anxiety and relationships with performance. *Journal of Sports Sciences*, 12(6), 525–532.
9. Kuan, G., Wang, S., Liu, X., & colleagues. (2023). The influence of the five-factor model of personality on performance in competitive sports: A review. *Frontiers in Psychology*, 14, Article 1284378.
10. Lazarus, R. S. (2000). How emotions influence performance in competitive sports. *The Sport Psychologist*, 14(3), 229–252.
11. Martens, R., Vealey, R. S., & Burton, D. (1990). *Competitive anxiety in sport*. Human Kinetics.
12. Nicholls, A. R., Polman, R. C. J., & Levy, A. R. (2012). A path analysis of stress appraisals, emotions, coping, and performance satisfaction among athletes. *Psychology of Sport and Exercise*, 13(3), 263–270.
13. Ong, N. C. H., & Chua, J. H. E. (2021). Effects of psychological interventions on competitive anxiety in sport: A meta-analysis. *Psychology of Sport and Exercise*, 52, 101836.
14. Rocha, V. V. S., & Osório, F. L. (2018). Associations between competitive anxiety, athlete characteristics and sport context: Evidence from a systematic review and meta-analysis. *Archives of Clinical Psychiatry*, 45(3), 67–74.
15. Ruiz, M. C., & Hanin, Y. L. (2011). Perceived impact of anger on performance of skilled karate athletes. *Psychology of Sport and Exercise*, 12(3), 242–249.
16. Shuai, W., Wang, S., Liu, X., Kueh, Y. C., & Kuan, G. (2023). The influence of the five-factor model of personality on performance in competitive sports: A review. *Frontiers in Psychology*, 14, 1284378.
17. Tamminen, K. A., & Bennett, E. V. (2017). No emotion is an island: An overview of theoretical perspectives and narrative research on emotions in sport and physical activity. *Sport, Exercise, and Performance Psychology*, 6(3), 183–199.
18. Thomas, O., Mellalieu, S. D., & Hanton, S. (2008). Stress management in applied sport psychology. *Journal of Applied Sport Psychology*, 20(2), 209–239.
19. Woodman, T., & Hardy, L. (2003). The relative impact of cognitive anxiety and self-confidence upon sport performance: A meta-analysis. *Journal of Sports Sciences*, 21(6), 443–457.
20. Zeidner, M. (2014). *Anxiety in sport and performance*. In sport psychology research and practice perspectives on performance under pressure.

