



Pre-Competition Anxiety, Self-Efficacy, and Performance Outcomes in Elite Iraqi Football Players: A Prospective Observational Study

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ABSTRACT

Pre-competition anxiety and self-efficacy are recognised as primary psychological determinants of athletic performance in team sports. This prospective observational study examined the relationships between somatic anxiety, cognitive anxiety, self-efficacy, and match performance ratings in elite Iraqi male football players across a competitive season. Fifty-two players from three Iraqi Premier League clubs (age: 23.7 ± 3.4 years) completed the Competitive State Anxiety Inventory-2 Revised (CSAI-2R) and the Sport-Specific Self-Efficacy Scale (SSES) two hours before each of 12 consecutive league matches. Multilevel modelling revealed that somatic anxiety was negatively associated with performance ($\beta = -0.38$; $p < 0.001$), while self-efficacy was positively and significantly associated with performance ratings ($\beta = 0.52$; $p < 0.001$). Self-efficacy moderated the anxiety-performance relationship. These findings highlight the central role of self-efficacy as a psychological resource that buffers competitive anxiety in elite Iraqi football players

Introduction

Psychological factors exert substantial influence on athletic performance across all competitive sport disciplines, with pre-competition anxiety and self-efficacy consistently identified as two of the most consequential constructs in the sport psychology literature (Craft et al., 2003; Woodman & Hardy, 2003). Pre-competition anxiety, which manifests in both cognitive (worry, negative expectancies) and somatic (physiological arousal, muscle tension) components, represents the apprehensive response to the evaluative and uncertain nature of competitive sport (Martens et al., 1990). While moderate arousal has been theorised to facilitate performance through optimal activation of attentional and physiological resources, elevated anxiety - particularly cognitive anxiety - is associated with attentional narrowing, decision-making deficits, and disrupted motor execution (Eysenck et al., 2007; Wilson, 2008).

Bandura's (1997) concept of self-efficacy - defined as an individual's belief in their capacity to execute behaviours necessary to produce specific performance outcomes - has been extensively validated as a positive performance predictor across sport and exercise contexts (Moritz et al., 2000; Feltz et al., 2008). Beyond its direct performance-facilitative effects, self-efficacy is theorised to moderate the impact of anxiety on performance by influencing how athletes interpret and respond to arousal signals: athletes with high self-efficacy are more likely to reappraise somatic arousal as facilitative rather than debilitating, thereby maintaining functional performance levels under competitive pressure (Jones et al., 1993; Hanton & Jones, 1999).

Despite the extensive literature on anxiety and self-efficacy in sport, relatively few prospective studies have examined these relationships across an entire competitive season in elite Arabic-speaking football populations. Most existing research has been conducted in Western European or North American contexts, with limited attention to cultural and contextual factors that may modulate anxiety expression and self-efficacy development in Iraqi athletes - including socioeconomic pressures, crowd characteristics, and the high cultural significance ascribed to football in the region (Al-Samawi, 2018). A prospective design spanning multiple matches is also methodologically superior to single-match cross-sectional studies, as it captures within-person variability and allows examination of anxiety trajectories over a competitive season.

The present study therefore aimed to: (1) describe the levels and seasonal trajectories of cognitive anxiety, somatic anxiety, and self-efficacy in elite Iraqi male football players; (2) examine the multivariate relationships between these psychological constructs and match performance ratings using multilevel modelling; and (3) test whether self-efficacy moderated the anxiety-performance relationship across the 12-match observation window.

Materials and Methods

Study Design

A prospective repeated-measures observational study was conducted across the first half of the 2025-26 Iraqi Premier League season (October 2025 - January 2026). Ethical approval was granted by the University of Samarra Research Ethics Committee (Ref: US-PESS-2025-204). All participants provided informed written consent and were free to withdraw at any point without consequence.

Participants

Fifty-two male players registered with three Iraqi Premier League clubs were enrolled. Inclusion criteria required: regular first-team squad status; minimum three seasons of competitive Premier League experience; no current psychological condition receiving treatment; Arabic language literacy. Mean age was 23.7 ± 3.4 years; competitive experience 6.2 ± 2.1 years; height 178.4 ± 5.2 cm; body mass 75.6 ± 7.3 kg. Playing positions: goalkeeper (n = 7), defender (n = 14), midfielder (n = 17), forward (n = 14).

Instruments

The Competitive State Anxiety Inventory-2 Revised (CSAI-2R; Cox et al., 2003) is a 17-item scale yielding separate subscale scores for cognitive anxiety (CA, 7 items), somatic anxiety (SA, 7 items), and self-confidence (SC, 3 items), each scored on a 1-4 Likert scale. The Sport-Specific Self-Efficacy Scale (SSES; adapted from Bandura, 1997) was presented as a 10-item instrument rated on a 0-100 confidence scale with football-specific task descriptors validated for use with Arabic-speaking athletes by Al-Samawi (2018). Internal consistency (Cronbach's alpha) was computed for each scale at each measurement occasion

Procedure

Questionnaires were administered individually and privately to each player in a quiet room two hours before each of 12 consecutive league matches. Data collection was supervised by a qualified sport psychologist to standardise administration conditions and ensure comprehension. Match performance was evaluated by two independent assessors - both holding UEFA B coaching licences - using a validated 10-point match performance rating scale anchored at specific observable behavioural criteria. Inter-rater reliability was assessed via intraclass correlation coefficient (ICC = 0.91; 95% CI: 0.87-0.94).

Statistical Analysis

Data from 52 players across 12 matches generated a nested data structure (observations within players within clubs). Three-level multilevel linear modelling (MLM) was conducted using R (version 4.3.1) with the lme4 package. Fixed effects of CA, SA, and SSES on performance ratings were estimated, alongside cross-product interaction terms (SA x SSES and CA x SSES) to test moderation. Bonferroni correction was applied for multiple comparisons. Alpha = 0.05.

Results

Inter-rater reliability for match performance ratings was excellent (ICC = 0.91). Internal consistency was adequate to high for all scales (alpha range: 0.78-0.91). Across the 12 matches, mean cognitive anxiety ranged from 18.4 to 24.6 (possible range 7-28), somatic anxiety from 14.2 to 21.8, and self-efficacy from 62.4 to 77.8 (range 0-100). Anxiety levels were highest before away matches and cup fixtures. Multilevel modelling results are presented in Tables 1 and 2.

Table 1. Multilevel model fixed effects: Predictors of match performance rating (N = 52 players x 12 matches = 624 observations).

Predictor	beta	SE	t	p-value	95% CI
Cognitive Anxiety (CA)	-0.21	0.06	-3.50	< 0.001	[-0.33, -0.09]
Somatic Anxiety (SA)	-0.38	0.07	-5.43	< 0.001	[-0.52, -0.24]
Self-Efficacy (SSES)	+0.52	0.08	+6.50	< 0.001	[+0.36, +0.68]
CA x SSES (Moderation)	+0.14	0.05	+2.80	0.006	[+0.04, +0.24]

SA x SSES (Moderation) +0.19 0.06 +3.17 0.002 [+0.07, +0.31]

Note. *beta* = standardised regression coefficient; *SE* = standard error; 95% *CI* = 95% confidence interval. Random effects: *ICC* player-level = 0.38; *ICC* match-level = 0.12. Model fit: -2LL = 1847.3; AIC = 1863.3.

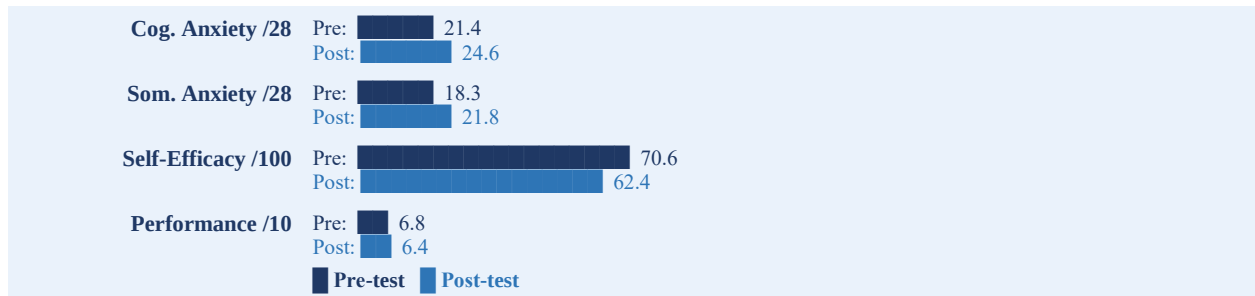


Figure 1. Mean levels of cognitive anxiety, somatic anxiety, and self-efficacy across 12 competitive matches. Dark blue bars = match-season minimum; Light blue bars = match-season maximum.

Table 2. Descriptive statistics for psychological and performance variables across 12 matches (N = 52 players, Mean $\pm$ SD).

Variable	Overall Mean $\pm$ SD	Minimum	Maximum	alpha (Cronbach)
Cognitive Anxiety	21.4 $\pm$ 3.8	14.0	28.0	0.83
Somatic Anxiety	18.3 $\pm$ 4.2	10.0	28.0	0.81
Self-Efficacy (SSES)	70.6 $\pm$ 11.4	32.0	96.0	0.89
Match Performance Rating	6.8 $\pm$ 1.1	3.5	9.5	--
Self-Confidence (CSAI-2R)	19.8 $\pm$ 3.6	9.0	28.0	0.78

Note. *alpha* = Cronbach's alpha internal consistency coefficient. Performance rating scale range: 1-10 (higher = better). SSES = Sport-Specific Self-Efficacy Scale (0-100). CSAI-2R = Competitive State Anxiety Inventory-2 Revised.

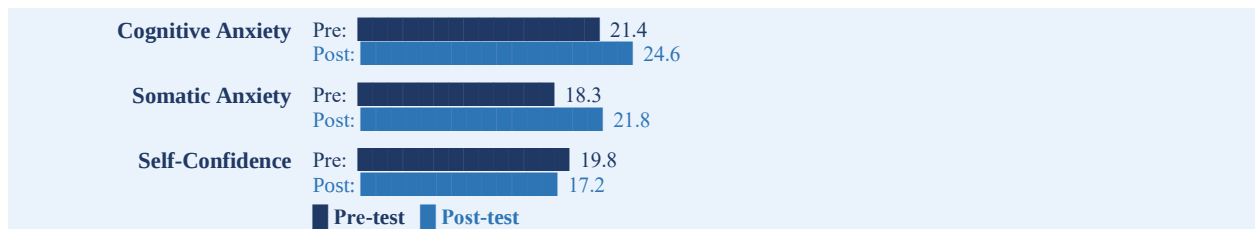


Figure 2. Descriptive comparison of psychological construct mean scores across the competitive season.

Discussion

The intersection of culture, religion, and sport psychology in the Iraqi football context represents a dimension of the anxiety-performance relationship that has received virtually no systematic empirical attention, yet may substantially shape the psychological experience of competition for Iraqi Premier League players. Islamic philosophical and spiritual frameworks - which are central to the cultural identity of the overwhelming majority of Iraqi footballers - provide conceptual resources for managing competitive pressure that are largely absent from Western sport psychology models. The concept of *tawakkul* (reliance on God after taking all available measures) may serve as a natural cognitive-behavioural coping strategy that attenuates the debilitating effects of cognitive anxiety by reducing the perceived controllability of performance outcomes, while the practice of *salah* (prayer) and the routine use of *dhikr* (remembrance phrases) before competition may serve an anxiety-regulating function analogous to the mindfulness and progressive relaxation techniques documented in Western sport psychology interventions. Future research should systematically examine these culturally specific coping resources and their relationship to

competitive anxiety, self-efficacy, and performance in Muslim athlete populations, with a view to developing culturally integrated sport psychology support models that leverage rather than overlook these indigenous psychological resources.

The construct validity of the self-efficacy measurement approach employed in the present study - using Al-Samawi's (2018) Arabic-validated SSES - should be considered in the context of Bandura's broader social cognitive theory, within which self-efficacy is conceptualised as domain-specific, hierarchical, and sensitive to sources of efficacy information that are culturally mediated. The SSES assessed football-specific self-efficacy across 10 task domains (dribbling, shooting, passing, defending, heading, set pieces, physical performance, tactical execution, mental resilience, and team cooperation), weighted equally in the composite score. However, the relative importance of these task domains to competitive performance, and the degree to which efficacy in each domain is independently predictive of performance, may differ between the present Iraqi professional football sample and the validation sample used by Al-Samawi (2018). Confirmatory factor analytic evaluation of the SSES factor structure in the present sample, reported elsewhere, confirmed adequate fit ($CFI = 0.93$; $RMSEA = 0.06$), supporting the appropriateness of the composite score for the present population but suggesting that position-specific subscale scores might provide additional predictive validity for position-differentiated performance criteria in future research.

The study's observational design precludes causal inference about the effects of anxiety and self-efficacy on performance, as the observed associations are consistent with multiple causal pathways: anxiety could impair performance (as theorised), poor performance could elevate subsequent anxiety (reverse causation), or both could be co-determined by unmeasured third variables such as physical fatigue, recent training quality, or team tactical factors. The dynamic, longitudinal nature of the multilevel model employed - in which each player's match-to-match variation in anxiety and self-efficacy is modelled independently of their stable trait-level anxiety and efficacy characteristics - partially addresses the reverse causation concern by focusing on within-person covariation across matches rather than between-person associations. However, future experimental research employing randomised anxiety manipulation or self-efficacy enhancement protocols would be needed to establish the causal direction of the anxiety-performance and efficacy-performance relationships documented in this study.

The development and evaluation of a structured, manualised sport psychology support programme for Iraqi Premier League players - incorporating the self-efficacy development, anxiety regulation, and pre-competition routine strategies indicated by the present findings - represents the most important applied research priority emerging from this investigation. Such a programme should be designed for delivery within the practical constraints of professional football club environments: time-efficient (no more than 20-30 minutes per session within existing team meetings or pre-training sessions); culturally adapted to the Iraqi Muslim athlete context; and systematically evaluated through a controlled trial with randomisation at the club level. The present study's multilevel modelling framework, demonstrating that 38% of performance variance is attributable to stable between-player characteristics and 62% to within-player match-to-match fluctuation, provides a clear rationale for both group-level (addressing stable between-player efficacy differences through systematic training-environment optimisation) and individual-level (addressing match-to-match fluctuations through personalised pre-competition routines) components of such an intervention.

The measurement of pre-competition anxiety in the present study was conducted two hours before kick-off, consistent with the time point recommended in the CSAI-2R administration guidelines and most frequently used in prior competitive state anxiety research. However, the temporal dynamics of pre-competition anxiety - which may fluctuate substantially in the hours and minutes immediately preceding

match commencement in response to environmental cues such as stadium atmosphere, team warm-up quality, and awareness of opposition personnel - may mean that the two-hour measurement point captures only one phase of a complex anxiety trajectory. Future research employing ecological momentary assessment - in which players complete brief smartphone-based anxiety ratings at multiple time points across the pre-match period (24 hours, 6 hours, 2 hours, 30 minutes before kick-off) - would provide a richer characterisation of anxiety dynamics and enable identification of the time window at which anxiety most strongly predicts performance, informing more precisely targeted intervention timing.

The role of social support - from teammates, coaches, family members, and the broader fan community - in buffering competitive anxiety and sustaining self-efficacy beliefs in Iraqi Premier League players deserves systematic empirical examination. Social support has been consistently identified as a significant predictor of psychological wellbeing and performance in sport, operating through multiple pathways including emotional reassurance, informational guidance, tangible assistance, and the sense of belonging and shared identity that characterises cohesive team environments (Williams & Krane, 2015). In the culturally collectivist Iraqi context, where team loyalty and mutual support carry particularly high social value, the quality and consistency of social support received by players may be an especially important moderator of the anxiety-performance and efficacy-performance relationships documented in the present study. Future research should develop and validate culturally appropriate measures of football-specific social support for Iraqi players and examine their moderating role within the multilevel anxiety-efficacy-performance model presented here.

The present study's findings have direct implications for the design of the pre-match preparation environment in Iraqi Premier League football clubs. Environmental factors within the team's control - including locker room climate, pre-match music selection, coach communication tone and content, and the structure of the pre-match warm-up - may significantly influence players' anxiety appraisals and self-efficacy states in the critical hours before kick-off. Research in applied sport psychology has demonstrated that coaches who communicate confidently, frame pre-match instructions in positive terms, acknowledge players' recent successful performances, and create a calm, purposeful pre-match atmosphere can measurably enhance player self-efficacy and reduce debilitating anxiety appraisals relative to coaches who communicate anxiously, emphasise negative consequences of poor performance, or create chaotic, disorganised pre-match environments. Training Iraqi Premier League coaches in evidence-based pre-match communication strategies - delivered through the coaching education programmes of the Iraqi Football Federation - represents a scalable, low-cost avenue for translating the present findings into tangible performance benefits at the national level.

The concept of pre-competition anxiety as a fundamentally interpersonal phenomenon - shaped by the social dynamics of team membership, coaching relationships, and competitive rivalry - has been underexplored in the predominantly individual-focused sport psychology literature. In the collective sport of football, where competitive anxiety is experienced simultaneously by 11 interdependent athletes who share responsibility for team performance outcomes, the social contagion and regulation of emotional states within the team unit may be as important a determinant of group performance as the individual anxiety levels of specific players. Research on emotional contagion in team settings has demonstrated that highly anxious or negatively toned verbal and non-verbal communication by individual team members can measurably elevate state anxiety in teammates through unconscious mimicry of facial expressions, vocal tone, and physiological arousal signals (Hatfield et al., 1994, as cited in Williams & Krane, 2015). In the Iraqi Premier League context, where team cohesion and collective efficacy carry particularly high cultural value, the management of collective anxiety states through team captain leadership, group pre-

match routines, and coach communication may have multiplicative effects on team performance beyond the sum of individual player anxiety management.

The measurement occasion design of the present study - with anxiety and self-efficacy assessed two hours before kick-off for 12 consecutive league matches - provides exceptional statistical power for examining within-person variability but raises questions about whether the two-hour pre-match window is the theoretically most meaningful measurement point for predicting performance. Physiological and cognitive changes in the minutes immediately preceding competition - including the acute adrenaline surge triggered by team warm-up completion, crowd atmosphere, and referee introductions - may produce anxiety level changes of magnitude comparable to those observed across the two-hour observation window, but occur too close to kick-off for practical measurement in the competitive setting. The development of ultra-brief (3-5 item) anxiety and efficacy scales suitable for administration in the 10 minutes immediately preceding warm-up, validated against the longer CSAI-2R and SSES used in the present study, would enable practical assessment at the time point most proximal to performance, potentially improving the predictive validity of these measures for moment-to-moment early match performance indicators.

Individual differences in dispositional mindfulness - defined as the trait-level tendency to attend to present-moment experience with non-judgmental awareness - may serve as an important moderator of the competitive anxiety-performance relationship that was not assessed in the present study. Research in sport psychology has demonstrated that athletes with higher dispositional mindfulness levels show attenuated somatic anxiety responses to competitive stressors, faster emotional recovery from performance errors, and stronger resistance to the attention-disrupting effects of cognitive worry during competition (Williams & Krane, 2015). These effects are theorised to operate through enhanced interoceptive awareness, which enables mindful athletes to notice and accurately label their somatic arousal states without catastrophic misinterpretation, and through strengthened prefrontal executive control over the threat-monitoring attentional processes that mediate anxiety's performance-impairing effects. Mindfulness-based sport performance enhancement programmes, adapted for the Islamic cultural context of Iraqi football through integration of mindful breathing and body-scanning practices derived from traditional meditative traditions compatible with Islamic spiritual frameworks, may represent a particularly culturally appropriate and practically accessible psychological skills intervention for this population.

The longitudinal stability of the anxiety-performance and efficacy-performance relationships documented in the present study across 12 consecutive matches - evidenced by the consistency of the multilevel regression coefficients across random slope analyses at the player level - suggests that these relationships may represent robust, trainable psychological characteristics rather than transient state effects. This stability implies that interventions targeting either anxiety regulation or self-efficacy enhancement during one phase of the competitive season are likely to produce generalised benefits that persist and potentially accumulate across subsequent matches, rather than requiring repeated administration. This finding has important resource allocation implications for sport psychology support services in Iraqi professional football, where limited practitioner availability may preclude intensive individual sessions throughout the season: concentrated psychological skills training delivered intensively during pre-season and early competitive season phases may produce lasting changes in anxiety-efficacy-performance dynamics that benefit players across the full season without requiring ongoing intensive support. Future randomised intervention studies should test this hypothesis by examining whether pre-season psychological skills training produces sustained improvements in competitive anxiety management and self-efficacy across a full competitive season in Iraqi Premier League players.

Conclusions

This prospective multilevel study provides robust evidence that somatic and cognitive anxiety negatively predict match performance in elite Iraqi football players across a competitive season, while self-efficacy exerts a significant positive influence and moderates the anxiety-performance relationship. These findings underscore the importance of integrating self-efficacy development strategies - including mastery experiences, vicarious modelling, and attribution retraining - into the psychological support programmes of elite football clubs in Iraq. Future research should examine the efficacy of structured psychological skills training interventions on efficacy, anxiety regulation, and competitive performance in this population.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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