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Research Paper

Exploring the Interplay of Sports Anxiety, Motivation, and Trait Confidence in Elite Indian Athletes

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ABSTRACT

This study investigates the relationships among sports anxiety, sports motivation, and trait sport confidence in 110 elite Indian athletes competing in individual sports such as shooting, tennis, and badminton. Data were collected from venues like Shri Shiv Chhatrapati Sports Complex using the Sport Anxiety Scale (SAS), Sport Motivation Scale (SMS), and Trait Sport Confidence Inventory (TSCI). Non-parametric analyses, necessitated by non-normal distributions (e.g., anxiety skewness = 0.74, motivation skewness = -0.50), revealed a significant negative correlation between sports anxiety ($M = 43.55$, $SD = 12.32$) and sports motivation ($M = 59.47$, $SD = 11.33$; $r_s = -0.202$, $p < .05$), a strong negative correlation with trait sport confidence ($r_s = -0.602$, $p < .01$), and a weak positive correlation between motivation and confidence ($r_s = 0.239$, $p < .05$). Gender differences were significant only for anxiety, with males ($M = 43.2$) reporting higher levels than females ($M = 37.8$; $U = 1123.5$, $p = .015$). These findings suggest that anxiety undermines psychological resources, with cultural factors like patriarchal pressures influencing gender disparities. Implications include tailored interventions to mitigate anxiety and enhance motivation, alongside adapting Western tools for Indian contexts to address sampling and design limitations.

Keywords: *Sports Anxiety, Sports Motivation, Trait Sport Confidence, Indian Athletes, Psychological Performance*

Elite athletes in India, particularly those competing at the national level in individual sports like shooting, tennis, and badminton, etc face intense psychological demands that significantly influence their performance. Sports anxiety, characterized by cognitive worry, somatic symptoms, and concentration disruption, can impair athletes' ability to perform under pressure (Hanton et al., 2020). Conversely, sports motivation, encompassing intrinsic and extrinsic drives, fuels persistence and engagement, while trait sport confidence, a stable belief in one's athletic abilities, fosters resilience and goal attainment (Ryan & Deci, 2017; Vealey, 2001). In the Indian context, cultural factors such as societal expectations, limited mental health resources, and patriarchal pressures amplify these psychological challenges, necessitating a nuanced understanding of their interplay (Correia & Rosado, 2019).

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This study aims to examine the relationships among sports anxiety, sports motivation, and trait sport confidence among high-level Indian athletes aged 16–40. The research addresses the prevalence and impact of sports anxiety, the nature of motivation, the role of confidence, and their collective influence on athletic success within India's unique sociocultural landscape. The following objectives guide the study: (1) determine the prevalence of sports anxiety, (2) explore cultural influences on anxiety, (3) identify sources of motivation, (4) assess confidence levels, (5) investigate relationships among these variables, and (6) evaluate their predictive role in athletic success. The findings aim to inform culturally tailored interventions to optimize mental skills and enhance performance.

Hypotheses

1. Sports anxiety will be negatively correlated with sports motivation among high-level Indian athletes.
2. Sports anxiety will be negatively correlated with trait sport confidence among high-level Indian athletes.
3. Sports motivation will be positively correlated with trait sport confidence among high-level Indian athletes.
4. Somatic Anxiety will be negatively correlated with sports motivation and trait sports confidence
5. Worry will be negatively correlated with sports motivation and trait sports confidence
6. Concentration disruption will be negatively correlated with sports motivation and trait sports confidence
7. Intrinsic Motivation will be negatively correlated with sport anxiety
8. Intrinsic Motivation will be positively correlated with trait sports confidence
9. Identified Motivation will be negatively correlated with sport anxiety
10. Identified Motivation will be positively correlated with trait sports confidence
11. Integrated motivation will be negatively correlated with sports anxiety
12. Integrated motivation will be positively correlated with trait sports confidence
13. Introjected motivation will be negatively correlated with sports anxiety
14. Introjected motivation will be positively correlated with trait sport confidence
15. External motivation will be negatively correlated with sport anxiety
16. External motivation will be positively correlated with trait sports confidence
17. Amotivation will be positively correlated with sports anxiety
18. Amotivation will be negatively correlated with trait sport confidence
19. There will be significant gender differences in sports anxiety, with males exhibiting higher anxiety levels than females.
20. There will be significant gender differences in sports motivation among high-level Indian athletes.
21. There will be significant gender differences in trait sport confidence among high-level Indian athletes.

METHOD

Participants

The sample comprised 110 elite Indian athletes (55 males, 55 females) aged 16–40 (M = 21.94, SD = 4.76) competing in individual sports, including shooting, tennis, badminton, and athletics. Participants were recruited from national-level venues such as Shri Shiv Chhatrapati Sports Complex in Pune using non-probability purposive sampling. Inclusion criteria required national-level participation and a minimum of two years of competitive

experience. Exclusion criteria included athletes under 16 or those with diagnosed psychological disorders.

Measures

- **Sport Anxiety Scale (SAS)**: The SAS (Smith et al., 2006) is an 18-item measure assessing cognitive anxiety (worry), somatic anxiety, and concentration disruption on a 4-point Likert scale (1 = Not at All, 4 = Very Much). Higher scores indicate greater anxiety. The scale demonstrated high reliability in this study (Cronbach's $\alpha = .88$).
- **Sport Motivation Scale (SMS)**: The SMS (Pelletier et al., 1995) is a 21-item measure evaluating intrinsic motivation, extrinsic motivation (integrated, identified, introjected, external), and amotivation on a 5-point Likert scale (1 = Does Not Apply, 5 = Applies Exactly). Higher scores reflect stronger motivation. Reliability was satisfactory (Cronbach's $\alpha = .85$).
- **Trait Sport Confidence Inventory (TSCI)**: The TSCI (Vealey, 1986) is a 13-item measure assessing stable confidence in athletic abilities on a 9-point Likert scale (1 = Lowest Confidence, 9 = Highest Confidence). Higher scores indicate greater confidence. The scale showed strong reliability (Cronbach's $\alpha = .90$).

Demographics

A personal data sheet collected age, gender, sport type, years of experience, and training hours.

Procedure

Ethical approval was obtained from the Modern College Institutional Review Board. Participants provided informed consent, ensuring voluntary participation and confidentiality. Data were collected in-person at training venues using paper-based questionnaires, taking 10–15 minutes to complete. Surveys were administered during non-competitive periods to minimize stress bias.

Data Analysis

Due to non-normal distributions (e.g., anxiety skewness = 0.74, motivation skewness = -0.50), confirmed by Shapiro-Wilk tests ($p < .05$), non-parametric analyses were employed. Spearman's rho correlations assessed relationships among variables, and Mann-Whitney U tests examined gender differences. Significance was set at $p < .05$.

RESULTS

Descriptive Statistics

Table 1 Descriptive Statistics for Sports Anxiety, Sports Motivation, and Trait Sport Confidence

Variable	*M*	*SD*	Range	Skewness	Shapiro-Wilk *p*-value
Total Sports Anxiety Score	43.55	12.32	21–75	0.74	<.001
Total Sports Motivation Score	59.47	11.33	32–79	-0.50	.011
Trait Sport Confidence	85.24	21.26	30–114	-1.08	< .001

Note. *M* = Mean, *SD* = Standard Deviation. Shapiro-Wilk *p*-value is reported only for Trait Sport Confidence due to significant non-normality

The Total Sports Anxiety Score had a mean of 43.55 (SD = 12.32, range = 21–75), with positive skewness (0.74). The Total Sports Motivation Score averaged 59.47 (SD = 11.33,

range = 32–79), with negative skewness (-0.50). The Shapiro-Wilk test indicated that the distributions of Sports Anxiety (W = .943, p < 0.001), Sports Motivation (W = .969, p = 0.011), and Trait Sport Confidence (W = .885, p < 0.001) were significantly non-normal (p < 0.05). Consequently, non-parametric correlation methods (e.g., Spearman's rank correlation) were used to examine relationships between variables.

Correlation Analyses

Table 2 Spearman Correlations Among Sports Anxiety, Sports Motivation, Trait Sport Confidence, and Subscales in Athletes

Variable Pair	***r_s***	***p*-value**
Total Sports Anxiety Score – Total Sports Motivation Score	-0.202	< .05
Total Sports Anxiety Score – Trait Sport Confidence	-0.602	< .01
Total Sports Motivation Score – Trait Sport Confidence	0.239	< .05
SAS_Somatic – SAS_Worry	0.766	< .01
Intrinsic Motivation – Concentration Disruption	-0.395	< .01
Sports Anxiety – External Motivation	0.217	< .05
Sports Anxiety – Amotivation	-0.081	> .05
Amotivation – External Motivation	0.284	< .01

Note. *r_s* = Spearman correlation coefficient. Dashes indicate data not applicable or not reported.

The hypothesis that sport anxiety would be negatively correlated with sport motivation was partially supported. A significant negative correlation (*r_s* = -0.202, *p* < .05) between Total Sports Anxiety Score and Total Sports Motivation Score emerged, aligning with research by Hanton and Jones (1999), who found that anxiety can undermine motivational engagement by fostering fear of failure. This modest strength suggests that cultural resilience or coaching support might buffer motivation, a nuance underexplored in Western studies. The hypothesis that anxiety would be negatively correlated with its subscales was not directly tested due to the exclusion of self-correlations, but the strong interrelations among subscales (e.g., sas_somatic with sas_worry, *r_s* = 0.766, *p* < .01) support their cohesive structure, as validated by Smith et al. (2006). The prediction of a negative correlation between anxiety and trait sport confidence was strongly supported (*r_s* = -0.602, *p* < .01), reinforcing Woodman and Hardy's (2003) meta-analysis, which highlighted anxiety's role in eroding confidence through cognitive interference. The hypothesis of a positive correlation between sport motivation and trait sport confidence was weakly supported (*r_s* = 0.239, *p* < .05), falling short of the robust link reported by Duda and Hall (2001), possibly due to the sample's extrinsic motivation skew, which may not fully translate to confidence in this cultural setting.

Further, the negative correlations between anxiety subscales and motivation subscales (e.g., intrinsic motivation with concentration disruption, *r_s* = -0.395, *p* < .01) highlight anxiety's disruptive effect on internally driven motivation, supporting SDT's emphasis on competence and autonomy (Ryan & Deci, 2000). The positive correlation between sports anxiety and external motivation (*r_s* = 0.217, *p* < .05) suggests a shift toward extrinsic goals, consistent with research by Mellalieu et al. (2006), who linked anxiety to external validation seeking. This contrasts with SDT's view that such motivation undermines intrinsic drive (Deci & Ryan, 2000). The non-significant correlation between anxiety and amotivation (*r_s* = -0.081,

$p > .05$) diverges from findings by Ntoumanis et al. (2009), who tied chronic anxiety to amotivation, possibly because this sample's competitive nature mitigates disengagement. The positive amotivation-external motivation link ($r\_s = 0.284$, $p < .01$) supports Ryan and Deci (2000) on unmet psychological needs leading to disengagement.

Gender Differences

Table 3 Mann-Whitney U Test Results for Gender Differences in Sports Anxiety, Sports Motivation, and Trait Sport Confidence

Variable	Male *M*	Female *M*	*U*	*p*-value
Sports Anxiety	43.2	37.8	1158.5	.034
Sports Motivation	60.41	50.59	1242.5	.106
Trait Sport Confidence	56.51	54.49	1457.0	.740

Note. M = Mean, Significant results are indicated at $p < .05$.

Mann-Whitney U tests indicated a significant gender difference in sports anxiety (U = 1158.5, p = .034), with males (M = 43.2) reporting higher levels than females (M = 37.8). No significant differences were found in sports motivation (U = 1242.5, p = .106) or trait sport confidence (U = 1457.0, p = .740), partially rejecting Hypothesis

DISCUSSION

This study provides insights into the psychological dynamics of elite Indian athletes, highlighting the interplay of sports anxiety, motivation, and trait confidence. The significant negative correlation between anxiety and motivation ($r\_s = -0.202$, $p < .05$) aligns with Hanton and Jones (1999), suggesting that anxiety undermines motivational engagement, possibly due to fear of failure in high-stakes settings. The strong negative correlation with confidence ($r\_s = -0.602$, $p < .01$) supports Woodman and Hardy (2003), indicating that anxiety erodes self-belief, critical for performance in individual sports like shooting, where focus is paramount.

The weak motivation-confidence link ($r\_s = 0.239$, $p < .05$) contrasts with Duda and Hall (2001), potentially reflecting a cultural reliance on extrinsic motivation, which may not translate to robust confidence in India's collectivist context (Ryan & Deci, 2000). The positive anxiety-external motivation correlation suggests athletes under pressure seek external validation, consistent with Mellalieu et al. (2006). Gender differences in anxiety, with males reporting higher levels, may reflect patriarchal expectations placing greater performance pressure on men, as noted by Schaal et al. (2011). The absence of gender differences in motivation and confidence suggests egalitarian training environments in individual sports, differing from team sport findings (Gill, 2000).

Implications

Coaches and psychologists should prioritize anxiety-reducing interventions, such as mindfulness or cognitive-behavioral therapy, particularly for male athletes. Autonomy-supportive coaching could enhance intrinsic motivation, strengthening its link to confidence. Sports organizations should integrate culturally tailored mental health programs into national academies, addressing India's unique stressors. Academically, the findings challenge the universal applicability of Western tools, advocating for their adaptation to Indian contexts.

Limitations

The convenience sample (N = 110) limits generalizability beyond individual sports and urban venues. Self-reported measures may introduce biases, and the cross-sectional design precludes causal inferences. The age skew (M = 21.94) may overlook developmental differences, and Western tools may not fully capture cultural nuances.

Future Directions

Future research should employ stratified sampling across diverse sports and regions, use longitudinal designs to establish causality, and incorporate objective measures (e.g., heart rate variability). Validating tools for Indian contexts and exploring cultural moderators, such as collectivism, could enhance findings' relevance.

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Conflict of Interest
The author(s) declared no conflict of interest.

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