



A comparative study of competitive state anxiety among individual and team sports athletes

Dr. Mahendra Pratap Gaur

Associate Professor, Department of Physical Education, D.A.V., Degree College, Lucknow, Uttar Pradesh, India

Abstract

Study Aim: The study aims to compare the levels of competitive state anxiety, focusing on somatic anxiety, between athletes from individual sports and team sports.

Material and Methods: A total of 120 athletes participated in the study, divided equally into two groups: individual sports (Athletics and Archery) and team sports (Volleyball and Hockey). The Competitive Sport Anxiety Inventory-2 (CSAI-2), a standardized tool, was used to assess somatic anxiety levels.

Statistical Techniques: Data were analyzed using independent sample t-tests to determine if there were significant differences in anxiety levels between the two groups.

Results: The results showed no significant difference in somatic anxiety levels between individual and team sport athletes ($t = -0.6303$, $p > 0.05$).

Conclusions: Both individual and team sport athletes exhibited similar levels of somatic anxiety, suggesting that the type of sport may not influence this specific dimension of competitive state anxiety.

Keywords: Competitive state anxiety, somatic anxiety, individual sports, team sports, CSAI-2

Introduction

Competitive state anxiety is a psychological response experienced by athletes during competitions, characterized by feelings of nervousness, tension, and unease. Somatic anxiety, one of its core dimensions, refers to the physiological manifestations of anxiety, including increased heart rate, muscle tension, and feelings of discomfort (Martens *et al.*, 1990) ^[7]. This anxiety plays a significant role in athletic performance, as it can influence both cognitive and physical aspects of performance (Kreitler & Kreitler, 2017) ^[5]. While much research has explored the relationship between competitive anxiety and performance, there remains limited evidence comparing somatic anxiety levels in athletes from individual and team sports.

Athletes in individual sports, such as athletics and archery, often face distinct psychological pressures. These athletes are solely responsible for their performance outcomes, which can increase feelings of tension and fear of failure (Lazarus & Folkman, 1984) ^[6]. The solitary nature of these sports means that athletes have to bear the emotional burden on their own, possibly contributing to higher somatic anxiety levels compared to athletes in team sports (Ryska, 2002) ^[9]. Conversely, athletes in team sports, such as volleyball and hockey, share performance responsibilities with teammates, which may help buffer the impact of anxiety (Schneider *et al.*, 2011) ^[10]. However, the dynamic and often high-pressure environment of team sports may still provoke significant somatic anxiety (Hanton *et al.*, 2004) ^[3].

The role of social support and interpersonal interactions in reducing or exacerbating anxiety is well documented in the literature. In team sports, athletes benefit from the collective support of teammates and coaches, which may help alleviate anxiety by fostering a sense of shared responsibility (Reeves *et al.*, 2007). On the other hand, individual athletes must rely solely on their own mental strategies to manage anxiety, which may lead to heightened somatic symptoms (Gould *et al.*, 2002) ^[11]. Despite these potential differences in the social context of the two sport types, research findings comparing somatic anxiety between individual and team athletes are mixed.

Some studies suggest that team athletes experience higher levels of somatic anxiety due to the additional pressures of group performance and the fear of letting down teammates (Stewart *et al.*, 2009). Others, however, report that individual athletes experience more pronounced somatic anxiety, likely due to the personal nature of competition (Jones *et al.*, 2005) ^[4]. Understanding these differences is crucial for designing effective psychological interventions tailored to the specific needs of athletes across different sport settings (Gould *et al.*, 2006) ^[6]. The present study aims to compare somatic anxiety levels between athletes in individual sports (athletics and archery) and team sports (volleyball and hockey), utilizing the Competitive Sport Anxiety Inventory-2 (CSAI-2) developed by Martens (1990) ^[7]. The study will determine whether there are significant differences in somatic anxiety between the two groups of athletes, hypothesizing that sport type may not significantly influence somatic anxiety levels. Such findings could inform future anxiety management programs tailored to athletes in both individual and team sports.

Selection of subjects

Individual Sports (IS)	Athletics	Archery
[N=60]	[n ₁ =30]	[n ₂ =30]
Team Sports (TS)	Volleyball	Hockey
[N=60]	[n ₃ =30]	[n ₄ =30]

Procedures for selecting the sample

The sample size was calculated using G*Power version 3.1.9.7, ensuring adequate statistical power for meaningful comparisons.

Selection of variables

A feasibility analysis was conducted to identify relevant variables, considering factors like tool accessibility, sample size, and research goals. Experts recommended focusing on somatic anxiety, a critical component of competitive state anxiety.

Criterion measures

The Competitive Sport Anxiety Inventory-2 (CSAI-2), developed by Rainer Martens in 1990, was used to measure somatic anxiety levels.

The psychological tools

Variables	Tools	Author's	Year
Competitive Sport Anxiety	Competitive Sport Anxiety Inventory-2	Rainer Martens	1990

Sampling technique

The convenience sampling method was used to recruit participants. While this method is less precise, it is cost-effective and practical for research with limited resources.

Statistical techniques

Independent sample T-tests were conducted to compare somatic anxiety levels between individual and team sport athletes. A significance level of $p \leq 0.05$ was set for the analysis.

Results

Table 1: t-test summary for psychological tools

Statistic	Individual Sports	Team Sports
Mean	29.35	29.7833
Variance	14.1275	14.2364
Stand. Dev.	3.7587	3.7731
n	60	60
t	-0.6303	
d.o.f	118	
critical value	1.98	
t < critical value	⇒ no sig. diff.	

The absolute value of the calculated t is smaller than critical value ($0.6303 < 1.98$), so the means are not significantly different.

Conclusions

The study concludes that somatic anxiety levels are comparable between individual and team sport athletes. This suggests that the type of sport may not have a significant impact on physiological symptoms of anxiety. Coaches and sports psychologists can use these findings to develop generalized anxiety management strategies applicable across both individual and team sports.

Conflict of Interest: The authors declare that there is no conflict of interest.

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