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Difference of rational between individual and team sports: A comparative scrutiny

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Abstract

Study Aim: The aim of this study was to find out the significant difference of rational between individual and team sports.

Materials and Methods: A total of 620 male subjects between the age group of 18-25 years participated in this cross-sectional research. The participants were members of the Individual Sports (*viz.*, Athletics, Archery, Gymnastics, Badminton & Chess) and Team Sports (*viz.*, Cricket, Basketball & Volleyball). Decision Making Style questionnaire constructed by Scott and Bruce (1995) was used to measure rational.

Statistical Technique: Unpaired t-test was employed for the present investigation.

Results: There were significant differences ($0.0001 < 0.05$) in scores for individual sports ($M = 20.5258$, $SD = 2.2807$) and team sports ($M = 21.3484$, $SD = 2.5188$).

Keywords: Rational, athletics, archery, gymnastics, badminton, chess, cricket, basketball, volleyball

Introduction

The psychology of sports and physical exercise is a scientific discipline that focuses on the study of people behaviors in the context of sports and physical activities ^[1]. Sports psychological interventions have proven to be important over the years given the positive impact that they have on wellbeing and the optimization of sports performance ^[2, 3]. Sports psychology is recognized as an interdisciplinary science that draws on knowledge from many related fields including biomechanics, physiology, kinesiology and psychology. It involves the study of how psychological factors affect performance and how participation in sports and exercise affect psychological and physical factors. Sports psychologists teach cognitive and behavioral strategies to athletes in order to improve their experience and performance in sports ^[4]. Research has shown that sports psychology can significantly impact on college athletes' athletic performance and mental health. One study found that athletes who received cognitive skills training improved confidence, focus, and overall performance ^[5]. Another study found that Study on decision-making in sports has received increasing attention by sports scientists during the last decade ^[6]. Decision-making is the use of information provided by one's current situation combined with one's ability to apply their knowledge about the situation to plan, select, and execute an appropriate goal-directed action or set of actions ^[7]. Decision-making is also considered as the capability of players to choose functional actions from a vast number of possible actions that emerge from the environment to achieve a specific goal ^[8]. Thus, accurate decision-making has been identified as an important factor for successful performance in team sports ^[9]. Decisions making is an essential component of all sports. Stress under pressure causes a breakdown in the mental representation network and disruption in the perceptual-cognitive-motor linkage in athletes. Furthermore, in the circumstances of When under emotional or time pressure, the perceptual-cognitive system stops working properly, increasing the likelihood that a mistaken judgment would be made. Highlights three characteristics of decision-making in the field of sports ^[10].

Material and Methods

Participants

A total of 620 male subjects between the age group of 18-25 years participated in this cross-sectional research. The participants were members of the Individual Sports (*viz.*, Athletics, Archery, Gymnastics, Badminton & Chess) and Team Sports (*viz.*, Cricket, Basketball & Volleyball). The following universities were selected for the purpose of this investigation.

1. Guru Nanak Dev University, Amritsar
2. Punjabi University, Patiala

3. Panjab University, Chandigarh
4. Lovely Professional University, Phagwara

Procedures for Selecting the Sample

We used the G*Power 3.1.9.4 software to estimate the sample size, considering a model for repeated intra and intergroup measures in two groups (Tall (s) One, ratio $N_2/N_1=1$, α err Prob=0.2, Effect size (-0.2). The estimated sample size was three hundred ten individuals in each group (Individual and Team sports). Therefore, six hundred and twenty subjects were selected.

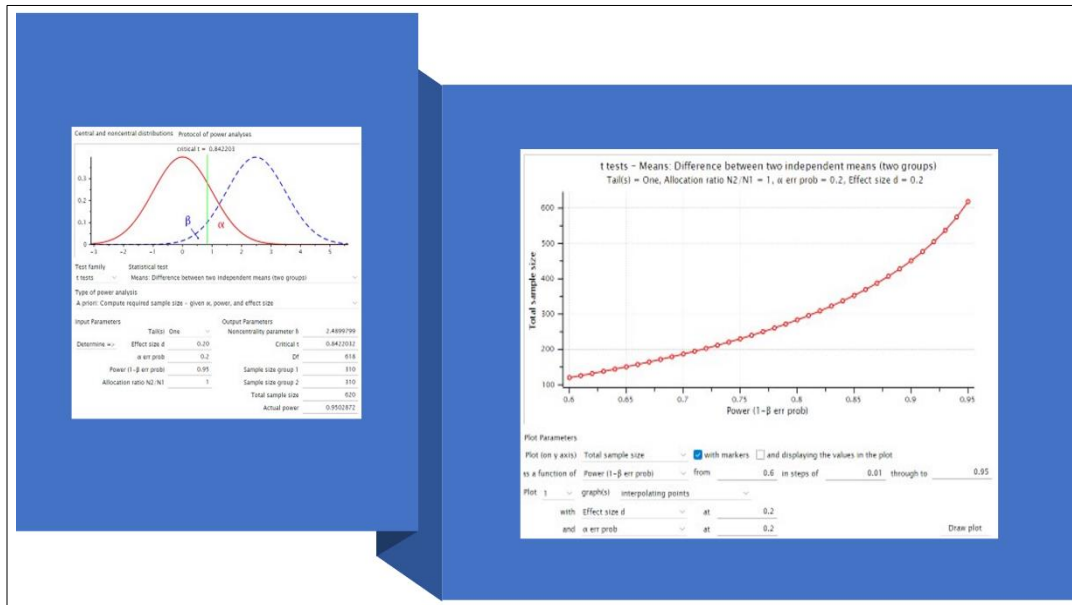


Fig 1: G*Power 3.1.9.4 software to estimate the sample size

Research Design

This is an exploratory study that has employed method of data collection and analysis quantitatively with the aim to

find out the significant differences between Individual and Team Sports on the variable, Rational.

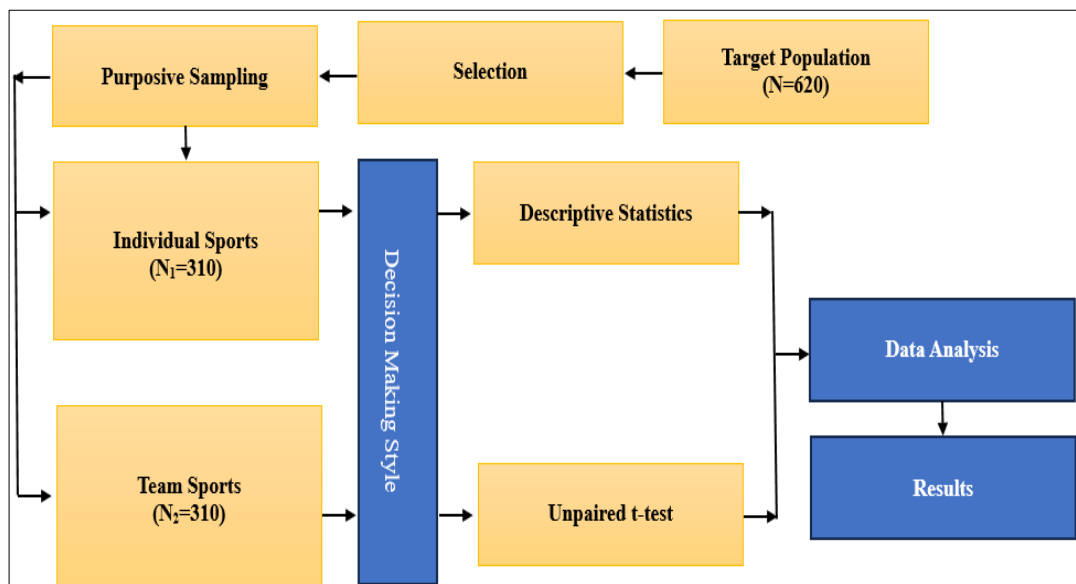


Fig 2: The study designs

Statistical Analysis

G*Power version 3.1.9.7 was used to analyze the power and to compute sample size with graphics options. Under the data analysis, exploration of data was made with descriptive statistics and graphical analysis. Unpaired t-test was

employed for the present investigation. The SPSS (statistical package for the social sciences) version 20.0 was used for all analyses. For testing the hypotheses, the level of significance was set at 0.05.

Results

Table 1: Descriptive statistics and independent samples t-test result comparing individual sports and team sports on rational

Rational		
	Individual Sports	Team Sports
Sample size	310	310
Arithmetic mean	20.5258	21.3484
95% CI for the mean	20.2709 to 20.7807	21.0669 to 21.6299
Variance	5.2016	6.3443
Standard deviation	2.2807	2.5188
Standard error of the mean	0.1295	0.1431
Mean Difference	0.8226	
Pooled Standard Deviation	2.4027	

Standard Error	0.1930
95% CI of difference	0.4436 to 1.2016
Test statistic t	4.262
Degrees of Freedom (DF)	618
P value	0.0001

An independent-samples t-test was conducted to compare the rational for individual sports and team sports. There were significant differences ($0.0001 < 0.05$) in scores for individual sports ($M=20.5258$, $SD=2.2807$) and team sports ($M=21.3484$, $SD=2.5188$).

The magnitude of the differences in the means (mean difference = 0.8226, 95% CI: 0.4436 to 1.2016) was significant.

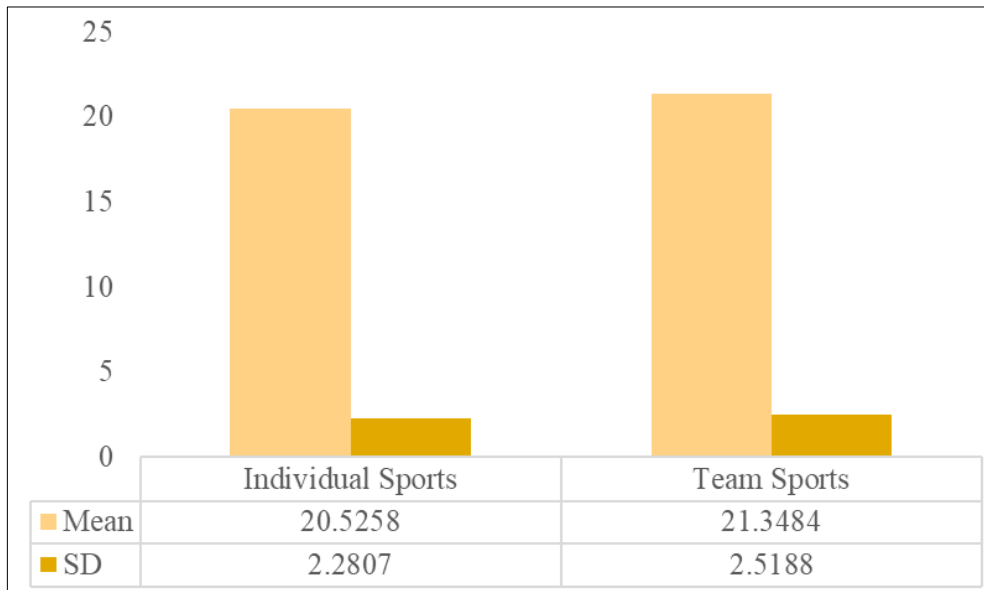


Fig 3: Mean scores for individual sports and team sports on rational

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Conflict of interest

The authors declare no conflicts of interest.

Conclusions

This study highlights the significant role of sports psychology in enhancing athletic performance and mental health. It underscores the importance of cognitive and behavioral strategies taught by sports psychologists. The findings also emphasize the critical role of decision-making in sports performance, particularly under stress. The research demonstrated significant differences between individual and team sports in rational decision-making, with team sports showing higher scores. These insights can inform interventions aimed at optimizing performance and wellbeing in athletes across different sports disciplines.

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