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Dr. Baljinder Singh Bal

Associate Professor, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Vipan Kumar

Assistant Professor, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Baldeena D Khokhar

Assistant Professor, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Pankaj Kumar

Research Scholar, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Gurjit Singh

Assistant Professor, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Suchitra Senapati

Research Scholar, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Vikramjeet

Research Scholar, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

Corresponding Author:

Dr. Baljinder Singh Bal

Associate Professor, Department of Physical Education, Guru Nanak Dev University, Amritsar, Punjab, India

The study of memory between individual and team sports

Dr. Baljinder Singh Bal, Vipin Kumar, Baldeena D Khokhar, Pankaj Kumar, Gurjit Singh, Suchitra Senapati and Vikramjeet

Abstract

Study Aim: The aim of this study was to find out the significant difference of memory between individual and team sports. **Material 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). The Social Intelligence Scale, developed in 1986 by Ms. Usha Ganesan and N.K. Chadda, was used to assess memory. **Statistical Technique:** Unpaired t-test was employed for the present investigation. **Results:** There were no significant differences ($0.4137 > 0.05$) in scores for individual sports ($M = 9.7903$, $SD = 1.6403$) and team sports ($M = 9.8839$, $SD = 1.1684$).

Keywords: Memory, individual sports, team sports, athletics, archery, gymnastics, badminton, chess, cricket, basketball & volleyball

Introduction

Sports psychology deals with the behaviour of the sportspersons in learning, practice and competitive situations with the view to improve performance. In sports psychology we study the behaviour of the people related to sports. In this the psychologist tries to understand various psychological and mental factors that affect the sports performance of an individual [1]. Many studies compare athletes with non-athletes in terms of psychological well-being. Low levels of stress and anxiety, positive affectivity, less somatic and depressive symptoms, high levels of self-confidence and effective coping strategies were the commonly examined psychological variables that predict the psychological well-being [2]. In a world where many athletes are physically, technically and tactically increasingly similar, it is the mind which offers perhaps the greatest scope for a competitive advantage [3]. Advances in the science of sport performance increasingly demonstrate the importance of integrating mental attitude and physical skills [4]. Such empirical evidence has led to the development of sport psychology as an integral aspect of coaching and health care for teams and athletes [5]. Sport psychology can help an athlete to perform at a level closer to their absolute potential on any given day and this has seen a marked increase in the number of sport psychology consultants working with athletes [6]. Despite the apparent acceptance of the sport psychologist as a member of the 'team behind the team', receptiveness among athletes to sport psychology varies [7]. Furthermore, the Memory is one of the most important cognitive domains with respect to everyday function and is the process of storing, encoding, and retrieving information. Different forms of memory are recognized, including sensory, short-term, long-term, and working memory [8]. Psycho physiological properties are closely related to cognitive abilities. This connection is manifested through sensory systems. Therefore, the function of short-term visual memory is of particular importance in the structure of the preparedness of athletes [9]. It is well-known that exercise is associated with a reduction in physiological measures of stress, psychological measures of anxiety and depression, and elevations in mood states and psychological well-being [10]. Physical exercise and sport also produce positive effects on arousal, improve attention generally improve cognitive performance with effect size being larger in children than in adults and central high-level cognitive processes memory [11].

Memory storage processes were also facilitated by cognitive activation, increasing arousal and allocatable resources induced by specific acute exercise demands [12].

Materials 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.

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, Memory.

Statistical Analysis

The normality of the data was checked by using the Shapiro-wilk test of normality. 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 memory

Memory		
	Individual Sports	Team sports
Sample size	310	310
Arithmetic mean	9.7903	9.8839
95% CI for the mean	9.6070 to 9.9736	9.7533 to 10.0144
Variance	2.6905	1.3651
Standard deviation	1.6403	1.1684
Standard error of the mean	0.09316	0.06636
Mean Difference	0.09355	
Pooled Standard Deviation	1.4240	
Standard Error	0.1144	
95% CI of difference	0.1311 to 0.3182	
Test statistic t	0.818	
Degrees of Freedom (DF)	618	
P value	0.4137	

An independent-samples t-test was conducted to compare the memory for individual sports and team sports. There were no significant differences ($0.4137 > 0.05$) in scores for individual sports ($M = 9.7903$, $SD = 1.6403$) and team sports ($M = 9.8839$, $SD = 1.1684$).

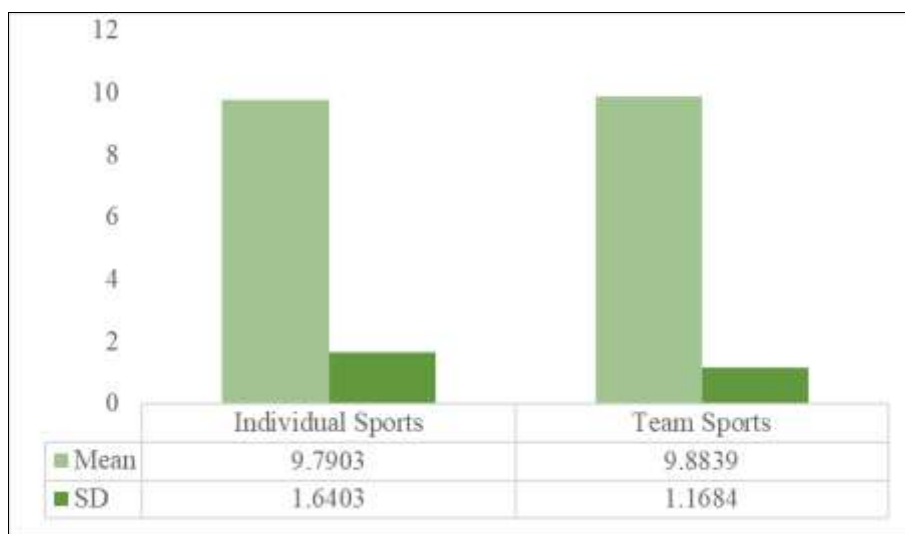


Fig 1: Mean scores for individual sports and team sports on memory

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Conflict of interest

The authors declare no conflicts of interest.

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