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## A comparative study of problem solving skills in elite and sub-elite players

**Karmishtha Shambharkar and CD Agashe**

### Abstract

The objective of the present study was to compare problem solving ability of elite and sub-elite players. To conduct the study, 50 elite male players from various sports (Ave. age 26.50 years) were selected as sample. The selection of elite male players were done from only those sportspersons who took part in national level individual and team events as well as who came in first four positions in these event. To fulfil the objectives of the study, 50 intercollegiate male sportspersons (Average age 21.09 years) from various sports events were also selected as sample and termed as sub-elite players. Purposive sampling was used for selection of subjects. Hindi version of problem solving ability scale prepared by Sharmila and Naga Subramani (2011) was used to assess problem solving ability of elite and sub-elite male players. Results indicate that problem solving ability in elite male players was found to be significantly superior as compared to sub elite male players. It was concluded that elite players are more adept at solving on and off the court problem as compared to sub-elite players.

**Keywords:** Elite, sub-elite, problem solving ability

### Introduction

Multitasking is an important aspect in sporting field. It involves brain activity while constantly on the move, anticipate and make strategies. In this sense information processing is key to success in sports. The executive functions of brain involve reasoning, problem solving and channelizing movements. In these functions problem solving is one of the most important aspect. In general terms problem solving consists of finding, analysing and ultimately solving the problem. It is a mental process that finds a solution to a situation which is an obstacle in executive certain task or achieving desired goals. It is even more important in competitive sports because a player needs a solution for his/her technical, tactical, psychological flaws for betterment of performance.

Researchers such as Trepanier (2000) [1], Goudarzi (2005) [2], Hasankhoie (2006) [3], Neil *et al.* (2006) [4], Kruger (2010) [5], Patel *et al.* (2011) [6], Soltani *et al.* (2012) [7], Esfahani and Ghezelseflo (2013) [8], Mohammadzadeh and Sami (2014) [9], identified various mental, physical, physiological, technical and tactical factors that contribute to sporting success. Despite extensive research on factors that contribute to sporting success problem solving ability of elite players has not been explored so far. To fill this void, the present study was planned to assess problem solving ability of elite and sub-elite players.

### Hypothesis

It was hypothesized that problem solving ability in a group of elite and sub-elite players will differ significantly.

### Method

To test the abovementioned hypothesis, following methodological steps were taken.

### Sample

To conduct the study, 50 elite male players from various sports (Ave. age 26.50 years) were selected as sample. The selection of elite male players were done from only those sportspersons who took part in national level individual and team events as well as who came

in first four positions in these event. To fulfil the objectives of the study, 50 intercollegiate male players (Average age 21.09 years) from various sports events were also selected as sample and termed as sub-elite players. Purposive sampling was used for selection of subjects.

**Tools**

Hindi version of Problem Solving Ability Scale prepared by Sharmila and Naga Subramani (2011) was used to assess problem solving ability of selected elite and sub elite players. It is based on 5-point Likert scale. The problem solving ability scale consists of 40 items with fair reliability and validity coefficient.

**Procedure**

50 elite and 50 sub elite male players were identified and selected purposively as per the sample requirement of the present study. Prior consent was obtained from each subjects regarding their participation in this study. Hindi version of problem solving scale prepared by Sharmila and Naga Subramani (2011) was administered to each subject as per his convenience and comfort in a peaceful corner. The responses so obtained were scored as per author’s manual. Finally the data were tabulated in their respective groups. Independent sample ‘t’ test was used to compared problem solving ability of elite and sub elite players. The result is depicted in table 1.

**Results**

**Table 1:** Comparison of Problem Solving Ability of Elite and Sub-elite Male Players

Variable	Elite Players (N=50)		Sub-elite Players (N=50)		t	Level of Significance
	M	S.D.	M	S.D.		
Problem Solving Ability	118.26	12.42	107.84	12.88	4.11	.01

t(df=98) = 2.63 at .01 level

A perusal of table 1 reveal that problem solving ability of elite male players was significantly superior (M=118.26) as compared to sub-elite male players (M=107.84). The calculated t=4.11 gives statistical weightage to this finding at .01 level of significance.

**Discussion**

The results of the present study clearly indicate that general executive functions such problem solving ability is important in sporting success. Executive function such as problem solving is a part of global cognitive controls. According to Green *et al.* (2008) <sup>[10]</sup>, it is an ability to use working memory so that future actions can be predicted. Hence it can be said that due to superior problem solving ability elite players can predict a problem situation much earlier than sub-elite players which enables them to find solution and act accordingly in a match situation. This gives elite players an added advantage during play.

**Conclusion**

On the basis of results it may be concluded that superior problem solving ability is one of the psycho-cognitive factor that is a pre-requisite of attaining success in sports.

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