

# A Comparative Study of Problem Solving Ability in Sportspersons in Relation to their Sports Achievement

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**Abstract:** *The aim of the present study is to compare problem solving ability among sportspersons on the basis of their sports achievements. For present study, 60 national level sportspersons (Ave. age 24.12 yrs.), 60 state level sportspersons (Ave. age 23.34 yrs.), 60 district level sportspersons (Ave. age 21.11 yrs.) were selected as sample. The sample comprise of subjects from both the sexes. The chosen games from where sportspersons were selected comprise of judo, table tennis, volleyball, basketball, badminton and hockey. The sample was collected through convenience sampling method. Hindi version of Problem Solving Ability Scale prepared by Sharmila and Naga Subramani (2011) was used to assess problem solving ability of selected subjects. Analysis of data reveals that problem solving ability in national level sportspersons was found to be significantly superior as compared to state and district level sportspersons. It was concluded that functionality of brain is an important marker of sports achievements.*

**Keywords:** Problem solving ability, Sports achievements

## 1. Introduction

A mental process which discovers, analyze and solve an issue is nothing but problem solving. The major objective of problem solving is to remove obstacles or circumstances that come in way of attaining desired outcome or goals. Problem solving includes identification of problem, defining a problem, obtaining information regarding problematic situation, allocating resources to solve the problem and monitoring the progress.

Problem solving skills are most complex process involving intellectual functions and considered as higher order cognitive process (Goldstein and Levin, 1987)<sup>1</sup>. There are two types of problems, one that has only one solution with its basis lies in psychometric intelligence and other problem which have multiple solutions i.e. it has multiple answers (Blanchard-Fields, 2007)<sup>2</sup>. The problems occur in sports field are aplenty and it has variety of solutions which depends upon situational analysis. Sportspersons needs problem solving skills because they have to analyse tactical, technical and variety of problems on and off the field. In order to creatively deal with the problem a sportsperson require problem solving ability. In this context it would be worthwhile to assess problem solving skills of sportspersons on the basis of their sports achievements.

Although under the domain of sports psychology, so many studies have been conducted by researchers such as Waples (2003)<sup>3</sup>, Bhardwaj and Sharma (2011)<sup>4</sup>, Sathe (2013)<sup>5</sup>, Ghosh (2014)<sup>6</sup>, Mishra (2015)<sup>7</sup> in which psychological characteristics of sportspersons have been assessed in the light of their sports achievements but so far problem solving ability of sportspersons has not been explored in the light of their sports achievements, hence the present study was planned.

## Hypothesis

It was hypothesized that national level sportspersons will show more magnitude of problem solving ability as compared to state and district level sportspersons.

## Methodology

The following methodological steps were taken in order to conduct the present study.

## Sample

For present study, 60 national level sportspersons (Ave. age 24.12 yrs.), 60 state level sportspersons (Ave. age 23.34 yrs.), 60 district level sportspersons (Ave. age 21.11 yrs.) were selected as sample. The sample comprise of subjects from both the sexes. The chosen games from where sportspersons were selected comprise of judo, table tennis, volleyball, basketball, badminton and hockey. The sample was collected through convenience sampling method.

## Tools

### Problem Solving Ability Scale

To assess problem solving ability of selected subjects, Hindi version of Problem Solving Ability Scale prepared by Sharmila and Naga Subramani (2011) was used. This test consists of 40 statements. The equal length Spearman-Brown reliability coefficient of this scale was found to be 0.825 while it has fair construct validity.

## Procedure

- 60 national, 60 state and 60 district level sportspersons from different sports were identified.
- After obtaining consent from these subjects about their voluntarily written consent for participation in this study, Hindi version of Problem Solving Ability Scale prepared by Sharmila and Naga Subramani (2011) was administered to each subject in a laboratory like condition.

- The responses of each subject was scored off as prescribed in author's manual. After scoring the data was tabulated as per pre defined study groups.
- One Way ANOVA was used to compare problem solving ability of sportspersons with different level of participation.
- The analysis of data is presented in table 1 and 2 respectively.

## 2. Analysis of Data

**Table 1:** Descriptive Statistics of Mean Scores on Problem Solving Ability Scale in a Group of National, State and District Level Sportspersons (N=180)

Groups	N	Problem Solving Ability	
		Mean	S.D.
National Level Sportspersons	60	105.16	8.48
State Level Sportspersons	60	98.20	6.33
District Level Sportspersons	60	100.53	8.18
F=6.32, p<.01			

Results obtained through One Way ANOVA indicate that problem solving ability in national, state and district level sportspersons did differ significantly with each other. The F ratio of 6.32, which met the criteria of statistical significance adds weightage to this finding.

Least Significant Difference Test presented in table no. 2 gives group-wise comparison of problem solving ability of sportspersons.

**Table 2:** Comparison of Mean Scores on Problem Solving Ability in a Group of National, State and District Level Sportspersons (N=90)  
 Least Significant Difference Test with Significance Level .05

Mean (I)	Mean (J)	Mean Difference (I-J)
National Level Sportspersons	State Level Sportspersons	6.96*
	District Level Sportspersons	4.63*
State Level Sportspersons	National Level Sportspersons	-6.96*
	District Level Sportspersons	-2.33
District Level Sportspersons	National Level Sportspersons	-4.63*
	State Level Sportspersons	2.33

\* Significant at .05 level

A perusal of entries reported in table 2 gives following inferences:

- National level sportspersons had significantly superior problem solving ability (M=105.16) as compared to state (M=98.20) and district level sportspersons (M=100.53). The mean difference of 6.96 and 4.63 respectively were found to be statistically significant at .05 level.
- No significant difference was observed in problem solving ability of state (M=98.20) and district level sportspersons (M=100.53). The mean difference of 2.33 was not found to be statistically significant.

On the basis of analysis of data, following results are obtained.

## 3. Results

- Problem solving ability in national level sportspersons was found to be significantly better as compared to state and district level sportspersons.
- Problem solving ability of state and district level sportspersons did not differ significantly with each other.

## 4. Discussion

In the present study problem solving ability of national level sportspersons was found to be significantly better as compared to state and district level sportspersons. The reason lies in theory of Newell, Shaw and Simon (1958)<sup>8</sup>. A sportsperson needs to respond to unfamiliar opponent, conditions, environment, tactics used by opponents. In order to overcome this sportspersons must be aware of use of certain tactical or technical skills to such conditions to reach at the desired goals. Hence ability to solve on and of field problems enables national level sportspersons to utilize their sporting potential more efficiently as compared to state and district level sportspersons.

## 5. Conclusion

On the basis of results, it was concluded that problem solving ability significantly varies in sportspersons on the basis of their sports achievements.

## References

- [1] Goldstein F. C. and Levin H. S. (1987). Disorders of reasoning and problem-solving ability. In M. Meier, A. Benton, & L. Diller (Eds.), *Neuropsychological rehabilitation*. London: Taylor & Francis Group.
- [2] Blanchard-Fields, F. (2007). "Everyday problem solving and emotion: An adult developmental perspective. *Current Directions in Psychological Science*". *Current Directions in Psychological Science* 16 (1): 26–31.
- [3] Waples, S. B. (2003). *Psychological characteristics of elite and non-elite level gymnasts (Doctoral dissertation)*. Texas A & M University, College Station, Texas.
- [4] Bhardwaj, R.K. and Sharma, P. (2011). A comparative study of personality of athletes sportsmen with reference to their sport's achievement. *International Journal of Research in IT & Management*, Vol. 1, Issue 1, pp. 147-153.
- [5] Sathe, V.B. (2013). Comparative Study of Mental Toughness between National and International Indian Weightlifters. *International Educational E-Journal, {Quarterly}, Volume-II, Issue-IV, 67-69*.
- [6] Ghosh, B. (2014). Assessment of Mental Toughness among High and Low Achievers of State Level Yoga Competitors: A Comparative Study. *Online International Interdisciplinary Research Journal, {Bi-Monthly}, Volume-IV, Issue-IV, 278-283*.
- [7] Mishra, V. (2015). A Comparative Assessment of Reaction towards Frustrating Situations between Elite and Non Elite Kabaddi Players. *Research Journal of Physical Education Sciences*, Vol. 3(3), 1-2.
- [8] Newell, A., Shaw, J. C. and Simon, H. A. (1958). Elements of a theory of human problem solving. *Psychological Review*, 65, 151-166.