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## Effect of neuroticism dimension of personality on mental toughness of intercollegiate male ballgame players

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### Abstract

The present study assessed the impact of neuroticism dimension of personality on mental toughness of intercollegiate male ballgame players. 50 intercollegiate male players with average age of 21.91 years were selected purposively for the present study. Players who took part in intercollegiate competition in sports such as cricket, volleyball, soccer and basketball were selected. The players were selected mainly from colleges operational in Bilaspur Chhattisgarh. Tiwari's Mental Toughness Questionnaire standardized in 2007 was adopted to assess mental toughness of selected intercollegiate male ballgame players while Hindi version of PEN inventory standardized by Menon *et al.* (1978) was used to assess neuroticism among intercollegiate male ballgame players. To analyse the correlated variables more closely, One Way ANOVA was worked out with neuroticism being categorized into three categories namely high neurotic, low neurotic and average neurotic. The categorization of neuroticism was achieved by statistical method Q1 and Q3. In this method scores were classified on the basis of 25th and 75th percentile. Results reveal that mental toughness in low neurotic male ballgame players was significantly higher as compared to high and average neurotic male ballgame players. It was concluded that emotional stability in intercollegiate male ballgame players affect their mental toughness.

**Keywords:** Mental toughness, neuroticism, ballgame

### Introduction

An important measure of sports performance is mental toughness. Various framework of mental toughness also contribute to this fact that it is one of the essential psychological variable in terms of sports performance. Although its efficacy in sports performance is defined, there is ambiguity in framework used for it. It is also noticeable that mental toughness is a term used as usage of psychological resources effectively. Since mental toughness consists of psychological traits that are also embedded in personality, hence it would contribute greatly to sports psychology if association between the two is determined. A definition put forward by Clough *et al.* (2002) <sup>[1]</sup> associates calmness during tense situation in a match, ability to adjust to social environment, high competitive behavior with better management of anxiety and tension with mental toughness. They also opined that self-belief i.e. optimistic thinking about performing and succeeding in a task. Their definition also comprise of ability to cope with adverse situation as hallmark of mental toughness. As far as sports settings are concerned Macnamara *et al.* 2010 <sup>[10]</sup> reported that mental toughness is the key element for performance at highest level. It simply means emotional stability or calmness. High neurotic people exhibits character such as anxious and restless. They can be easily aroused and not well organised in their thoughts. On the other hand, low neurotic represents emotional stability. One of the Eysenck's personality dimensions i.e. neuroticism means that person is in control of temper and emotionally stable. Low neurotics are calm under pressure that is why they are able to handle pressure situation more efficiently. So far studies conducted by Singh (2014) <sup>[9]</sup>, Gill and Malik (2015) <sup>[6]</sup>, Cowden (2016) <sup>[2]</sup>, Reddy and Berhanu (2016) <sup>[8]</sup> to name a few have explored various aspects of psychological variable mental toughness and its relationship with sports performance and found that mental toughness is one of the most important aspect of sports performance. Since utility of mental toughness in ballgame has also been propagated, the present study was carried out to assess the impact of neuroticism dimension of personality

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on mental toughness of intercollegiate male ballgame players.

**Objectives**

The objective of the present study was assess the impact of neuroticism dimension of personality on mental toughness of intercollegiate male ballgame players.

**Hypothesis**

No significant impact of neuroticism dimension of personality will be observed on mental toughness of intercollegiate male ballgame players.

**Methodology**

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

**Sample**

50 intercollegiate male players with average age of 21.91 years were selected purposively. Players who took part in intercollegiate competition in sports such as cricket, volleyball, soccer and basketball were selected. The players were selected mainly from colleges operational in Bilaspur, Chhattisgarh.

**Tools**

Tiwari's Mental Toughness Questionnaire standardized in 2007 was adopted to assess mental toughness of selected intercollegiate male ballgame players. It is based on characteristics such as self-confidence, motivation, attention control, goal setting, visual and imagery control and attitude control respectively. The mental toughness with the questionnaire is evaluated with the help of 48 items. A subject

can have the lowest score of 48 while the highest score may be 240. The reliability and validity of this questionnaire is satisfactorily established by the author.

Hindi version of PEN inventory standardized by Menon *et al.* (1978) was used to assess psychoticism, extraversion and neuroticism dimension of personality among male intercollegiate ballgame players. This inventory is highly reliable and valid

**Procedure**

50 intercollegiate male players who took part in intercollegiate competition in sports such as cricket, volleyball, soccer and basketball were selected. Mental toughness questionnaire and PEN inventory was administered to each subject while making sure that the time interval between two psychological tools was sufficient. The scoring of response for each item of both the psychological tools was carried out in accordance with instructions and scoring key given in respective manuals. Data for mental toughness and neuroticism dimension of personality was tabulated. The categorization of neuroticism was achieved by statistical method Q1 and Q3. In this method scores were classified on the basis of 25th and 75th percentile. Scores on N scale above the Q3 quadrant were classified as high neurotic and scores on N scale below Q1 quadrant were classified as low neurotic while scores in between 25th and 75th percentile scores were classified as average level of neuroticism. Mental toughness scores among intercollegiate male ballgame players were then analysed with the help of one way ANOVA. The analysis of data is shown in table 1 and 2 respectively.

**Result and discussion**

**Table 1:** One Way ANOVA - Comparison of Mental Toughness among Male Intercollegiate Ballgame Players on the Basis of Neuroticism Categories

Intercollegiate Male Ballgame Players	N	Mean	S.D.
High Neurotic	16	165.75	30.61
Low Neurotic	19	202.63	47.30
Average Psychotic	15	193.13	13.45

**Table 1:** (a) ANOVA Summary

Source	DF	Sum of Squares	Mean Squares	F	Sig.
Between Groups	02	12383.826	6191.913	5.11	.01
Within Groups	47	56871.154	1210.025		
Total	49	69254.980			

The F ratio of 5.11 as reported in table 1(a) indicate significant difference in mental toughness of intercollegiate male ballgame players on the basis of various categories of neuroticism at.01 level of statistical significance.

To compare mean values of mental toughness between different categories of neuroticism, Least Significant Difference Test was applied. Results shown in table 2.

**Table 2:** Difference in Mean Scores on Mental Toughness in Intercollegiate Male Ballgame Players Based on Neuroticism Least Significant Difference Test with Significance Level.05

Mean (I)	Mean (J)	Mean Difference (I-J)
High Neurotic	Low Neurotic	-36.88*
	Average Neurotic	-27.38*
Low Neurotic	Average Neurotic	9.49

\* Significant at.05 level

Least Significant Difference Test as shown in table 2 yielded

following facts:

Mental toughness in low neurotic male ballgame players (Mean=202.63) was found to be significantly higher as compared to high (Mean=165.75) and average neurotic male ballgame players (Mean=193.13). The mean difference of 36.88 and 27.38 were found to be statistically significant at.05 level.

Mental toughness in low and average neurotic intercollegiate male ballgame players was found to be statistically nonsignificant (Mean difference=9.49, p>.05).

In the present study mental toughness was showing significant association with personality type i.e. neuroticism. Mental toughness definition encompasses psychological characteristics such as calmness under pressure, socially adjusted and lower level of anxiety, optimism and highest magnitude of self-confidence (Clough *et al.*, 2002) [1]. All these qualities are also present in neuroticism dimension of personality. Hence the association of mental toughness with

neuroticism dimension of personality is not surprising and nullifies the contrary findings.

### **Conclusion**

On the basis of results it may be concluded that neuroticism dimension of personality significantly affect mental toughness of intercollegiate male ballgame players.

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