Neuroticism of Cricket Players

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ABSTRACT

Neuroticism is an enduring tendency to experience negative emotional states, such as anxiety, anger, guilt and depression. It is believed that those who score high on neuroticism scales are more likely, than average, to respond poorly to stress and to interpret situations as threatening or hopelessly difficult. Knowing that it is an important aspect of personality, it was decided to explore whether neuroticism differs among the Cricket players. To study the neuroticism among Cricket players, Eysenck's neuroticism inventory (English version of Indian Adaptation 1987, Raval P.H) was used to collect the data statistical analysis was performed on the selected sample of 148 Cricket players. Results show that neuroticism among Cricket players doesn't depend on the level of participation as well as on their specialization such as, batsmen, fast-bowlers, slow-bowler wicket-keeper, fast bowler all-rounder and slow bowler all-rounder. International level of Cricket players show lesser neurotic tendency as compared to school/college/club level of Cricket players.

KEY WORDS

Neuroticism, Cricket players, Personality profile

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INTRODUCTION

Benefits of regular/moderate physical/sports activity to our health has been well established (Wasburtan et al, 2006). Sports is an ever expanding avenue of life. From very simple beginning it has developed into highly organized activity of human society. From the earliest times to the modern age, sport has played a vital role in the life of mankind. Cricket is undoubtedly one of well recognized international sport. There are many countries around the globe in Asia, Europe, America, Africa and Australia which play Cricket. India is one of the countries where Cricket is liked and played by many.

Uniqueness of Cricket

For number of varied reasons the Cricket game has mass appeal and is one of the most popular and unique game, in comparison to all others games. For example in lawn tennis, one can lose a set or point in badminton and table tennis you may afford to drop a point, in Football, Basketball, Volleyball, Hockey and almost in all the games , in spite of poor performance in the beginning you have the chance to bounce back and still will be in position to win the game. But, in game of cricket one has relatively lesser chance to recover; therefore, psychological fitness and mental toughness is utmost need of this game. It is observed that physical and physiological fitness, technical and tactical preparations are pre- requisites at all levels in all sports and games but it is psychological preparation of the Cricket players which decides the performance at each and every level, during the competition.

There have been many reports in the literature dealing with performance of a player and their psychology, where the idea is to find and establish relationship between personality traits and their performance. For example, to know psychology of athletes, researchers have tried to find out whether they differ in personality from non-athletes. A lot of researches have also been done to understand the personality traits of players of different games and sports. Many social scientists and psychologists are particularly interested in identifying those qualities of the players which distinguish them from a normal person. On the basis of all previous research, one of the most consistent findings is that athletes are more extraverted and less neurotic than non-athletes (Singer, 1975; Morgan, 1980; Kirbcaldy, 1982). However, there is less agreement on how personality varies from sport to sport (Wann, 1997). In this context, it will be interesting to study and explore in detail the relationship between psychology and performance of player in the context of cricket as a game. This psychology of player will be characterized in terms of what is called neuroticism. But, before we establish a correlation between neuroticism and a cricket player, we would like to mention in brief about neuroticism.

Neuroticism

According to Eysenck (1947) neuroticism (emotional instability) refers to "general emotional over responsiveness and the liability to neurotic break down under stress". He explains the bipolar dimension of neuroticism - stability in terms of the instability of the autonomic nervous system. He maintains that the autonomic is

basically dependent on an individual's constitutional structure, which mediates the strength of the sympathetic or voluntary reaction to incoming stimuli. Although, there seem to be characteristic ways in which various individuals react to this sympathetic stimulation and the way in control is indicated by the Para- sympathetic system. Eysenck (1947) nevertheless consider the autonomic nervous system to be the most likely basis for individual differences in emotionality.

The individual who scores high on neuroticism may be described as being an anxious or worrying individual, moody and frequently depressed. They are not able to sleep properly and suffer from vague somatic trouble of a minor kind like; headache, digestive problems, insomnia, backache etc. They are over emotional and tend to react too strongly to most of the stimuli and find difficult in getting back to normalcy after emotionally arousing experiences. Their strong emotional reactions interfere with their adjustment, making them react in irrational, sometimes rigid ways.

It is also well known that the sports person who score high on neuroticism are over emotional, and tend to react too strongly to most of the stimuli and find difficulty in getting back to normalcy after emotionally arousing experiences. Their strong emotional reactions interfere with their adjustment, making them react in irrational and sometimes, rigid ways and unable them to perform consistently in concerned sports. The low scoring sports person on the scale of neuroticism have been found to be indifferent and disorganised, and hence their performance may not be satisfactory, competitive and up to the mark. This certainly indicates about the relationship between performances of sportspersons and its personality variables. As a result of extensive research over last decades, it has been found that extraversion and neuroticism are among the important variables, which influence sports performance in addition to many other personality variables. To be precise, even extraversion has been found to be highly related or supportive to dominance and sociability in athletes and sports participants. It is also found that team participants scored higher on extraversion than both individual sport participants and non-participants. One of the studies (Javeed & Dhonde, 2012) has even also found that rural national level kabaddi (A game played between two teams of seven players, in which individuals take turns to chase and try to touch members of the opposing team without being captured by them) players had significantly high neuroticism than the urban national level kabaddi players. This study certainly suggests us that the level of participation could make players perform differently. A study by Mckelvie et al (2003) suggests that extraversion did not vary significantly between athletes and non-athletes or between contact and no contact athletes. But, at neuroticism scale, athletes scored significantly lower than non-athletes. Another study (Kumar & Prabhakaran, 2011) clearly suggests us that even the performance of player depends on geographical location too. For example, Rajasthan (A state of India located at western side) located cricketers were better in their personality as compared to Madhya Pradesh (A state of India located at central part of the map) side cricketers and also found there was no difference in sports

competition anxiety of Rajasthan cricketers and Madhya Pradesh cricketers. Yet another study by Costa and McCrae, (1980) found that extraversion traits correlated strongly with concurrent positive effect, and neuroticism traits correlated strongly with concurrent negative affect. No comprehensive studies have been made to understand the personality traits of Cricket players in relation to neuroticism. It has been repeatedly emphasized that individual behaviour does not have the same implication in others games and sports as it does in the Cricket. The present study is an attempt to study the Cricket players in relation to neuroticism.

METHODOLOGY

Our study is based on the sample size of 148 Cricket players, out of which there are 111 male and 37 female players, who have participated at different level of competitions such as, international (IN), national (NAT), and school/college/club (SCL/COL/CLB). These players were further divided into sub groups on the basis of their specialization i.e. Batsman (BAT), Fast bowler (FB), slow bowler (SB), Wicket-Keeper (WK), Fast Bowler All-Rounder (FAR), and Slow Bowler All-Rounder (SAR). Eysenck's neuroticism inventory (English version of Indian Adaptation 1987, Raval P.H35.) was administered on these 111 male and 37 female Cricket players. The Eysenck's neuroticism inventory scale consisted of 32 items, 9 of the items were considered only for calculation of lie-score, The uniform procedure was followed by providing fixed choice of two categories 'yes' or 'no' in all items and subjects were asked to answer only 'yes' or 'no' whichever was appropriate in her/his case. A typical high score on neuroticism scale, thus can be described as a worrying factor with a constant pre-occupation with things that might go wrong and a strong emotional reaction of anxiety to these thoughts. Such individuals are predisposed to develop neurotic disorders under stress. It also acts as motivational force. Since, it acts as a motivating force, neuroticism ffects acquisition of efficiency. It is a purposive incidental sample. After scrutinizing, some respondent were discarded due to inconsistent and incomplete responses. To make equal number in each group, some respondent were discarded by using the Lot method (statistical method for acceptance sampling developed by Dorian Shainin in the 1940s). The data was analysed by using $\chi 2$ one way analysis and K-mean clustering method of Hartigan.

Hypothesis

Our aim in this work is to test the null hypothesis whether Cricket players are different in their level of neuroticism, irrespective of their specialisation and level of participation.

Scoring and interpretation

On level of neuroticism, the score obtained can be classified under three categories, namely below average, average and above average and all of it has its own meaning and significance which will be discussed in detail later. Followings three categories are considered in the study:

a) Neuroticism Score	0-8	=	Below Average
b) Neuroticism Score	9-12	=	Average
c) Neuroticism Score	13 and above	=	Above Average

RESULTS & DISCUSSION

Table-1: χ2-One Way Analysis of Neuroticism

Variable	N	Average (above)	Average	Average (below)	d/f	χ^2	Significance
Neuroticism	148	45	58	45	2.0	56.4	0.01

In Table 1, we have obtained the frequencies on above average, average and below average scale *by applying* χ2 one way analysis on the sample data of 148 Cricket players at 0.01 significance level. On distribution of neuroticism out of 148 Cricket players 45 Cricket players have scored above average, 58 players have scored average and 45 Cricket players have scored below than Average. Although, average score is higher than either of below or above average which is exactly the same, in none of the category it follows the normal probability distribution pattern. χ2 is significant at 0.01 accepted level, hence null hypothesis is rejected and therefore concluded that Cricket players have clear tendency to have high neuroticism as well as low neuroticism. This means no concrete decision can be made, which could be due to statistical methods applied for analysis. We further go on analyzing the data by applying χ2 3×3 analysis on the sample data, where the goal is to check the relationship between levels of neuroticism and level of participation. The available sample data is divided into different set on the basis of level of participation, namely international, national, or Scl/Col/Clb by discarding the female Cricket players from the sample data. This has been done intentionally to remove any kind of gender bias in the sample.

Table-2: χ2 3×3 Analysis : Level of Neuroticism v/s Level of Participation (Excluding female Cricket players)

Level of participation	Average (Below)	Average	Average (Above)	Total
International	15	12	10	37
National	16	11	10	37
Scl/Col/Clb	12	18	07	37
Total	43	41	27	111

In Table 2, we show the result obtained along with the frequencies in each cell based on level of participation and level of neuroticism. As a result of 3×3 analysis we find $\chi2 = 3.34$, $d/f = 4$ at 0.05 significance level. Thus, one can conclude that χ2 is not significant hence the null hypothesis is accepted here. Therefore, it is safe to conclude that the level of participation i.e. international, national and Scl/Col/Clb level Cricket players do not differ mutually in the level of neuroticism.

Table-3: $\chi 2$ 4 x 3 Analysis : Level of neuroticism v/s level of participation (Including female Cricket players)

Level of Participation	Average (Below)	Average	Average (Above)	Total
International	15	12	10	37
National	16	11	10	37
Scl/Col/Clb	12	18	07	37
Female(National)	02	17	18	37
Total	45	58	45	148

The Table 3 we have reported the results obtained as a result of $\chi 2$ test at 4 x 3 analysis statistical analysis on the sample data of 148 players. We report the results obtained along with the frequencies in each cell based on level of participation (including female Cricket players) and level of neuroticism. The $\chi 2$ value of 19.3, d/f =6 at 0.05 acceptance level clearly demonstrates that $\chi 2$ is not significant hence the null hypothesis is rejected here and therefore concluded that female Cricket players have the tendency of high neuroticism level. Level of participation does not show the significant difference in the level of neuroticism as shown in Table 3 but female players show the tendency of high neuroticism level.

Table-4: $\chi 2$ 6 x 3 Analysis : Level of Neuroticism v/s Specialization

Specialization	Average (Below)	Average	Average (Above)	Total
BAT	14	18	16	48
FB	04	07	06	17
WK	02	04	00	06
SB	03	02	06	11
FAR	13	14	14	41
SAR	09	13	03	25
Total	45	58	45	148

In the next step our aim was to check the relationship between specialization of Cricket players and level of neuroticism. To perform such statistical analysis, the pre requisite is to collect the data on the basis of specialization and perform the analysis. Therefore, in Table 4 we demonstrate the results obtained as a result of division of cricket players on the basis of her/his specialization using $\chi 2$ test at *6 x 3 analysis level of analysis. We find* $\chi 2$ =11.45 and d/f=10 at 0.05

significance level. The Table 4 shows the result obtained along with the frequencies in each cell based on level of neuroticism and level of specialization $\chi 2$ is not significant hence the null hypothesis is accepted here and therefore concluded that all six specialized group of players i.e. BAT, FB, WK, SB, FAR, SAR don't differ on level of neuroticism

Cluster analysis

We further decided to analyze our data using K-means clustering method. As we know,K-means clustering method (Hartigen, 1975) is used for the tracing the cluster and interrelation of each factor with all others factors in terms of mean score on each comparable group. By using this method we hope to find some interrelationship among the variables responsible for higher/lower neurocratic behaviour. This analysis was under taken by using SYSTAT package in which "F" ratio are calculated, distance of one factor in respect to all other factor is estimated .

Table-5: Cluster No. I - Level of Neuroticism

N	Variable	Minimum	Mean	Maximum	Standard deviation(SD)
103	LS	1	4.25	7.00	1.27
103	NS	9	11.8	17.0	2.17

With the help of k. mean clustering method the two clusters has been traced on level of Neuroticism. In cluster no I (Table-5) which consist of 103 cricket players the mean value of lie score is 4.25 and neuroticism score is 11.8 and SD is 1.27 and 2.17 respectively, when compare to the test norms average group (NS= 9-12) and above average group NS(=13 and above) falls in this cluster . This cluster does not show any clear cut trend as a group of Cricket players and show high neuroticism tendency.

Table-6: Cluster No. II - Level of Neuroticism

N	Variable	Min.	Mean	Max.	SD
45	LS	2	4.47	7	1.24
45	NS	3	5.76	8	1.51

Cluster number II (Table-6) consists of 45 Cricket players. The mean value of lie score is 4.47 and neuroticism score is 5.76 while SD is 1.24 and 1.51, respectively. When compared to the test norms (NS 0-5 BELOW AVERAGE) this cluster shows the tendency of very low neuroticism. It consist of all the six specialised sub-groups (BAT,FB,SB,W/ K,FAR,SAR) as well as the level of participation i.e. (IN/NAT/SCL/COL/CLB) tendency to have low neuroticism score and high neuroticism score follows the general population trend.

CONCLUSION

Cricket players have the clear tendency to have high neuroticism as well as low neuroticism. International level, National level and School/College/Club level Cricket players differ mutually on the level of neuroticism.International level of Cricket players show the lesser neurotic tendency as compared to school/college/club level of Cricket players.

Female Cricket players (national level) show the tendency of high neuroticism. Level of participation does not show the significant difference in the level of neuroticism. Specialization of cricket players such as, batsmen, fast bowlers, wicket keepers, slow bowlers, fast bowlers all-rounder, slow bowlers all-rounder doesn't make any difference on the level of neuroticism. Since, this study is solely focussed on Cricket players; it will be not wise to make any conclusion with respect to other team game. Nevertheless, it will be interesting to compare neuroticism level of other team game with Cricket.

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