

A study on relationship between intelligence and motor fitness between school level cricketers and footballers

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Abstract- Human being is an interaction of body and mind which is known as psycho-physical unity. The better co-ordination between two, the better would be the performance. Intelligence is integral part of human nature. We do distinguish individual in our everyday life. Movement is the major part of motor fitness. In the field of sports, the performance of a particular motor task / skill requires a top level of intelligence depending upon the complexity of the skill or task.

The purpose of the study was to observe the relationship between intelligence and motor fitness of school level cricketers and footballers. For this purpose one hundred (100) cricketers and one hundred (100) footballers were taken as subject. The Motor fitness components and Psychological Trait Intelligence were selected as the criterion measures for this study. The Psychological trait intelligence was measured by Dr. G. C. Ahuja's, 'Group Test of Intelligence' questionnaire and the Motor fitness components were measured by "AAHPERD Youth Fitness Test". For this purpose Pearson correlation was used. It was observed that players possessed better motor fitness qualities, has higher level of intelligence level. Footballers group was better in both intelligence and motor fitness than cricketers group. Therefore, it may be concluded that better the motor fitness, there should be a fair chance of exhibiting of intelligence level also high.

Index Terms- Intelligence, motor fitness, school level cricket players, school level football players

I. INTRODUCTION

Human being is made-up with body and mind and this interaction is known as Psycho-physical Unity. The better the co-ordination between two, the better would be the performance. The response capabilities of the individual are dependent upon his innate neuro-motor make-up, his physical structure and his typical of activation, as well as his inclination to move at a given moment in a given task.

In this world, and individual's life is a continuous flow of activity. Every moment he or she is doing something. His every activity is the result of the joint effort of his body and mind. The activity may be throwing, kicking, running, jumping etc. Mechanism of combined working of mind and body is known as neuro-muscular system, which conducts and controls all human behaviour. It is the base and the function of the whole body is dependent on it. As activity originates in the mind and is done and expressed by some bodily organs. In other words, mental processes like thinking, feeling, expression etc, start with bodily activity¹.

According to R. B. Cattell as referred by Gupta (1989), intelligence is hereditary in nature. We are finding that both intelligence and movement are hereditary qualities of human being, so there is a relation between them.

In a broad and general sense, it can be expressed that physical fitness deals with the physical side of the body and intelligence deals with mental side of the body. We know that the human organism is a complete entity, the total whole.

We do not think with the brain alone. A person thinks with the function of gland, the tone of muscles, and the digestive process in addition to the brain. So, mental activity is a manifestation of whole organism, e.g. pain in stomach (organ of the body) shows feelings of uneasiness that leads to the mental disturbance.

Accordingly body and mind are intimately related i.e., there may exist a relation between motor fitness and intelligence.

Now-a-days, physical education has the aim to develop physical fitness, motor fitness as well as mental, intellectual, social and emotional development. In the field of sports, the performance of a particular motor task requires a top level of intelligence depending upon the complexity of the skill or task. This type of performance is the result of intelligence on the part of the athlete concerned.

With this back drop, the investigator tries to investigate the intelligence of the athletes and has taken up this study for investigation to find out the relationship between athletic performance in terms of motor fitness and intelligence.

1 S.C. Gupta "Psychology Applied to General Education and Physical Education.", Pragati Prakashan, Meerut, 1989, pp 25-27

II. MATERIALS AND METHODS

Subjects:

Total Two hundred (200) school level players consists of One hundred (100) cricketers and rest of them footballers were taken as subjects for this study. The subjects were taken from Burdwan District, West Bengal.

Psychological State:

Psychological states of the subjects were measured by Dr. G. C. Ahuja's "Group Test of Intelligence" questionnaire. The questions are as follows:

Sl. No.	Sub-Test	Number Items	Time Limit
1	Following Directions	9	4 Minutes
2	Classification	20	"
3	Analogy	20	"
4	Arithmetic Reasoning	6	"
5	Vocabulary	40	"
6	Comprehension	8	"
7	Series	12	"
8	Best Answers	20	"
TOTAL		135	32 Minutes

1 mark was given for each question. Motor fitness was measured by "AAHPER Youth Fitness Test". There have six test items i) Pull up for boys and flexed arm hang for girls, ii) Bent knee sit up, iii) 4x10 yard shuttle run, iv) Standing board jump, v) 50 yard dash, vi) 1½ mile run.

Data Analysis:

The collected data were analyzed by using SPSS version. The Pearson's Correlation method was used to calculate the relationship between intelligence and motor fitness.

Results and Discussions:

Table -1 showed the results of the correlation between intelligence and total motor fitness scores of Footballers group were presented in a tabular form.

Table-1: Results of correlation between Intelligence and motor fitness of football players.

	Total Fitness (Footballer)	Total Intelligence (Footballer)
Total Fitness (Footballer)		
Pearson correlations	1.000	0.886**
Sig. (2 tailed)	-	0.000
N	100	100
Total Intelligence (Footballer)		
Pearson correlations	0.886**	1.000
Sig. (2 tailed)	0.000	-
N	100	100

**** Correlation is significant at the 0.01 level (2 tailed)**

Table-1 showed that there was a positive correlation between intelligence and motor fitness of football players.

Table -2 showed the results of the correlation between intelligence and total motor fitness scores of Cricketers group were presented in a tabular form.

Table 2: Results of correlation between intelligence and motor fitness of cricket players

	Total Fitness (Footballer)	Total Intelligence (Footballer)
Total Fitness (Cricketer)		
Pearson correlations	1.000	0.897**
Sig. (2 tailed)	-	0.000
N	100	100
Total Intelligence (Cricketer)		
Pearson correlations	0.897**	1.000
Sig. (2 tailed)	0.000	-
N	100	100

**** Correlation is significant at the 0.01 level (2 tailed)**

Table- 2 showed that there was also a positive correlation between intelligence and motor fitness of cricket players.

It may be concluded that both the groups (*Footballers and Cricketers*) selected for this study were alike within the level of intelligence in relation to total motor fitness scores.

The investigator also tried to focus some light on the motor fitness components of both the groups and estimate the difference, if any, for better understanding about their fitness status. In this connection, the investigator represented the results in tabular form as in *Table-3*.

Table- 3: Comparison of Mean in motor fitness components between the two groups.

Parameters	Footballer	Cricketer
Pull-up	54.25	54.4
Sit-up	25.35	23.2
40 yard dash S.R.	57.2	69.25
Standing broad jump	72.65	49.60
50 yard dash	77.3	62.3
1.5 mile run	78.55	73

Table-3 showed that the footballers group was better in Sit-ups, 40 yard Dash S.R. , Standing Broad jump than their counterpart and the cricketers group was better in Pull-ups, 50 yard Dash and 1.5 Mile run than the footballers group.

The investigator also tried to enlighten the difference between the two groups in relation to motor fitness components

through graphical representation. *Figure-1* showed the graphical outcome of the group difference on component specific.

Figure-1: Graphical representation of the fitness components between the two groups.

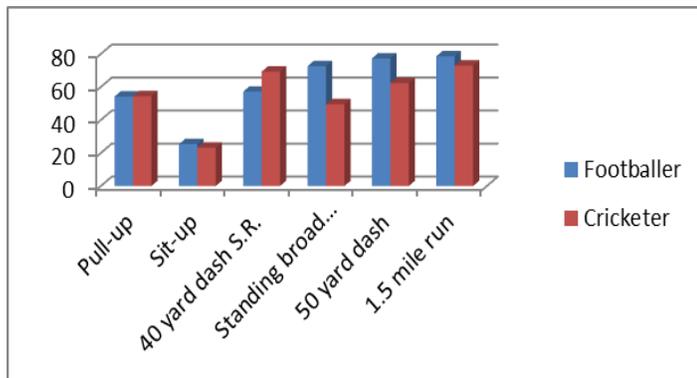


Figure-1 also showed that the both groups were identical in pull-ups and the footballers group was better in bent knee sit-up, standing board jump, 50 yard dash and 1.5 mile run but the cricketers group was better in 40 yard dash shuttle run.

The investigator also intended to estimate the difference of total fitness scores between the two groups and also presented in *Table-4*.

Table 4: Comparison of Mean values of total fitness and total intelligence between two groups.

	Footballer	Cricketer
Total fitness	365.2	329.8
Total Intelligence	92.3	90.7

Table-4 showed that the Footballers group was relatively better in both the fitness and psychological parameters than the cricketers group.

This result also represented in graphical form and mentioned in Figure-2.

Figure-2 showed the difference of Mean values in fitness and psychological parameters between two groups.

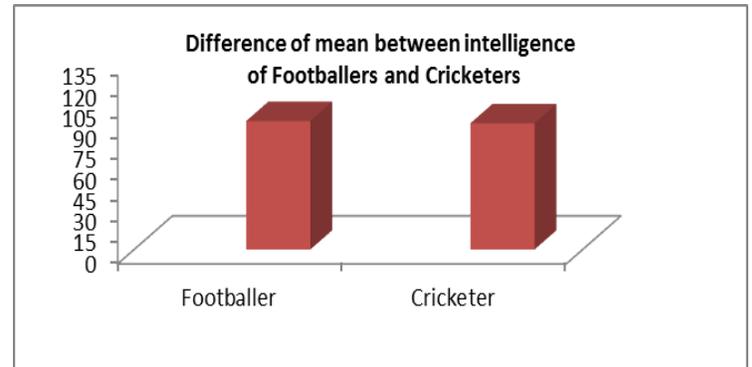
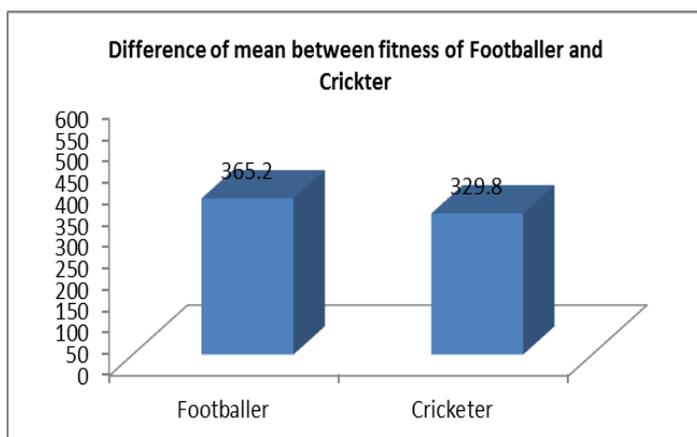


Figure-2 showed that both in total motor fitness scores and in total intelligence scores footballers were better than the cricketers.

In the present study, there was a positive relationship between intelligence and motor fitness for both the groups. So, it may be concluded that better the motor fitness better the chance of expressing high level of intelligence or vice-a versa.

III. CONCLUSION

In spite of the limitations, on the basis of the findings of this study the following specific conclusion was drawn:-

Performers showed better motor fitness has the fair chance of expressing higher level of intelligence and vice-a versa.

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