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A STUDY ON RELATIONSHIP BETWEEN INTELLIGENCE AND MOTOR FITNESS OF SCHOOL LEVEL HANDBALL AND BASKETBALL PLAYERS

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ABSTRACT

'It is only in a sound body that the sound mind exists' said both Plato and Aristotle giving emphases on due balanced growth of the body and mind: Psychological factors have already proud that to improve the performance of the sportsmen, haring psychological factors have played a significant role and for his peak of performance things matters like-interest, attention, motivation, anxiety, arousal, concentration, imagery , confidence, commitment and so on. Many of these factors are responsible for enhancing sport's performance. It is not possible to cope up with the competitive situation, excellence in sports is not possible without the athletes being reasonably intelligent. In a reviewed research study by tomporowski etc it is shown that physical activity effects on children's intelligence, cognition and academic achievement. Existing brain cells are rejuvenated and new ones are stimulated when the brain is activated during physical activity. An increased rate is seen in cerebral blood flow, enhance of arousal level, enhance nutrition intake and changing hormone secretions. Due to the increased nutrient and oxygen supply to the brain, followed by increase in cerebral blood flow results in benefit to cognitive functioning.

The purpose of the study was to observe the relationship between intelligence and motor fitness of school level volley ball and basketball players. For this purpose one hundred (100) handball and one hundred (100) basketball players 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 "AAHPER 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. Basketball group was better in both intelligence and motor fitness than Volleyball group. It can be

concluded that for the improvement of effective sports man ship, intellectually supported programme and its effects are indisputable and for better motor fitness, there should be a fair chance of exhibiting of intelligence level highly.

KEYWORDS :Intelligence, motor fitness, school level basket ball players, school level hand ball players.

INTRODUCTION

Today's fit performers, sometimes, fail to perform their level best and in explanation of the reasons behind it forces to observe the mental aspects of the failed athletic. It is proved by the mental aspects of the failed athlete. It is proved by the researchers that to improve the performance of any sportsmen, psychological factors play a significant role. The psychological factors are like interest, attention, motivation, anxiety, arousal, mental imagery, concentration, confidence, commitment etc. and so on. Several of these factors together with intelligence also help to enhance sports performance.
Cyril Burt: Innate general cognitive ability. To my mind, a human intellectual competence must entail a set of skills of problem solving – enabling the individual to resolve genuine problems or difficulties that he or she encounters and when the potential for finding or creating problems and thereby laying the groundwork for the acquisition of new knowledge

Physical Education understands the term 'motor fitness' because it is more limited in scope and loses some of the elusiveness of physical or total fitness. 'Motor fitness' has been defined as bye Curator ''a readiness or preparedness for performance with special regard for big muscle activity without undue fatigue. It includes the capacity of the individual to more efficiently and with strength and force over a reasonable length of time.

Thoughts which do not get into muscles, never fully possess the mind''. Research in psycho-physiology has proved, more or less accurately, that the strength for the nerves is derived from the strength of the muscles. The more efficiently the muscles are exercised, the more efficiently the muscles are exercised, the more efficiently they nourish and serve other systems of the body especially the brain and the nervous system on which is dependent our intelligence.

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

Organization of behaviours, according to Piaget, means the tendency for all the species to systematize their behaviours into coherent and meaningful systems of increasing complexity as maturation takes place. Thus the development of intelligence in a child is a process that is not divorced from such aspects of maturation as proper interaction between the genetic endowment and the environment through the 'big muscle activity' involving the 'whole' organism. The faster the child moves, the faster he grows up; the more efficiently he develops into a "thinking and acting" animal. Getman, kephart, Newell etc. have unequivocally shown that "movement is the basis for intelligence".

According to R. B. Cattel as referred by Gupta (1989)3, 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.

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II. MATERIALS AND METHODS:

Subjects:

A total Two hundred (200) school level player consists of One hundred (100) basketball and rest of them handball players 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) 4´10 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 Basketball group were presented in a tabular form.

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

		Total Fitness (Basketball group)	Total Intelligence (Basketball group)
Total Fitness (Basket ball group)	Pearson correlations	1.000	0.0.93 *
	Sig. (2 tailed)	-	0.000
	N	100	100
Total Intelligence (Basket ball group)	Pearson correlations	0.0.93 *	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 basketball players.

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

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

		Total Fitness (Handball players)	Total Intelligence (Handball players)
Total Fitness (Volleyball)	Pearson correlations	1.000	0.0.96 *
	Sig. (2 tailed)	-	0.000
	N	100	100
Total Intelligence (Volleyball)	Pearson correlations	0.0.96 *	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 volleyball players.

It may be concluded that handball group was highly correlated than basketball group 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	Basketball group	Handball group
Pull-up	50.15	61.00
Sit-up	32.50	33.50
40 yard shuttle run	66.35	58.35
Standing broad jump	65.05	44.00
50 yard dash	51.45	58.30
1.5 mile run	69.60	65.05

Table-3 showed that the basketball group was better in 40 yard shuttle run, standing broad jump and 1.5 miles run than their counterpart and the handball group was better in Pull-up and 50 yard dash than basketball group. In case of sit-up both groups were scored more or less same.

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.

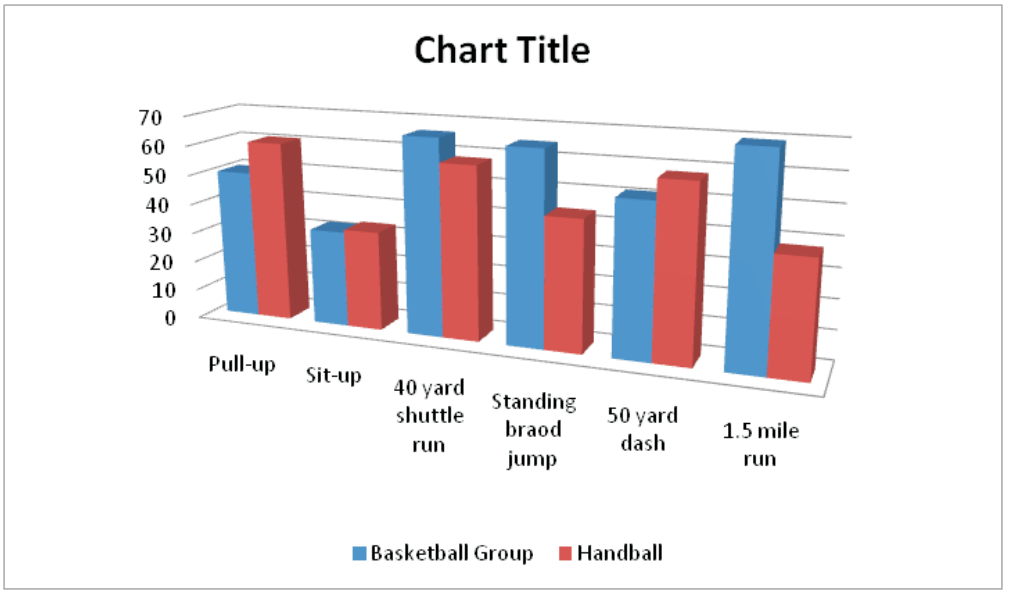


Figure-1 also showed that the basketball group was better in 40 yard shuttle run, standing broad jump and 1.5 miles run than their counterpart and the handball group was better in Pull-up and 50 yard

dash than basketball group. In case of sit-up both groups were scored more or less same.

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

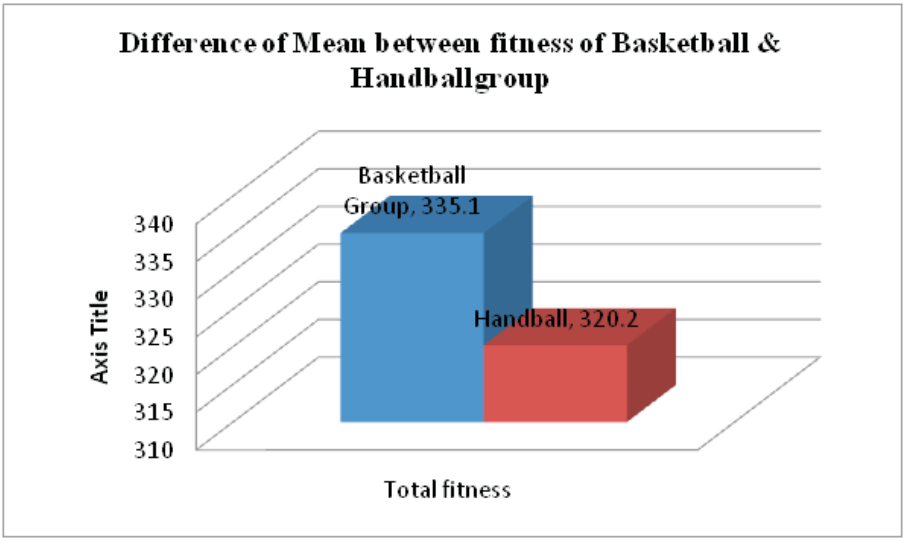
Table 4: Comparison of Mean values of total fitness and total intelligence between two groups.

	Basketball group	Handball group
Total fitness	335.10	320.20
Total Intelligence	100.00	97.00

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



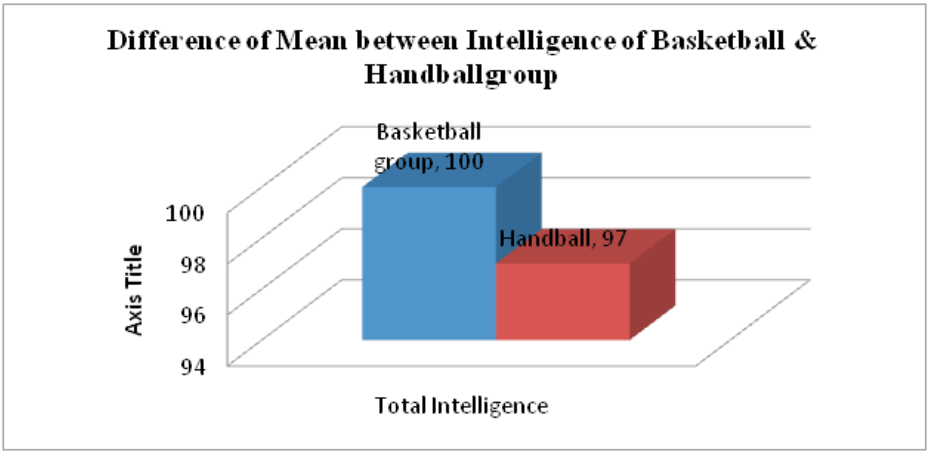


Figure-2 showed that both in total motor fitness scores and in total intelligence scores basketball group was better than the handball group.

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.

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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