



A COMPARATIVE STUDY ON SELECTED PHYSICAL FITNESS COMPONENTS BETWEEN DEAF & DUMB AND NORMAL SCHOOL BOYS OF WEST BENGAL

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ABSTRACT:

Objective: The objective of the study was to compare the selected physical fitness components between the Deaf & Dumb and Normal school boys of west Bengal.

Methodology: For the purpose of the study forty two (N=42)) subjects were randomly chosen of which twenty two were deaf and dumb boys ($n_1=22$) and twenty were normal school boys ($n_2=20$). The age of the children ranged from 12 to 20 years. They were selected from three separate districts of West Bengal - Kolkata, Burdwan and Hooghly. The five different physical fitness components i.e. Speed, Agility, Muscular endurance, Flexibility and Explosive leg strength were considered as variables for the present study. The data were collected by using standard tools and techniques.

Statistics: Mean, standard deviation (SD) and independent t- test were the statistics used in this study for data interpretation. Level of significant difference between two groups was set at $p<0.05$. For statistical calculations Excel Spread Sheet of windows version 7 was used.

Results: Result of present study revealed that in Speed, Agility and Muscular Endurance no significant difference exists between the Normal and Deaf & Dumb Boys. But in Flexibility & Explosive leg strength significant difference exist between the Normal and Deaf & Dumb Boys.

Conclusion: It can be concluded from the results of the study that in flexibility the normal boys are better than the deaf and dumb boys but the Explosive leg strength of the Deaf & Dumb Boys are better than the normal boys.

Key Words: Deaf & Dumb, Normal Boys, Speed, Agility, Muscular endurance, Flexibility and Explosive leg strength,

INTRODUCTION

Not long ago individual having some physical or mental defects were looked down upon as useless persons for the society. The term „*Handicapped*“ or „*Disabled*“ were leveled against their identity. They were not whole heartedly accepted by others in the society [1]. With the passage of time the outlook began to change. Social reformers and educationists are striving heard to



integrate the physically challenged person with the main stream. It is our social responsibility to see it that physically challenged people leads a self reliant independent and emotionally stable life. Educationists and school administrators are now working together to fulfill that aim[2]. Advancement in scientific knowledge is helping them in many ways in their effort. It is not easy to integrate these people with the society. Due to physical disability they face the challenge to perform any task as par with the normal people.

Children are the future of a nation. For an emerging and developing country like India, development of underprivileged children holds the key to the progress of the nation itself. Education for underprivileged Children is the key whether we are addressing healthcare, poverty, population control, unemployment or human rights issues. Youth is an integral part of democratic society and future asset of Mankind. It is universally recognized that Sport is an effective way for channelizing the energies of Youth for productive & meaningful purposes. Fitness has proved as a powerful but highly undervalued and under exploited tool for promoting solidarity and in contributing to an atmosphere of tolerance and understanding to the special population as an undefined part of the society[3].

Deaf and Dumb“ is the term commonly used to describe persons who, through deafness, are unable to hear the spoken words of others, and who, consequently, remain dumb. Deafness is the cause, dumbness the consequence. Thus the term "deaf and dumb" is a misnomer, for the deficiency is single, not two-fold, although in the result it affects the two organs of hearing and speech. Among various special populations deaf & dumb is a very common type of disability seen in our society not in a very negligible quantity. It is needed to take special care and attention of this population from their childhood to give them ample opportunity to be self sufficient in future. That is why various schools have been established for the special populations in our country starting from late seventies up to date. It is needed not only to give them education but also to build a healthy body and mind for them having the prime necessity of physical education as well to make them conscious about their physique, health and fitness [4]. Accordingly the present project is planned to initiate research work from a comparative standpoint to the physical fitness of normal and deaf and dumb school boys of West Bengal.

METHODOLOGY

Total forty two (N=42)) subjects were randomly chosen for this study of which twenty two were deaf and dumb boys ($n_1=22$) and twenty were normal school boys ($n_2=20$). The age of the children ranged from 12 to 20 years. They were selected from three separate districts of West Bengal-Kolkata, Burdwan and Hooghly. The five different physical fitness components i.e. Speed, Agility, Muscular endurance, Flexibility and Explosive leg strength were considered as variables for the present study. The different standard physical fitness tests were followed to measure several components. The speed was measured by *50m dash*; Agility was measured by *(4 x 10m) shuttle run*; Muscular endurance was measured by *Bent-Knee Sit-ups for 1 min*; flexibility by *Modified sit and reach test*; and explosive leg strength was measured by *standing broad jump*. Apart from the above five variables the age, height and weight of all the subjects were measured. Mean, standard deviation (SD) and independent t- test were the statistics used in this study for



data interpretation. Level of significant difference between two groups was set at $p < 0.05$.

RESULTS

In **Table – 1**, the mean and standard deviation of age, height, and weight of the subjects for different groups have been presented.

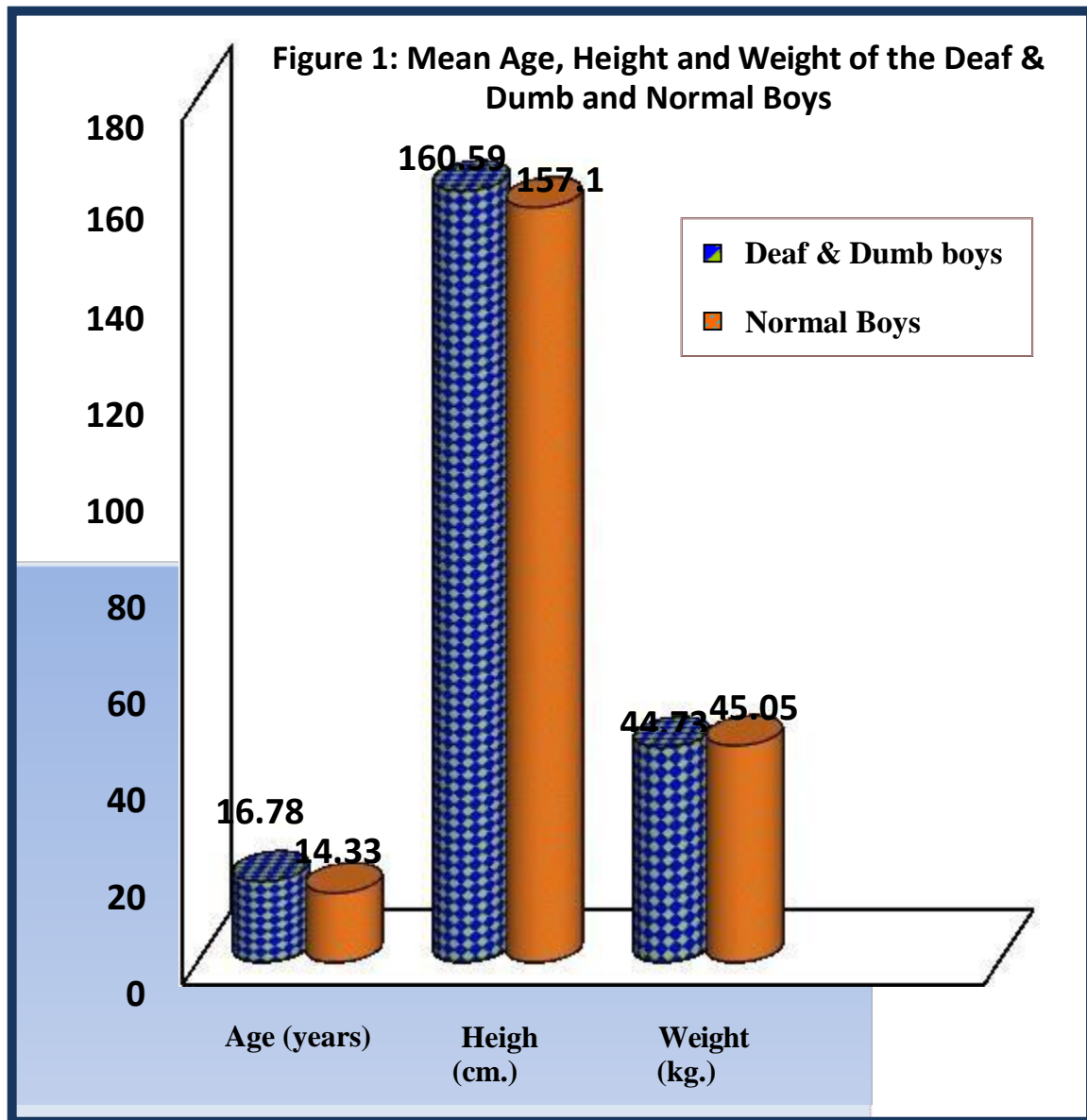
Table - 1
Descriptive statistics of different groups of subjects in age, Height and weight

Thus **Table-1** shows that the number of subjects for **Deaf & Dumb Boys** was 22 and the mean age of the subjects was 16.78 years with a standard deviation ± 3.00 . The mean height was 160.59 cm. with a standard deviation of ± 8.25 . The mean weight for the same age group was 44.73 kg with a standard deviation and range of ± 8.09 . For **Normal Boys**, the number of subjects was 20 and the mean age of the subjects was 14.33 years with a standard deviation and range of ± 0.97 . The mean height was 157.10 cm. with a standard deviation of ± 5.37 . The mean weight for the same age group was 45.05 kg with a standard deviation and range of ± 7.10 .

Sl. No.	Name of the Group	No. Of Subjects	Age (years)	Height (cm.)	Weight (Kg.)
			Mean \pm S.D	Mean \pm S.D	Mean \pm S.D
1	Deaf & Dumb boys	22	16.78 \pm 3.00	160.59 \pm 8.25	44.73 \pm 8.09
2	Normal Boys	20	14.33 \pm 0.97	157.10 \pm 5.37	45.05 \pm 7.10
Total no. of Subjects: (N) = 42					

Table-1 also shows that the total number of subjects were 42.

In the **Figure-1**, mean age, height and weight of the subjects of different groups have been shown.



The mean and standard deviation of obtained data belonging to physical fitness items viz. *speed* as measured by 30m dash, *agility* as measured by 4x10m shuttle run, *muscular endurance* as measured by bent knee sit ups for 1min, *flexibility* as measured by modified sit and reach test, *explosive leg strength* as measured by standing broad jump of normal and deaf & dumb boys and their respective Mean Difference, Standard Error, „t“ – value and „P“ – value have been presented in **Table- 2**.



Table – 2

Mean, Standard Deviation, Mean Difference, Standard Error, t-value and p-value of Physical Fitness Components of Normal and Deaf & Dumb Boys

Name of the variables	(Mean ± SD)		Mean Diff.	S. E.	‘t’ value	‘P’ value
	Normal Boys	Deaf & Dumb Boys				
Speed (m/sec)	5.63 ± .46	5.44 ± 0.52	0.186	0.151	1.259	0.2191
Agility (m/sec)	11.68 ±1.54	12.27 ± 2.07	0.588	0.559	1.039	0.3049
Muscular Endurance (no. of sit-ups)	29.95 ± 8.82	24.91 ± 8.01	5.040	2.609	1.941	0.0593
Flexibility (inch)	5.17 ± 2.75	2.74 ±1.47	2.434	0.690	3.618*	0.0008
Explosive leg strength (m)	1.51 ± 0.28	1.84 ± 0.28	0.333	0.086	3.815*	0.0005

Table value of ‘t’ at 0.05 level of confidence for $df(40) = 2.0211$, * Sign indicates Significant difference.

From **Table-2** it was found that the mean and standard deviation of **Speed** of normal boy were 5.63 ± 0.46 sec and deaf and dumb boy were 5.44 ± 0.52 sec, mean difference 0.186, standard error 0.151, t value 1.2489, p value 0.219. From the table value at 0.05 level of confidence [$df(40) = 2.0211$], it was observed that there had no significant difference in speed between normal and deaf & dumb boys of West Bengal. Though the difference was not statistically significant but the speed of the normal boys were grater in value than the deaf & dumb Boys.

From **Table-2** it was also found that the mean and standard deviation of **Agility** of normal boy were 11.68 ± 1.54 sec and deaf and dumb boys were 12.27 ± 2.07 sec. The mean difference was 0.588, standard error 0.559, t-value 1.0393, p-value 0.3049. From the table value of „t“ at 0.05 level of confidence [$df(40) = 2.0211$], it was observed that there had no significant difference in agility between normal and deaf & dumb boys of West Bengal. Though the difference was statistically insignificant but the agility of the deaf & dumb boys were grater in value than the normal boys.

From **Table-2** it was also found that the mean and standard deviation of **Muscular Endurance** (in no of sit-ups) of normal boys were 29.95 ± 8.82 and deaf & dumb boys were 24.91 ± 8.01 , mean difference 5.040, standard error 2.609, t-value 1.941, p-value 0.0593. From the table value of „t“-ratio [$df (40) = 2.0211$] it was observed that there had no significant difference in muscular endurance between normal and deaf & dumb boys of West Bengal at 0.05 level of confidence. Though the difference was statistically insignificant at 0.05 level of confidence but the „t“-value was very close to the critical value required for the significant difference from which it was also evident that the normal boys were better in muscular endurance than the deaf & dumb boys of West Bengal.

It was also found from **Table -2** that the mean and standard deviation of **Flexibility** of normal boys were 5.17 ± 2.75 inch and deaf & dumb boys were 2.74 ± 1.47 inch, and respective mean difference 2.434, standard error 0.690, t value 3.6177, p value were 0.0008. From the table value of „t“-ratio [$df (40) = 2.0211$] it was observed that there had significant difference in flexibility between normal and deaf & dumb boys of West Bengal at 0.05 level of confidence. It was also evident from Table -2 that the flexibility value of the normal boys had been greater than the deaf & dumb boys.

And from **Table-2** it was also found that the mean and standard deviation of **explosive leg strength** of normal boys were 1.51 ± 0.28 m and deaf and dumb boy students were 1.84 ± 0.28 m, respective mean difference 0.333, standard error 0.086, t-value 3.8147 and p-value were 0.0005. It was also observed from the table that there was significant difference existed in explosive leg strength between normal and deaf & dumb boys of West Bengal. It was also evident from the table that in explosive leg strength of the deaf & dumb school boys were better than the normal school boys.



Figure 2: The mean value of speed, agility, muscular endurance, flexibility and explosive leg strength of normal and deaf & dumb boys.



DISCUSSION

The results of the present study indicated that in Speed, Agility and Muscular Endurance there were no significant difference found between the Normal and Deaf & Dumb school Boys of West Bengal. The result of the study was in consonance with Kathleen Ellis, (2000) and partially was not in agreement [5-6]. However, significant difference was found in Flexibility between the Normal and Deaf & Dumb School Boys of West Bengal where the normal boys were better than the deaf & dumb boys. The result of the study was in consonance [7]. Again in Explosive leg strength it was observed that the deaf & dumb boys were significantly better than the normal boys. This was in agreement with Walowska, Jagoda; Bolach, Eugeniusz; (2011) but at the same time it was in controversy [8-9].

CONCLUSION

On the basis of analysis of data the following conclusions were obtained for the present study :-

- 1) In Speed, Agility and Muscular Endurance no significant difference exist between the Normal and Deaf & Dumb school Boys of West Bengal.
- 2) But in Flexibility & Explosive leg strength there are significant difference between the Normal and Deaf & Dumb school Boys of West Bengal. It also confirms that the in flexibility of the normal boys are better than the deaf and dumb boys but the Explosive leg strength of the Deaf & Dumb Boys are better than the normal boys.

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