



COMPARISON OF GRIP STRENGTH OF SCHOOL CHILDREN OF ALLAHABAD DISTRICT

Mr. Nripendra Mani Sharma, Ph. D Scholar

Dr. Sanjeev Yadav and Dr. Brij Kishore Prasad, Associate Professor
Dept. of Health Sciences, LNIPE, Gwalior (M.P.)

Abstract

The Main Purpose of the study was to analyze differences in terms of the Grip Strength of school-going children of Allahabad District in Uttar Pradesh. A total of One hundred (Fifty male Subjects each from Urban area and Rural area schools) were selected as subjects of study. From the Urban area the subjects were taken from Government Inter College, Allahabad whereas in terms of the Rural area the subjects were taken from Jawahar Navodaya Vidyalaya, Allahabad. The age group of the subjects ranged from 12 to 14 years. The data was collected during school hours (8 a.m to 12 noon) by administering Grip Dynamometer Takei 5401. Independent t Test was employed to analyse the difference in terms of Grip Strength of school children. By using Independent t Test it was found that there was significant difference among Grip Strength of school children. Calculate t value of Right-hand Grip Strength was 5.60 and Left-hand Grip Strength was 8.16 at 0.05 Level of Significance which clearly shows that there was a significant difference among Grip Strength of school children.

Keywords: Grip Dynamometer, Grip Strength, Urban and Rural.

Introduction

Hand Grip Strength is an important element so as to determine the nutritional deficiency, Muscular efficiency. Now, a days a number of chronic diseases are on rise and Hand Grip Strength provides a means to predict Muscular

strength and prevents early mortality chances thereby reducing burden on individual as well as society.

With the use of Hand Grip Strength Test the maximum level of isometric strength of hand and forearm muscles can be known easily. Hand Grip Strength plays a very important role in sports activities as strong grip of hand helps in many ways. Every small or larger activity of daily life also requires use of hands and therefore it is extremely useful. Hand Grip Strength is a measure to identify Musculoskeleton inability. It plays an important role in the identification of sports talent and development of norms among a particular population which provides a way of self-evaluation. As we grow older there are increased chances of deterioration of our Grip Strength which directly affects our day to day activities. It also reflects chances of heart disease and stroke. So therefore small amount of Physical activity daily can prove to be beneficial in reducing such disability and help to maintain proper health, longevity without devoid of any life pleasures. Exercises of strengthening fingers, thumb, wrists are extremely beneficial in avoiding issues of lower grip strength in older age.

Methodology

Total one Hundred (Fifty male School children each from Urban area and Rural area School) were selected as subjects of study. From Urban area the subjects were taken from Government Inter College, Allahabad whereas



in terms of Rural area the subjects were taken from Jawahar Navodaya Vidyalaya, Allahabad. The age group of the subjects ranged from 12 to 14 years. The data was collected during school hours (8 a.m. to 12 noon). Besides this all the subjects enjoyed good health as per the records of respective school. Sole variable selected for the study was Grip Strength. Grip Strength of both Right and Left Hand was assessed with the help of Grip Dynamometer Takei 5401 and measurement recorded in Kilograms. The data was collected by administering the test on male school children of urban and rural school of Allahabad district, Uttar Pradesh.

Analysis of Data and Results

The statistical analysis of data collected on 50 Male school children each from urban and rural area school to analyse the difference in Grip Strength have been presented in this chapter. The data presenting difference in Grip Strength of urban and rural school children was examined by using Independent t Test. The Independent t Test values were tested for significance at 0.05 level. The mean, standard deviation and Test values were computed to analyze the data statistically. The results have been presented in the following tables:

TABLE No 1
DESCRIPTIVE STATISTICS OF RIGHT HAND GRIP
STRENGTH OF RURAL & URBAN SCHOOL CHILDREN

Children	Mean	Std. Dev.	Mean Difference	Std. Error	T Ratio
Rural	28.15	7.86	7.29	0.82	5.60*
Urban	20.86	5.08			

*Significant at 0.05 level of significance $t(98)(0.05) = 1.98$

Table 1 indicates that the Mean and Standard Deviation of Rural school children is 28.15 and 7.86 Table 1 indicates that the Mean and

Standard Deviation of Urban school children is 20.86 and 5.08. It also indicates that the Mean Right Hand Grip Strength of Rural school children (28.15) is greater than Mean Right Hand Grip Strength of Urban School Children (20.86). Table 1 reveals that the value of t is 5.60. Thus, the null hypothesis of equality of means of two groups is rejected and concluded that the Right Hand Grip Strength of Rural and Urban School Children are different.

TABLE No 2
DESCRIPTIVE STATISTICS OF LEFT HAND GRIP
STRENGTH OF RURAL & URBAN SCHOOL CHILDREN

Children	Mean	Std. Dev.	Mean Difference	Std. Error	T Ratio
Rural	28.61	6.75	9.53	0.95	8.16*
Urban	19.08	4.75			

*Significant at 0.05 level of significance $t(98)(0.05) = 1.98$

Table 2 indicates that the Mean and Standard Deviation of Rural school children is 28.61 and 6.75 Table 2 indicates that the Mean and Standard Deviation of Urban school children is 19.08 and 4.75. It also indicates that the Mean Left Hand Grip Strength of Rural school children (28.15) is greater than Mean Left Hand Grip Strength of Urban School Children (20.86). Table 1 reveals that the value of t is 8.16. Thus, the null hypothesis of equality of means of two groups is rejected and concluded that the Left Hand Grip Strength of Rural and Urban School Children are different.

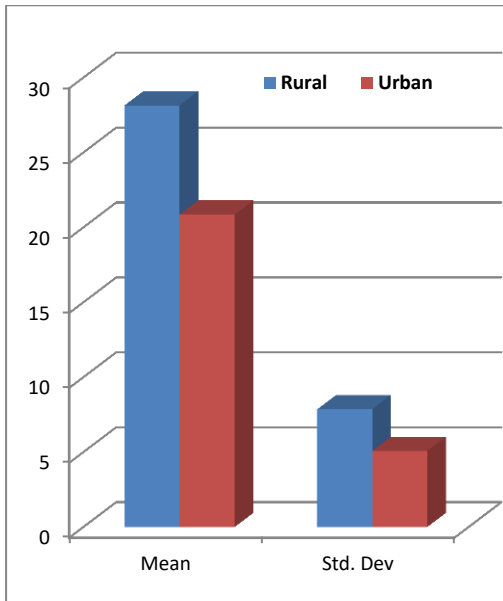


Fig. No 1: Graphical Representation of Mean & Standard Deviation of Rural & Urban school children on Right Hand Grip Strength

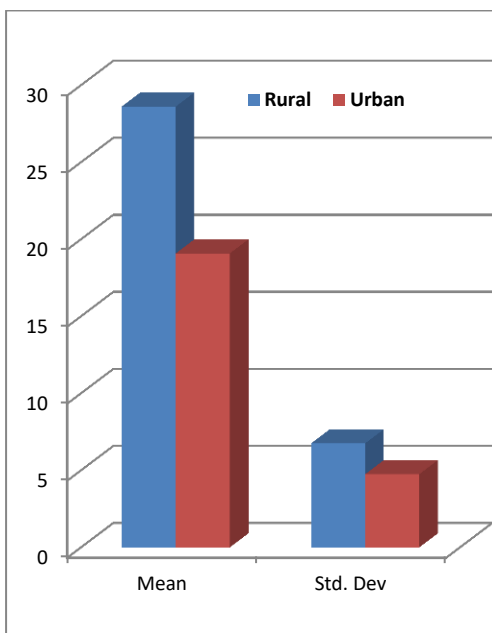


Fig. No 2: Graphical Representation of Mean & Standard Deviation of Rural & Urban school children on Left Hand Grip Strength

Discussion on Findings

Significant difference was found between Rural and Urban School children in Grip Strength of both Right and Left Hand. The Mean value of subjects belonging to Rural area school was higher than their Urban counterparts. Therefore Rural School Children Performed better than Urban School children in Grip Strength of both Right and Left Hand. This may be result of their more ability to do physical work and participation in Physical activities, most of them were from lower socio economic status and most of the children use to carry out regular physical work which improved their physical fitness. Most of their daily works were performed manually instead of machinery. Similar result where found by Sylejmaniblerim (2019) , Koley and Khanna (2011), Sunil Kumar (2011), Niempoog et al. (2007), Tsimeas, Tsiokanos, Koutedakis, et al (2005) and Hager Ross C, Rosblad B (2002).

Conclusion

Significant difference was found between Rural and Urban School children in Grip Strength of both Right and Left Hand. The Mean value of subjects belonging to Rural area school was higher than their Urban counterparts. Therefore Rural School Children Performed better than Urban School children in Grip Strength of both Right and Left Hand. This may be attributed to their more involvement in Physical work, they were all belonging to the middle class families and much of the children use to participate in regular physical activity which made them more physically fit.



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