

AN ANALYTICAL STUDY OF HAND GRIP STRENGTH BETWEEN GOVERNMENT AND NON-GOVERNMENT PHYSICAL EDUCATION TEACHERS OF PUNJAB

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ABSTRACT

The aim of this study was to find out the difference in left-hand grip strength and right-hand grip strength between government and non-government physical education teachers of Punjab. One hundred physical education teachers (50 government + 50 non- government) were selected from Punjab for this study. The age of the subjects was ranged between 30 to 40 years. Selected variables: left-hand grip strength and right-hand grip strength was measured using hand grip dynamometer. Descriptive statistics and independent t-test was employed by 'SPSS Version-23'. The results showed that there was an insignificant difference in left-hand grip strength and right-hand grip strength between government and non-government physical education teachers of Punjab.

Keywords: Fitness, Hand Grip Strength, Dynamometer.

INTRODUCTION

Physical fitness has always been a very important aspect of human life. One of the key goals of physical education is the promotion of health and wellness through exercise, recreation activity, games and sports. A large number of individuals from childhood to old age are now carrying out daily physical exercise to improve health and physical well-being. Physical fitness is an important component of an individual's natural growth and development to lead a healthy lifestyle. A serious threat to an individual's wellbeing is physical inactivity and unconstructive lifestyle behaviors. Scientific evidence has been generated to demonstrate that people's general health and physical performance abilities rely primarily on their level of physical fitness. (Edwin A, 1964)

Health-related fitness is described as the ability to carry out strenuous activity without getting tired, demonstrating characteristics that limit the risk of developing diseases and disorders that affect the functional capacity of an individual. Muscular strength, muscular endurance, flexibility, cardio- respiratory endurance and body composition are recognized as components of health-related physical activity. However, the level of development of each activity varies with the form of physical activity. (Siedentop, 1994)

Health-related fitness relates to the ability to perform activities of daily living without undue fatigue and is conducive to a low risk of premature hypokinetic diseases. Components of health-related fitness are classified into cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition. (Werner & Sharon, 2013)

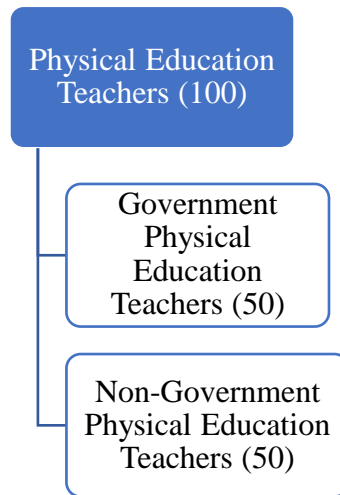
Maximal contraction power of the muscles is known as muscular strength. The muscular strength is usually measured with respect to individual group of muscles acting together. Muscular strength is tested with the help of dynamometers which measure the amount of force exerted in a single effort by a particular group of muscles.

AIM OF STUDY

The aim of the present study was to find out the difference in left-hand grip strength and right-hand grip strength between government and non-government physical education teachers of Punjab.

MATERIAL AND METHODS

Total one hundred physical education teachers (50 government + 50 non- government) were selected as subjects from Punjab for this study. The age of subjects was ranged between 30-40 years. Selected variable left-hand grip strength and right-hand grip strength was measured using hand grip dynamometer. Hand grip dynamometer is considered a valid and reliable instrument for measuring the grip strength of hands (Satish Kumar Anumala, 2014).

**FIGURE-I****DESCRIPTION OF SAMPLING PLAN****PROCEDURE**

Before the data collection, consent was taken from the subjects and purpose of the study was explained. Demonstration of the testing protocol was given to the subjects by the researcher. Three trials were given and highest reading was taken as score. After every effort, one-minute break would be given to the subject. Measurement was taken in nearest to 0.1 Kg/lbs. (Kansal, 2012)

STATISTICAL TECHNIQUE

Descriptive statistics i.e., mean and standard deviation were calculated. As per objective of the study, 't-test' was applied to find out the difference between various groups. All tests were employed with the help of SPSS-software version 23. Level of significance was set at 0.05.

RESULTS

TABLE-1

DESCRIPTIVE STATISTICS AND T-VALUE FOR LEFT-HAND GRIP STRENGTH
VARIABLE

Group Name	Mean	SD	t-value	Sig.
Government Physical Education Teachers	35.64	5.39	-1.55	0.13
Non-Government Physical Education Teachers	37.17	4.44		

SD = Standard Deviation

*Indicate significant at 0.05 level

Table-1 shows that values of mean and standard deviation for left-hand grip strength variable for government and non-government physical education teachers' group are 35.64 ± 5.39 and 37.17 ± 4.44 respectively. It also shows that p-value ($p = 0.13$) is more than 0.05 which means that there exists an insignificant difference between government and non-government physical education teacher in case of left-hand grip strength variable.

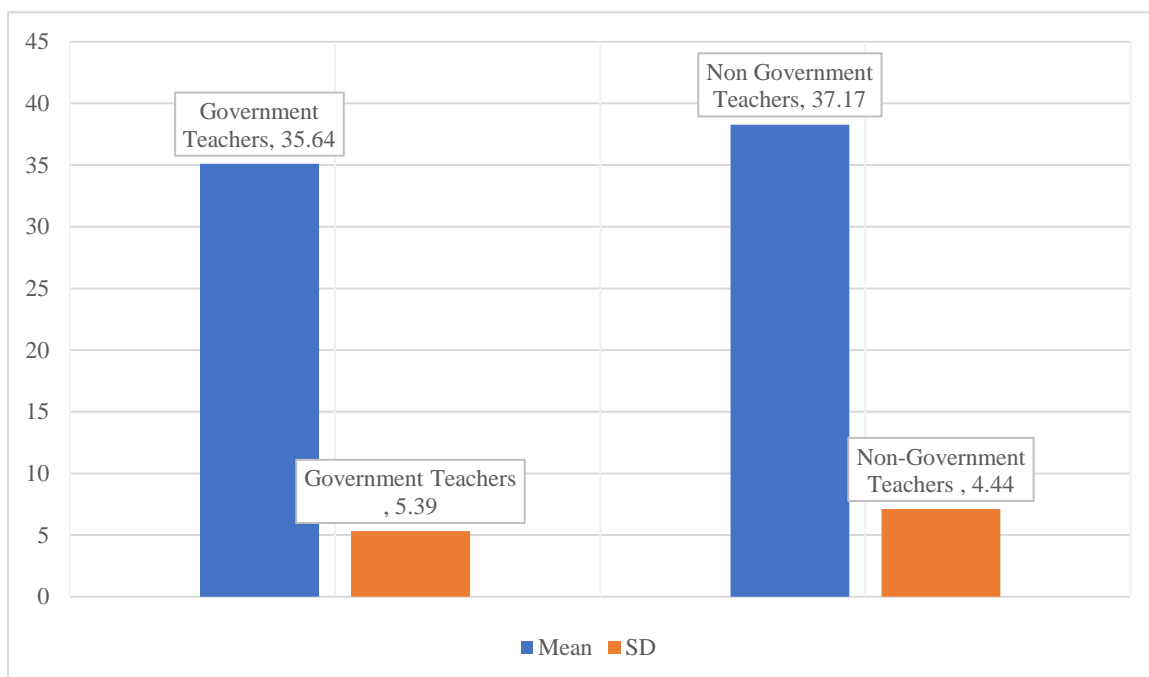


FIGURE-II

GRAPHICAL REPRESENTATION OF DESCRIPTIVE STATISTICS FOR LEFT-HAND GRIP STRENGTH VARIABLE

TABLE-2
DESCRIPTIVE STATISTICS AND T-VALUE FOR RIGHT-HAND GRIP STRENGTH VARIABLE

Group Name	Mean	SD	t-value	Sig.
Government Physical Education Teachers	38.98	4.50	-.327	.744
Non-Government Physical Education Teachers	39.33	6.07		

SD = Standard Deviation

Table-2 shows that values of mean and standard deviation for right-hand grip strength variable for government physical education teachers' group and non-government physical education teachers' group are 38.98 ± 4.50 and 39.33 ± 6.07 respectively. It also shows that p-value ($p = .74$) is more than 0.05 which means that there exists an insignificant difference between government physical education and non- government physical education teachers in case of right-hand grip strength variable.

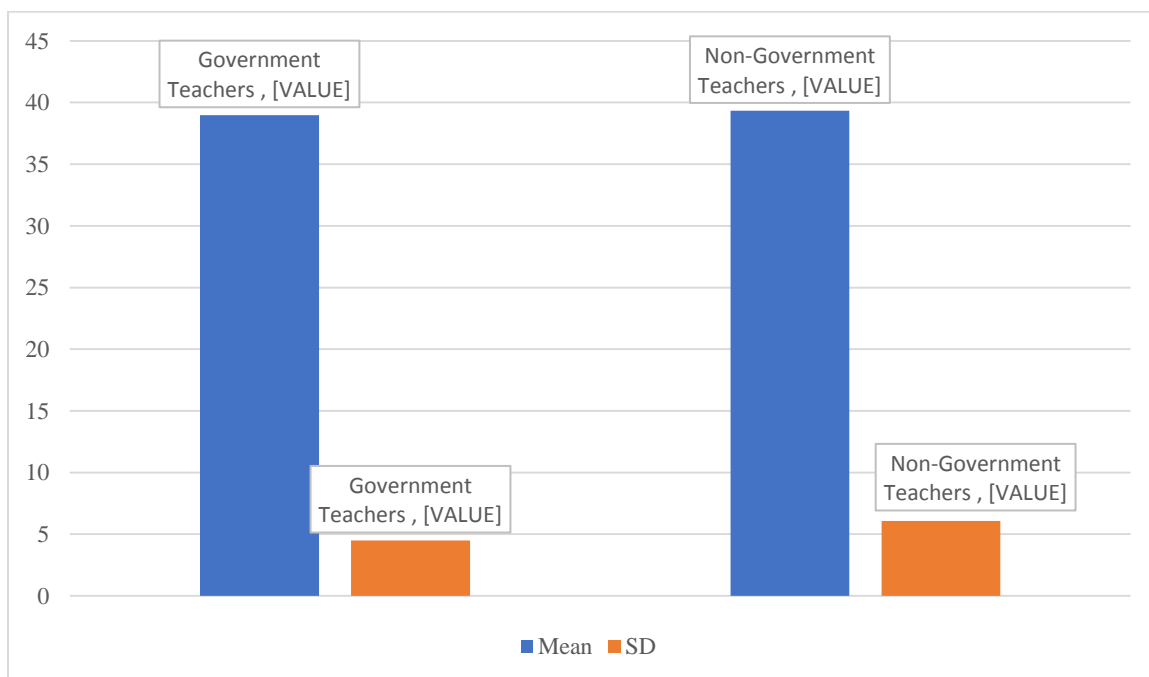


FIGURE-III

GRAPHICAL REPRESENTATION OF DESCRIPTIVE STATISTICS FOR RIGHT-HAND GRIP STRENGTH VARIABLE

DISCUSSION

The aim of the present study was to find out the difference in left-hand grip and right-hand grip strength between government physical education and non-government physical education teachers of Punjab.

The results of the study showed that there was an insignificant difference between government and non-government physical education teachers in case of left-hand grip strength and right-hand grip strength variables. Grip-strength is an important factor in terms of fitness for physical education teacher because he has to teach various kinds of physical activities: with and without apparatus. In case of teaching activities with apparatus, grip strength plays a major role, For example; Parallel bars and Roman rings events in gymnastic, Pole vault in athletics etc. Physical education teachers of both sectors: Government and Non-government teach practical activities in sports playgrounds so it might be the reason that this study did not find any statistically significant difference in left-hand grip strength variable and right-hand grip strength variable between government and non-government teachers of Physical education. The

result of this finding is supported by the study conducted by Chaphekar et al. (2021). conducted a study to compare hand grip strength in different wrist positions in right and left-handed tennis players. For this study hand grip strength of 40 tennis players (20 right and 20 left handed) was measured with Jamarhandheld dynamometer in different wrist positions. Age, height and weight were also measured for this study. The results of the study showed that there was no significant difference in hand grip strength in different wrist positions between right and left-handed tennis players.

CONCLUSION

The present study concluded that male government and non-government physical education teachers of Punjab do not differ in left- and right-hand grip strength.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to research, authorship and/or publication of this article.

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