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A Comparative Study on Health-Related Physical Fitness between Different Secondary School Boards

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Abstract

Physical fitness concerned with major area of search of physical and mental well-being of human being. The major components of physical fitness are the health related and performance related physical fitness. The benefits of good health related physical fitness in day-to-day life are very well known to human being. Hence, in order to get some information about health-related physical fitness of school going boys and compare between W.B.B.S.E. and W.B.B.M.E school boards of school boys. A sample of thirty (30) W.B.B.M.E (N1=30) and thirty (30) W.B.B.S.E (N2=30) male students age ranging between 12 to 15 years studying in North 24 Parganas, West Bengal was taken as the subjects for this present study.Purposeful random sampling procedure was adopted in the present study.the following health-related fitness variables has been selected for pursuing the aims of the study, Muscular strength and Muscular endurance. The data analyzed and compared with the help of statistical procedure in which arithmetic mean, standard deviation and Independent "t" test used to compare the data. The level of significance was set at 0.05. Results of the study shows that there was no significant difference between W.B.B.S.E. and W.B.B.M.E students in Muscular Endurance. And also, the results of the present study showed that there was a significant difference between W.B.B.S.E. and W.B.B.M.E students on Muscular Strength. Where as W.B.B.S.E.students were better in Muscular Strength than W.B.B.M.Estudents were compared with the mean values.

Keywords: Health related physical fitness, Muscular strength and Muscular endurance

INTRODUCTION

It has been said that one of the most important indicators of health at any age is physical fitness. General fitness (a state of health and well-being) and specific fitness (a task-oriented definition based on the capacity to perform particular components of sports or jobs) are the two linked ideas that make up physical fitness. Typically, exercise, a healthy diet, and adequate sleep are the keys to becoming physically fit. It is a necessary aspect of existence. Fitness used to be widely defined as the ability to perform daily tasks without experiencing excessive weariness. However, after the industrial revolution, lifestyle changes made this definition insufficient as automation increased leisure time. These days, physical fitness is seen as a gauge of the body's capacity to perform well in both work and play, to



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remain healthy, to withstand hypokinetic illnesses, and to handle emergencies. Numerous underlying factors can affect an athlete's performance. Even while sport scientists and practitioners cannot alter an athlete's genetic composition, regular strength training can increase an athlete's absolute and relative muscle strength. Muscular strength is the ability to exert force on an external object or resistance (Stone, 1993; Siff, 2001). The demands of an activity or event may require a person to exert considerable effort against gravity in order to regulate their own body mass.

Good health is closely linked to the health-related aspects of physical fitness. The ability of the cardiovascular system (heart, lungs, and vessels) to effectively supply oxygenated blood to working muscles and the muscles' ability to use the oxygen supplied by the blood supply as a source of energy for movement are the five components of health-related physical fitness. Body composition is the proportion of muscle, fat, bone, and other tissues that make up the body. Interestingly, though, it may also restrict performance in certain endurance exercises in addition to the maximal strength, power, and local muscle endurance attained with a particular load (Izquierdo et al., 2006; Mayhew et al., 1992). Maximum strength, local muscular endurance, or power exerted during various resistance exercises, jumps, or throws have all been the subject of numerous studies to date (Baker, 2001; Cronin and Sleivert, 2005; Izquierdo et al., 2002; Kawamori and Haff, 2004; Newton et al., 2002). However, no scientific studies were found that determine whether certain strength or power variables have a greater influence on upper body endurance performance.

METHODS

Subjects

A sample of thirty (30) W.B.B.M.E (N_1 =30) and thirty (30) W.B.B.S.E (N_2 =30) male students age ranging between 12 to 15 years studying in North 24 Parganas, West Bengal was taken as the subjects for this present study. Prior to testing them, a meeting of all subjects was called at this meeting they were explained about the purpose the study, requirement of testing procedures made them understand about what they were actually required to fulfil the basic requirements of this study. The age of the students was ascertained from the admission registers of the concerned schools.

Criterion measure

Muscular strength measure by Pull ups in Numbers and Muscular endurance strength measure by Bent Knee Sit ups in Stopwatch (seconds).

Statistical procedure

The data analyzed and compared with the help of statistical procedure in which arithmetic mean, standard deviation and Independent "t" test used to compare the data. For testing hypothesis, level of significance was set at 0.05 level of confidence.

RESULTS

Table-1

The Mean, Standard Deviation and t-Values on Muscular Strength of W.B.B.M.E and W.B.B.S.E students



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Variables	Groups	Mean	SD	Mean Difference	Std. Error	't'- ratio
MUSCULAR STRENGTH	W.B.B.S.E.	13.06	5.87	3.26	1.28	*2.54
	W.B.B.M.E.	9.80	3.85			

*Significant at 0.05, $t_{0.05}(58) = 2.00$

Table-2

The Mean, Standard Deviation and t-Values on Muscular Endurance of W.B.B.M.E and W.B.B.S.E students

Variables	Groups	Mean	SD	Mean Difference	Std. Error	't'- ratio
MUSCULAR ENDURANCE	W.B.B.S.E.	30.40	9.65	0.46	2.2	0.21
	W.B.B.M.E.	30.86	7.22			

DISCUSSION

The data for the chosen health-related physical fitness characteristics of W.B.B.S.E. and W.B.B.M.E. schools were examined by the researcher. The researcher discovered that there was no discernible difference in physical endurance between W.B.B.S.E. and W.B.B.M.E. pupils. There were no notable changes because the boys lived in the same neighbourhood, had similar surroundings, and led nearly identical lifestyles. Additionally, the present study's findings demonstrated a substantial difference in muscular strength between W.B.B.S.E. and W.B.B.M.E. pupils. When comparing the mean results, W.B.B.S.E. students had greater muscular strength than W.B.B.M.E. students.

When using isometric testing, sport scientists and practitioners need to consider the athlete's sport-specificity. To put it another way, the athlete must be put to the test in a way that links their sport's success to their own. As an illustration, prior studies have shown that the movements generate the most force and power (Garhammer, 1980). Because dynamic strength tests resemble the motions used in different sports or events, they might be seen as more indicative of an athlete's talents. Previous studies have examined the impact of particular training regimens (Rønnestad et al., 2011; Baker, 2001), the impact of a competitive season on muscular strength. However, there are currently no comparable studies that incorporate these factors in either upper- or lower-body activities(Gorostiaga et al., 2006; Schmidt et al., 2005; Hoffman et al., 1991; Granados et al., 2008). We thus concur with Cronin and Sleivert (2005) and Dugan et al. (2004), who suggested that in order to draw firm conclusions, a more thorough investigation of the factors influencing performance in strength exercises against resistance, such as upper and lower extremity length, is necessary.



CONCLUSION

In order to provide the best training stimuli to improve particular strength attributes that translate to performance, sport scientists and practitioners may track an individual's isometric, dynamic, and reactive strength. An individual's force-time characteristics can be improved by having stronger muscles, which can therefore improve their athletic performance. The physical strength measurements of W.B.B.S.E. and W.B.B.M.E. pupils showed notable disparities. In terms of muscular strength, W.B.B.S.E. students outperform W.B.B.M.E. pupils. The muscular endurance scores of W.B.B.S.E. and W.B.B.M.E. students did not differ significantly.

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