International Journal of Advanced Education and Research
ISSN: 2455-5746, Impact Factor: RJIF 5.34
www.alleducationjournal.com
Volume 2; Issue 2; March 2017; Page No. 20-22

Comparative analysis of selected motor fitness variables between government and private high school students

[1] Siju P John, [2] Dr. George Abraham

[1] Physical Education Teacher, St. Francis H.S.S, Mattom, Thrissur, Kerala, India
[2] Assistant Professor, Department of Physical Education And Sports Sciences, Annamalai University, Tamil Nadu, India

Abstract
The present study was to analyse the physical fitness components of government and private high school students. To achieve this purpose, hundred (n = 100) high schhol boys students were selected, out of fifty (n = 50) from government scetor and fifty (n = 50) from private sector. All the subjects were selected at random and their age ranged between 14 and 17 years. The explosive power and speed were selected as criterion variables for this study and they were assessed by using standing broad jump and 50m run. The collected data were analysed by independent t ratio to find out the significant difference between the groups. The results of the study revealed that there was a significant ($p \leq 0.05$) difference in explosive power and speed between high school boys students of government and private sector.

Keywords: motor fitness, explosive power, standing broad jump, speed

Introduction
Motor fitness is a term that describes an athlete's ability to perform effectively during sports or other physical activity (www.slideshare.net) [11]. Total fitness is essential for healthful living. Physical education is potentially a powerful force in the present day society to develop total fitness. Fitness is determined by what we do twenty four hours a day. To live, work, sit, walk, think, eat and sleep. Fitness helps to enjoy the life (Lawrence, 1975) [13]. Physical fitness is not a static factor and it varies from individual to individual and with the same person from time to time depending on various factors (Harrison, 1976) [9]. In the context of physical fitness, 'exercise' refers to any activity involving a fairly high degree of physical movements that makes one breathless and sweaty if it is done vigorously during physical exercise one has to breath more deeply to get more oxygen into the lungs and the heart must beat harder and faster to pump blood to the muscles (Dorgo, 2009) [5]. The physical benefits are unarguable but there are physiological benefits also, many people have sound sleep after exercise, wake up more refreshed and are more alert and better able to concentrate than when they are unfit. Exercise of the right sort should make one feel better live longer and have less illness (Tony Smith, 1983) [15].

Explosive power is one of the most important features of athletes. The biological basis is represented only by the energy aspects of substrate utilization, as many investigators believe. It is the ability is the ability to release maximum muscular force in the shortest time (Baugartner *et al.*1991) [2]. Indeed, the most peculiar factors for explosive power development must be formed in neuromuscular properties (Bosco *et al.* 1992) [12]. The length of the jump will depend to a greater degree upon the force or push the jumpers can generate the ability to outline the force is explosive power. The jumpers need greater leg strength and power while jumping. In turn, the explosive power mainly depends upon one's leg strength (Paulson, 2003) [14]. Standing broad jump is used as a test to measure the explosive power in this study.

Muscles are made up of a combination of fast twitch and slow twitch fibers. Fast twitch fibers contract rapidly and slow twitch fibers contract more slowly and with lower level of force. Speed is an ability to execute motor action under given condition in maximum possible time (Clarke & Clarke, 1987) [3]. If all other things are equal, athletes with longest muscle fibers and greater percentage of fast twitch fiber should have the ability to run faster than an athlete with shorter slow twitch fibers. Eicher (1975) [6] pointed out that speed is the product of two factors, stride length and stride frequency. Increasing either factor automatically increases a runners sprinting speed. Stride frequency is an inborn quality; it might be possible to improve it slightly through training (Astrand & Rodahe, 1970) [1]. But the stride length can be increased by increasing the leg strength and power. In this study fifty meters sprint has been taken as a test for measuring the speed of the subjects.

Materials and Methods
The purpose of the study was to analyse the physical fitness components of government and private high school students. To achieve this purpose, hundred (n = 100) high schhol boys students were selected, out of fifty (n = 50) from government scetor and fifty (n = 50) from private sector. All the subjects were selected at random and their age ranged between 14 and 17 years. The government and private school students were selected from the four schools of Thrissur district, Kerala state. The explosive power and speed were selected as criterion variables of this study. The selected variables were assessed by using standard test and procedures, such as explosive power and speed by using standing broad jump test and 50m run respectively. The collected data from the two groups were

statistically examined by using an independent *t* ratio to find out the significant difference between the government and private boys students on explosive power and speed.

Results and Discussion

Table 1: Mean, Standard deviation and *t* ratio on Explosive Power of Government and Private High School Students

Group	Mean	S D	*t* value
Government	2.19	0.11	4.8
Private	2.06	0.16	

Table 2: Mean, Standard deviation and *t* ratio on Speed of Government and Private High School Students

Group	Mean	S D	*t* value
Government	7.97	0.37	4.47
Private	8.26	0.29	

Table –I showed that the mean values of explosive power of government and private students are 2.19 and 2.06 respectively. The obtained *t* ratio of 4.8 is higher than the table value 1.99 for df 98 required for significance at 0.05 levels ($t = 4.8$, $p \leq 0.05$), which means there was a significant difference occurred in explosive power between government and private high school students. The mean values of government and private high school boys students on explosive power is graphically represented in figure 1.

Table –II showed that the mean values of speed of government and private high school students are 7.97 and 8.26 respectively. The obtained *t* ratio of 4.47 is higher than the table value 1.99 for df 98 required for significance at 0.05 levels ($t = 4.47$, $p \leq 0.05$), which means there was a significant difference occurred in speed between government and private high school students. The mean values of government and private high school boys students on speed is graphically represented in figure 2.

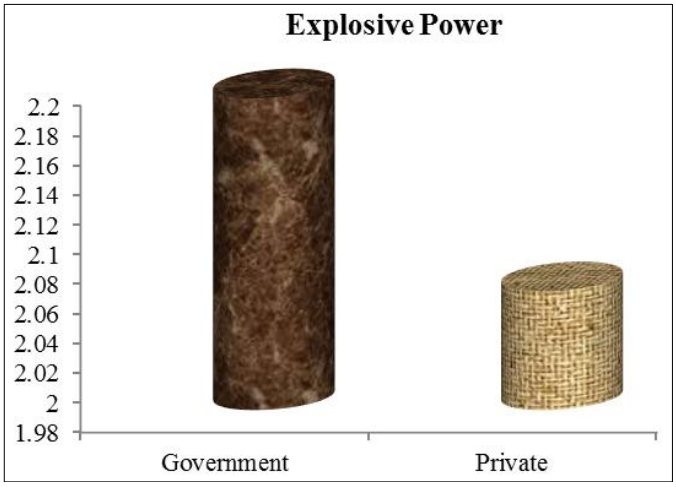

Fig 1: The Mean Values of Government and Private High School Boys Students on Explosive Power

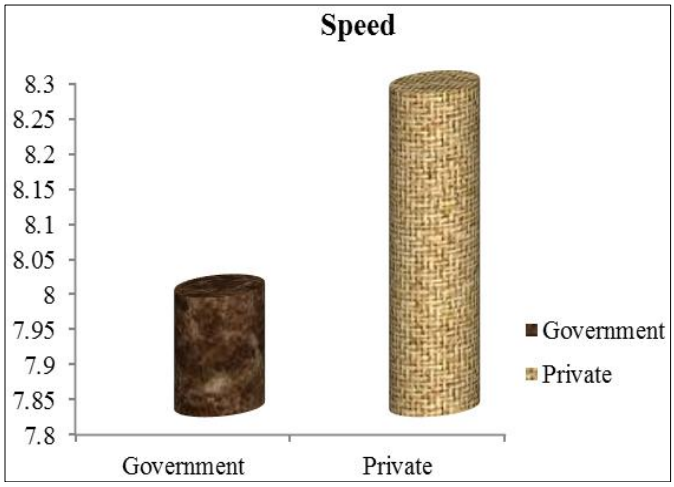

Fig 2: The Mean Values of Government and Private High School Boys Students on Speed

Easticity of the lower part play a mojor role for explosive power. Standing broad jump will depend to a greater degree upon the force or push the jumpers can generate the ability to outline the force. Research in the field of sports and games had provided that the future performance of an individual or team could be predicted through the analysis of certain variables, which were found to be the basis for total performance (Dick.1980, Fogelholm, 2008) [4, 7]. Individual motor ability gains more importance as a factor that decides the performance (Ghuman *et al*. 2000) [8]. Speed is the product of frequency and stride length. Basic fitness is very needed for the adolescent period (Robert, 1993) [10]. Based on the results of the study it indicates that there was a significant difference between government and private high school boys students on explosive power and speed.

Conclusion

Based on the results of the study, it was concluded that there was a significant difference between government tand private high school students on explosive power and speed. We can conclude from the result of the study that government high school students had better motor fitness rather than private high school students on motor fitness variables in Kerala state.

References

1. Astrand, Keare Rodahe. Textbook of work physiology, New York: Mc Graw Hills Book Co., 1970.
2. Baugartner Ted A, Andrew J Jackson. Measurement for evaluation in Physical Education and Exercise Sciences, Dubuque, IOWA: WMC Brown Publishers, 1991.
3. Clarke Harrison H, David H. Application of measurement of physical education, (6th Ed). Englewood Cliffs, New Jersey. Prentice Hall Inc., 1987.
4. Dick Frank William. Sports training principles and coaching, London: Henry Kimpton Publishers Ltd., 1980.
5. Dorgo Sandor. Effects on manual resistance training on fitness in adolescents. Journal of Strength and Conditioning Research. 2009; 23(8):2287-2294.
6. Eicher Tom. Improving Sprinting Speed through Strength Training. Athletic Journal. 1975; 65:12-14.
7. Fogelholm M. How Physical Activity Can Work?. Int J Pediatr Obes. 2008; 3:1.
8. Ghuman PS, Dhillon BS. A study of factors influencing sports career. Scientific Journal, SAI NSNIS. 2000; 23:1.

9. Harrison Clarke. Application of Measurement of Health and Physical Education, (Englewood clings; New Jersey Prentice Hall, 1976; P.50.
10. Hockey Robert V. Physical Fitness: The Pathway to Healthful Living, St. Louis: C.V. Mosby Year Book Inc., 1993.
11. https://www.slideshare.net/neilpulan/motor-fitness
12. James S Bosco, William F Gustafson. Measurement and Evaluation in Physical Education Fitness and Sports, Englewood Cliffs: New Jersey, Prentice Hall, Inc, 1992; 21.
13. Lawrence E. More house and Leonard Broses, Total Fitness on 30 Minutes in a Week, (New York Rockefeller center), 1975; P. 36.
14. Paulson G. The influence of volume of exercise on early adaptations to strength training. Journal of strength and conditioning research. 2003; 17(1):115-120.
15. Tony Smith. The MC Millar Guide to Faculty Health, London; MC Millar London Ltd), 1983; 15.