



Analysis Of Aerobic Endurance Among Government School Students Of Tri-City

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Abstract:

The present study was designed to assess aerobic endurance among male school students of tri-city. Total Eighteen hundred (N=1800) male subjects, which includes six hundred ($n_1=600$) government school Chandigarh, six hundred ($n_2=600$) government school Mohali and six hundred ($n_3=600$) government school Panchkula, who were studying in different government schools of Tri-city, during the session 2024-25. The simple random sampling technique was used to attain the objective of the study. The age of the subjects was ranged between 15 to 18 years. Nine- minute run & walk test was used to measure the aerobic endurance of subjects. Analysis of variance (ANOVA) was employed to assess aerobic endurance among school students of Tri-city. The level of significance was set at 0.05. Result revealed significant difference among male school students of Tri-city.

Keywords: Aerobic Endurance, Chandigarh, Mohali, Panchkula, School Students.

INTRODUCTION

Health, Wellness and Physical Fitness are playing a vital role in the life of human. A healthy and physically fit individual can do his professional task and daily routine works without strain. Physical fitness has been considered as one of the most important aspects of human existence. A sound body and an active mind are inter-related. In other words physical fitness can also considered as that state of body, through which a person can do work for a longer duration without undue fatigue. Fitness is the state which characterizes the degree to which a person is able to function efficiently. Implies the ability of

each person to live most effectively with his potentialities. Ability to function depends upon the physical, mental, emotional and moral components of fitness: all of which are related to one another and are mutually inter-dependent. **AAHPERD (1965)** defined fitness as a state which characterizes the degree to which a person is able to function efficiently. Fitness is considered an individual matter, because it allows the person to live most effectively within his potentialities. Endurance is the ability to sustain or continue activity. In other words, it is the ability of the body to work for a long time without getting fatigued. It is one of the important components for middle- and long-distance races, and also required for major games, like football, hockey, basketball and hand-ball etc. It can be improved through distance run or time factor races (**Yobu, 2010**).

Endurance is the ability to do sports movements, with the desire quality and speed, under conditions of fatigue (**Singh, 1991**). Aerobic endurance is the amount of oxygen intake during exercise. During aerobic work, the body is working at a level that demands oxygen which acts as fuel for body's intake. Aerobic capacity is the capacity of large skeletal muscle groups to adapt to work by using energy obtained as a result of aerobic metabolism. Aerobic capacity is used as a physiological criterion to determine the exercise capacity of the athletes. Physiologically, maximum endurance is articulated as the maximum aerobic capacity of the individual. In other words, it is the total amount of oxygen that can be used by an individual during an exercise of maximal stress (**Tamer, 1996**).

Cardio-respiratory endurance is the ability to perform large-muscle, whole-body exercise at moderate to high intensities for extended periods of time. The cardio-respiratory system consists of the heart and blood vessels, which work with the respiratory system (the lungs and airways). These body systems carry oxygen to the muscles and organs of the body, and remove waste products, including carbon dioxide.

OBJECTIVES OF THE STUDY

To assess significant difference with regard to aerobic endurance among male school student of Tri-city (Chandigarh, Mohali and Panchkula).

HYPOTHESIS OF THE STUDY

It was hypothesized that there would be no significant difference on aerobic endurance among male school students of Tri-city (Chandigarh, Mohali and Panchkula).

METHODOLOGY:

The sample consists Eighteen hundred (N=1800) male subjects, which includes six hundred ($n_1=600$) government school Chandigarh, six hundred ($n_2=600$) government school Mohali and six hundred ($n_3=600$) government school Panchkula, who were studying in different government schools of Tri-city, during the session 2024-25. All the subjects, after informed about the objective and protocol of the

study, gave their consent and volunteered to participate in this study. The age group of subjects was ranged between 15-18 years. The simple random sampling technique was used to attain the objective of the study. The Nine-Minute run-walk (AAPHER test) was applied to assess the aerobic endurance among male school students of Tri-city. Analysis of variance (ANOVA) was employed to assess significant difference on the variable aerobic endurance among male school students of Tri-city. The level of significance was set at 0.05 to test the hypothesis.

RESULTS:

Table-1: Descriptive Statistics Analysis on Nine- Minute Run & Walk Test among Government School Students of Tri-city.

Sr No.	Groups	N	Mean	Std. Deviation	Std. Error
1	Govt. School Chandigarh	600	1987.25	195.29	7.97
2	Govt. School Mohali	600	2480.16	411.59	16.80
3	Govt. School Panchkula	600	2447.41	423.35	17.28
	Total	1800	2304.94	423.62	9.98

It can be seen from the table-1 that the Mean, S.D. and S.E. scores of male Government school students of Chandigarh are 1987.25, 195.29, and 7.97 respectively. Moving to Mohali the Mean, S.D. and S.E. scores are 2447.41, 411.59, and 16.80 respectively. Finally, in case of Panchkula the Mean, S.D and S.E score are 2447.41, 423.35 and 17.28 respectively.

Table- 2: One-Way (ANOVA) results with regard to Chandigarh, Mohali and Panchkula on the Variable Aerobic Endurance

Source of variance	Sum of square	Df	Mean square	F-ratio	Sig. (p-value)
Between groups	91158552	2	45579276	353	.000*
Within groups	2316822441	1797	128827		
Total	322840994	1799			

It has been observed from the table-2 that results of One- Way (ANOVA) among male school students of Tri-city (Chandigarh, Mohali and Panchkula) with regard to variable aerobic endurance were found statistical significant. The P-value (Sig.) .000* was found lesser than the 0.05 level of significance ($p < 0.05$), therefore, there was need to apply LSD post-hoc test to see the degree and direction of differences. The results of the Post-hoc test have been presented in table -3.

Table: 3 Analysis of Least Significant Difference (LSD) Post-hoc test among male school students of Tri-city (Chandigarh, Mohali and Panchkula) with regard to variable aerobic endurance

Group (A)	Group (B)	Mean difference	Sig.
Chandigarh (Mean= (1987.25))	Mohali	-492.91	.00
	Panchkula	-460.16	.00
Mohali (Mean= (2480.16))	Chandigarh	-492.91	.00
	Panchkula	-32.75	.11
Panchkula (Mean= (2447.41))	Chandigarh	-460.16	.00
	Mohali	-32.75	.11

A glance at table-3 showed that the mean difference between Chandigarh and Mohali groups was found -492.91. The p-value (sig).00 showed that the Mohali group had demonstrated significantly better in aerobic endurance than their counterpart Chandigarh group.

The mean difference between Chandigarh and Panchkula groups was found -460.16. The p-value (sig).00 showed that the Panchkula group had demonstrated significantly better in aerobic endurance than their counterpart Chandigarh group.

The mean difference between Mohali and Panchkula groups was found 32.75. The p-value (sig).11 showed that the Mohali group had demonstrated insignificantly better in aerobic endurance than their counterpart Panchkula group.

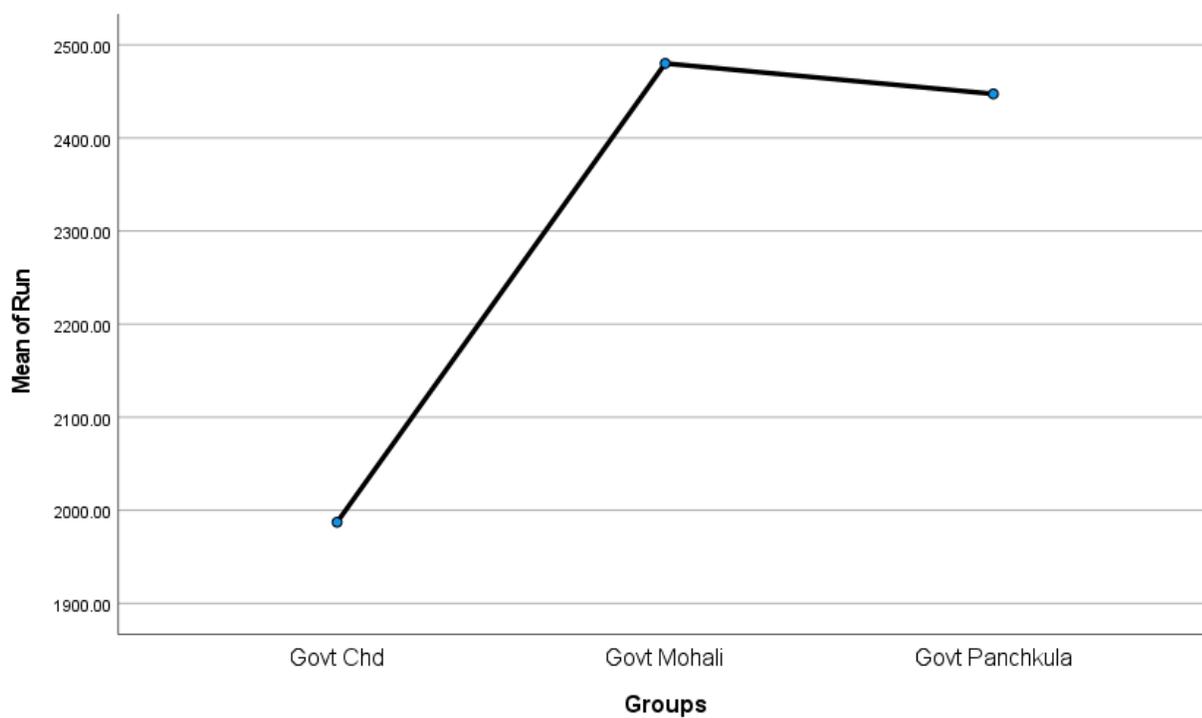


Figure-1. Graphical representation of mean scores with regard to variable 9-minute run/walk test among Government Senior Secondary School Students of Tri-city.

DISCUSSION OF FINDINGS:

It has been observed from (tables - 1 to 2) that significant differences have been found among male government school students of Tri-city (Chandigarh, Mohali and Panchkula) with regard to variable aerobic endurance. While calculated the mean values of among the groups, it has been observed that government school students Mohali group had exhibited better aerobic endurance, than Panchkula and Chandigarh school students.

Gill et al. (2010) had conducted a study to compare physical fitness components namely speed, strength, endurance, agility and flexibility between female students belonging to rural and urban area. The result shows that rural female students were found to be superior in endurance. **Thakur et al. (2012)** had carried out a study to compare the physical fitness components between table tennis and badminton male player. The results found noticeable difference in speed, and agility, whereas there was no difference with reference to their explosive strength, endurance and flexibility components. **Nara (2017)** had carried out a study of physical fitness between basketball and football players of Haryana. The result shows that football players were found to be superior in endurance.

CONCLUSION:

It is concluded that significant differences have been found among male government school students of Tri-city (Chandigarh, Mohali and Panchkula) with regard to variable aerobic endurance. While calculated the mean values of among the groups, it has been observed that government school students Mohali group had exhibited better aerobic endurance, than Panchkula and Chandigarh school students.

REFERENCE:

1. AAHPER (1965). AAHPER Youth Fitness Test Manual Revised; Washington, D.C., American Alliance for Health, Physical Education, and Recreation. P.79.
2. Dhanda, R.S. (2018). Comparative Analysis of Selected Physical Fitness Components Women Judo Players of Weight Categories. *International Journal of Physiology, Nutrition and Physical Education*, 3(2), 725-727.
3. Gill, M., Deol, N.S., & Kaur, R. (2010). Components of Rural and Urban Female Student of Punjabi University Patiala, *Journal Anthropologist*, 12 (1), 17-21.
4. Hunsicker, P. (1976). American Alliance for Health, Physical Education and Recreation. AAHPER Publication-Sales, Washington D.C.20036, U.S.A.
5. Kolkur, S., & Malipatil, R. (2019). Comparison of Motor Fitness Components between Judo and Wrestling male players. *International Journal of Physiology, Nutrition and Physical Education*, 4(1), 618-619.
6. Nara, K. (2017). A study of physical fitness between basketball and football players of Haryana. *International Journal of Physiology, Nutrition and Physical Education*, 2(1), 01-04.
7. Singh, H. (1991). Science of Sports Training. New Delhi: D.V.S
8. Tamer, K. (1996).The relationship between aerobic fitness and recovery from high intensity intermittent exercise. *Sport Med.*31:1:11.
9. Thakur, V., Kumar, S., Chaurasia, S., & Singh, P.K. (2012). Comparative Study of Physical Fitness Components of Tennis and Badminton Male Players from Maharishi Markandeshwar University, Mullana. *International Journal of Sports Science and Fitness*, 2(1), 154-162.
10. Yobu, A. (2010). *Test Measurement and Evaluation in Physical Education and Sports*. New Delhi: Friends Publications.