International Journal of
Physical Education, Sports and Health

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Physiological profile of male with different aerobic capacity

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Abstract
Today there is a growing emphasis on looking good, feeling good and living longer. Increasingly scientific evidence tells us that one of the keys to achieving these ideals is fitness and exercises. Aerobic exercise is physical exercise of relatively low intensity that depends primarily on the aerobic energy-generating process. Major muscles in a rested, untrained human typically contain enough energy for about 2 hours of vigorous exercise. Exhaustion of glycogen is a major cause of what marathon runners' call "hitting the wall". Training, lower intensity levels and carbohydrate loading may allow postponing the onset exhaustion beyond 4 hours. there was no significant difference in Vital capacity, Blood pressure and Respiratory rate as the calculated 't' viz, 0.15, 0.335, 1.51 and 1.35 respectively were much below then the tabulated value of 2.021 required for 't' ratio to be significant at 0.05 level of significance with the degree of freedom 38 Aerobic exercise and fitness can be contrasted with anaerobic exercise, of which strength training and short-distance running are the most salient examples. Some sports are thus inherently "aerobic", while other aerobic exercises, such as fartlek training or aerobic dance classes, are designed specifically to improve aerobic capacity and fitness.

Keywords: Fartlek, Aerobic exercise, cardio-respiratory

1. Introduction
Aerobic exercise is physical exercise of relatively low intensity that depends primarily on the aerobic energy-generating process. Aerobic literally means "living in air", and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Unpleasant effects of lactate buildup initially include the burning sensation in the muscles, and may eventually include nausea and even vomiting if the exercise is continued without allowing lactate to clear from the bloodstream. Aerobic exercise can be performed for longer periods and they should leave the exercises refreshed rather than exhausted. Aerobic activities are those sub maximal activities done under speed 130-150 heart beats/minutes [3]. As glycogen levels in the muscle begin to fall, glucose is released into the bloodstream by the liver, and fat metabolism is increased so that it can fuel the aerobic pathways. Aerobic exercise comprises innumerable forms. In general, it is performed at a moderate level of intensity over a relatively long period of time. For example, running a long distance at a moderate pace is an aerobic exercise, Some sports are thus inherently "aerobic", while other aerobic exercises, such as fartlek training or aerobic dance classes, are designed specifically to improve aerobic capacity and fitness. It is most common for aerobic exercises to involve the leg muscles, primarily or exclusively. As a result, aerobic exercise can reduce the risk of death due to cardiovascular problems. The individual is typically connected to a respirometer to measure oxygen consumption, and the speed is increased incrementally over a fixed duration of time. The higher the measured cardiorespiratory endurance level, the more oxygen has been transported to and used by exercising muscles, and the higher the level of intensity at which the individual can exercise. Aerobic exercises are considered to be more effective than anaerobic exercises in developing fitness; especially cardio-respiratory endurance. Aerobic exercise may also have more lasting effects on blood composition. Aerobic capacity is defined as the maximum amount of oxygen the body can use during a specified period, usually during intense exercise. It is a function both of cardiorespiratory performance and the maximum ability to remove and utilize oxygen from circulating blood.

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Review literature

Parchmanl compared the leg strength and cardio- respiratory endurance of college woman during a semester class participation in Basketball and Swimming. Leg strength was tested with a dynamometer, endurance was determined from the time a bicycle ergometer ride could be continued at a set number of resolutions per minute and constant load. The basketball participants showed a significant increase in leg strength but not on endurance test. The swimmers did not improve significantly on either side.

Donald studied cardio respiratory changes occurring in university freshman males as measured by treadmill performance after 10.Linda L. Parchman, "A Comparative Study Of The Development Of Strength Of Woman Basketball Players During The Basketball Season.", Physical fitness Research Digest 8 (January 1978).

Mc. Grow studied 'Comparative Analysis of Strength, Speed and Limb Length in Power Jumping'. For that he used jump and reach test frequently. He proved that there is relationship between relative influences of speed and strength of muscles or the power movement in jumping. Further he had also examined the importance of limb length in this relationship.

Statement of the problem

After going through the available literature and the practicability of the problem and with the proper discussion of the honourable guide the problem was stated as, "Physiological Profile of Male with Different Aerobic Capacity"

Significance of the Study

The findings of the study indicated the true physiological profiles of different aerobic capacity groups. This study also helped to prepare fitness and conditioning programme for different aerobic capacity groups.

Methodology

the methodology adopted for the selection of the subjects, selection of variables, reliability of data, criterion measures, tester competency and reliability of tests, collection of data, description of tests and statistical techniques for analyzing the data have been described. Required data for the present study was collected from various students of B.P.Ed year of Govt. College of Physical Education, Ganderbal J and K Male students of 18 to 25 years of age were taken under considerations. The subject for the purpose of this study was randomly selected on the basis of coopers 12 minutes run/walk test performance. From the upper 30th percentile 20 subjects were randomly selected for high aerobic capacity group and from the lower 30th percentile 20 subjects were randomly selected for low aerobic capacity group

Statistical analysis and interpretation of data

For this study five variables were selected and data's were collected particularly for these five only, i.e. Vital capacity, Blood pressure, Heart rate Pulse rate, Respiratory rate, Under the consideration of the study the researcher identified the two groups, Low aerobic and High aerobic capacity group of 20 subjects in each group. Then the researcher administered different standard tests upon both the groups. Both the groups were tested and raw scores were compiled and tabulated. To examine the significance of difference In high low aerobic capacity groups 'critical ratio' technique was applied. The level of significance was set at 0.05.

Significance of Difference in High and Low Aerobic Capacity Group

Variables		Mean LACG	Mean HACG	M.D.	S.E.	Observed
Vital capacity		451.72	455.08	3.364	22.95	0.15@
Blood Pressure	Systolic	114.05	115	0.95	2.84	0.335@
	Diastolic	83.9	80.25	3.65	2.42	1.51@
Heart rate		62.75	55.65	7.1	1.76	4.04*
Pulse rate		56.15	61.05	4.9	1.52	3.23*
Respiratory rate		14.1	13.05	1.05	0.78	1.35@

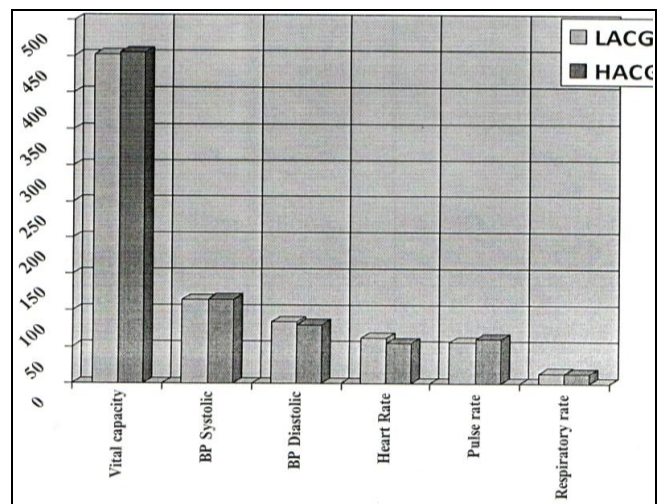Significant @ 0.05 level of significance t 0.05 (38) = 2.021

LACG – Low Aerobic Capacity Group
HACG – High Aerobic Capacity Group
S.E. – Standard Error
M.D - Difference of the Means

This Table shows revealed that there was no significant difference in Vital capacity, Blood pressure and Respiratory rate as the calculated 't' viz, 0.15, 0.335, 1.51 and 1.35 respectively were much below then the tabulated value of 2.021 required for 't' ratio to be significant at 0.05 lovel of significance with the degree of freedom 38.

But there was significant difference in Heart rate and pulse rate of high and low aerobic capacity groups as the observed 't' values viz. 4.04 and 3.23 respectively were above the tabulated value of 2.021 required for 't' ratio to be significant at 0.05 level of significance with the degree of freedom 38.

Discussion of findings

After applying the statistical techniques a clear picture of the physiological parameters was found of the selected subjects. Moreover it was also seen that there was no significant difference in Vital capacity, Blood pressure and Respiratory rate as the calculated 't' viz. 0.15, 0.335, 1.51 and 1.35 respectively were much below then the tabulated value of 2.021 required for 't' ratio to be significant at 0.05 level of significance with the degree of freedom 38.

But there was significant difference in Heart rate and Pulse rate of high and low aerobic capacity groups as the observed 't' values viz. 4.04 and 3.23 respectively were above the tabulated value of 2.021 required for 't' ratio to be significant at 0.05 level of significance with the degree of freedom 38.

Summary, conclusion and recommendations
Summary

The purpose of this study was to find out the general physiological profile of male with different aerobic capacities. The present study was delimited to the undergraduate male students of B.P.Ed of Govt. College of Physical Education, Ganderbal j & k. On basis of the Cooper's 12 minute run/walk test performance the subjects were randomly selected i.e. 20 subjects from the upper 30 percentile for High aerobic capacity group and 20 subjects from lower 30 percentile for the Low aerobic capacity group. The age level of the subjects was ranged between 18-25 years. The Cooper's 12 min. run/walk test was administered on the entire population of undergraduate male students of Govt. College of Physical Education, Gandarbal J&K and they were asked to give their best efforts to cover the maximum distance in 12 minutes duration. The distance covered was recorded as aerobic capacity.

The data of all the variables viz. Vital capacity, Blood pressure, Heart rate, Pulse rate, and Respiratory rate were collected at different times as per the convenience of the research scholar and other experts. The procedure is already being mentioned in the 3rd chapter. The level of significance was set at 0.05 where 't' 0.05 (38) = 2.021.

Conclusion

Within the limitations identified and on the basis of the result of present study the following conclusion were drawn:

There was no significant difference between high and low aerobic capacity group for Vital capacity, Blood pressure and Respiratory rate.

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