ANALYSIS ON PHYSIOLOGICAL VARIABLES IN RELATION TO AEROBIC CAPACITIES OF BOYS IN CHENNAI REGION

P. KUMARAVELU
Associate Professor,
Department of Physical Education
Tamilnadu Physical Education and Sports University Chennai-600 127

ABSTRACT

In modern world promotion of physical education and sport is no longer a matter of dispute Today physical education and sports are considered as international disciplines because they build up international understanding and universal brotherhood. Hence the promotion of physical education and sports is accepted as moral and social responsibility of cach nation.

METHODOLOGY

For the purpose of this study, boys were selected on the basis of Coopers 12 mts. Run/walk test From the upper 30 percentile 250 students were randomly selected for high aerobic capacity group and from the lower 30 percentile 250 students were randomly selected for low aerobic capacity group All the subjects were studying Under Graduate course during the academic year 2007-08 in the colleges located in Chennai, Tamilnadu, India.

SELECTION OF VARIABLES AND THEIR RESPECTIVE TESTS:

Physiological Variables namely Resting cardiac rate, Resting respiratory rate. Resting Systolic Blood Pressure Resting Diastolic Blood Pressure, Vital capacity and their test/equipment Carotid pulse Manual Method Spigno manometer, Wet Spiro meter respectively.

ANALYSIS OF DATA RESULTS AND DISCUSSION

RESTING CARDIAC RATE:

The analysis of the data on the resting cardiac rate of High and low aerobic groups were carried out and are presented in table l.

Table I

Mean, Mean difference, Standard deviation, Tratio of high and low aerobic groups on

Resting Cardiac Rate

Groups	Mean	Mean different	S.D	't' ratio
High aerobic	69.280	3.096	1.880	4.124*
Low aerobic	72.376		2.951	

*Significance at 0.01 level of confidence.

Table shows that the means of the High and low aerobic groups are 69.280 bpm and 72.376 bpm respectively. The mean difference is 3.096. The standard deviation of high and low aerobic groups is 1.880 and 2.951 respectively. The obtained't' ratio is 4.124 and is greater than the table value of 2.576 for Degree of freedom 2 and 498 required for significance at 0,01 level.

Discussion:

It may be concluded from the results that a significant difference exists in resting Heart rate between high and low aerobic groups Le, the resting cardiac rate in high aerobic group is lower as compared to low aerobic group.

RESTING RESPIRATORY RATE

The analysis of the data with regard to the resting respiratory rate of high and low aerobic were done and are presented in table 11.

Table II

Mean, Mean difference, Standard deviation and't' ratio of high and low aerobic groups on Resting respiratory rate

Groups	Mean	Mean different	S.D	't' ratio
High aerobic	16.108	1.224	1.575	3.779*
Low aerobic	17.332		1.279	

*Significance at 0.01 level of confidence.

Table Il shows that the means of high and low aerobic groups are 16.108 and 17.332 respectively. The mean difference is 1 224. The standard deviation of high and low aerobic groups is 1.575 and 1.279 respectively. The obtained 'T' ratio is 3.779 and is greater than the table value of 2.576 for degree of freedom 2 and 498 required for significance at 0.01 level.

Discussion:

It may be concluded from the results that a significant difference exists on resting respiratory ratebetween high and low aerobic groups Le, the resting respiratory rate is lower in the high aerobic groupas compared to the low aerobic group. Analysis of the data pertaining to the resting systolic bloodpressure of High and low aerobic groups were analyzed and are presented in Table III.

TABLE III

Mean, Mean difference, standard deviation and't' ratio of high and low aerobic groups on Resting systolic blood pressure.

Groups	Mean	Mean different	S.D	't' ratio
High aerobic	116.74	6.05	3.945	3.692*
Low aerobic	122.79		8.164	

*Significance at 0.01 level of confidence.

Table Ill shows that the means of high and low aerobic groups are 116.74 mm Hg and 122.79 mm Hg respectively. The mean difference is 6.05. The standard deviation of high and low aerobic groups is 3.945 and 8.164 respectively. The obtained't' ratio is 3.692 and is greater than the table value of 2.576 for degree of freedom 2 and 498 required for significance at 0.01 level.

Discussion:

It may be concluded from the results that a significant difference exits on the resting systolic bloo pressure between high and low aerobic groups Le, the systolic blood pressure is lower in high acrobe group as compared to low aerobic group.

RESTING DIASTOLIC BLOOD PRESSURE

he analysis of the Data with regard to the Resting Diastolic Blood Pressure of the High and lo

aerobic groups were analyzed and are presented in table IV.

TABLE IV

Mean, Mean difference, standard deviation, 't' ratio of high and low aerobic groups

On resting Diastolic Blood Pressure

Groups	Mean	Mean different	S.D	't' ratio
High aerobic	71.86	3.60	5.530	3.019*
Low aerobic	75.46		3.464	

*Significance at 0.01 level of confidence.

Table V shows that the means of the high and low aerobic groups are 3,602 and 3.285 respective The mean difference is 0.317. The standard deviation of the high and low aerobic groups is 0.253 an 0.240 respectively. The obtained't' ratio of 2.651 is greater than the table value of 2.576 for degree o freedom 2 and 498 required for significance at 0.01 level.

Discussion:

It may be concluded from the results that a significant difference exists on the vital capacity between the high and the low aerobic groups Le, the vital capacity is high in the high aerobic group as compared to the low aerobic group.

DISCUSSION ON HYPOTHESIS

In the Hypothesis of the study the investigator has stated that there would be a significant difference on the selected Physiological variables between high and low aerobic groups. The results of the study show that the resting cardiac rate, resting respiratory rate, vital capacity, resting systolic blood pressure and resting diastolic blood pressure are positively influenced among the high aerobic subjects as compared to the low aerobic subjects. Hence the investigator's hypothesis is held true.

CONCLUSION & RECOMMENDATIONS

With in the limitations identified and on the basis of the results of the present study the following conclusions are drawn.

1) The resting cardiac rate in the high aerobic group is lower as compared to the low aerobic group.

2) The resting respiratory rate is lower in the high aerobic group as compared to the low aerobic group.

3) The vital capacity is high in the high aerobic group as compared to the low aerobic group. 4) The systolic blood pressure is lower in the high aerobic group as compared to the low aerobic group.

5) The diastolic blood pressure is lower in the high aerobic group as compared to the low aerobic

group.

The resting heart rate and vital capacity can be used as tools for the detection of high aerobic capacity group.