



Construction of Norms of Cardio Respiratory Endurance of Women Physical Education Professional Students at Calicut University

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ABSTRACT

Modern lifestyles have contributed to a decrease in individuals' natural fitness levels. As technology and machines have simplified daily tasks, people tend to adopt more inactive routines. Maintaining physical fitness is essential, as it not only improves appearance and well-being but also enhances the chances of living a longer, healthier life. In this study, 75 female students pursuing Physical Education at Calicut University, Kerala, were selected as participants. To evaluate cardiorespiratory endurance, the AAHPERD Health-Related Physical Fitness test battery was utilized, focusing on two age groups: those under 20 and those over 20 years of age. The one-mile run/walk test served as the method for data collection to establish reference norms for cardiorespiratory endurance. Both descriptive statistics and percentile analysis were applied to construct the norms for the respective age categories.

Introduction

Health, like fitness, is a condition, but it is not as easily measured or precisely defined. It goes beyond simply being free from illness. Instead, health represents a holistic state of physical, mental, and social well-being, encompassing a wide range of vitality—from peak performance to poor functioning.



In 1980, the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD) introduced a new fitness test that prioritized health-related physical fitness over motor or athletic fitness. Physical fitness is typically divided into two categories: performance-related and health-related fitness. Among the key components of health-related fitness is cardiorespiratory endurance, which results from regular, sustained physical activity. Also referred to as cardiovascular fitness or aerobic capacity, cardiorespiratory endurance plays a vital role in overall health. It reflects the heart and lungs' ability to deliver oxygen-rich blood to active muscles and the muscles' ability to use that oxygen to generate energy for physical movement.

This study focused on 75 women students enrolled in Physical Education programs. The sample was limited to students from CPed, BPE, BPed, and MPed courses. Individual differences and changing environmental factors were acknowledged as limitations of the study. However, lifestyle elements such as daily routines, work habits, and diet—which may have affected the results—were not accounted for in this research.

Methodology

All women Physical Education professional subjects, 75 subjects, the age groups of below and above 20 years from four Physical Education College / Institution were selected. The AAHPERD Health Related Physical Fitness battery was selected for measuring cardio respiratory endurance for the age groups of below and above 20. One mile run/walk test was used to find the data. The data was recorded to minutes and seconds.

The reliability of data was ensured by establishing the Tester's Competency and the Instrument Reliability. Ten subjects were randomly selected for determining the Tester's Competency under identical condition. Correlation coefficient of one mile run was 0.98. The instruments used for the collection of the data was collected from standard research laboratories. To measure cardio respiratory endurance one mile run test was used was administrated for collecting data. A stopwatch was used to measure the time. Descriptive analysis such as mean, median, mode, standard deviation, range, skewness, kurtosis and coefficient of variation was find out which will give an idea of the distribution of scores and features obtained from the data collected for the purpose of this study was done on the selected variable, Cardio respiratory endurance, of the selected two groups such as below and above twenty years women Physical Education professional students. Later the Percentile analysis was done to find out, in order to construct the norms for the two set of groups.



The data collected was analyzed and the Percentile norm was constructed for all the five variables of the test battery. The data were analyzed using SPSS Software. Descriptive analysis and Percentile analysis were used. Graphs were prepared by using Microsoft Word. The obtained results for the age groups of below and above twenty years women Physical Education professional students in Calicut University are presented in following tables.

Table 1

Descriptive profiles above 20years women Physical Educationprofessional students

	Mean	Median	Mode	Standard deviation	Range	skewness	Kurtosis	Co-efficient of variation
One mile run	7.68	7.27	6.58	1.022	3.58	1.594	1.689	13.307

Table 2

Descriptive profiles of below 20 years women Physical Education professional students

	Mean	Median	Mode	Standard deviation	Range	Skewness	Kurtosis	Co-efficient of variation
One mile run	7.671	7.28	7.21	1.22	3.93	1.2	0.214	16.374

Table 3

Percentile norms on One mile run
For above 20 years women Physical
Education professional students

PERCENTILE	1 MILE RUN
9	6.321
95	6.454
90	6.507
85	6.588
80	7.055
75	7.106
70	7.198
65	7.210
60	7.223
55	7.280
50	7.304
45	7.374



45	7.374
40	7.404
35	7.492
30	8.055
25	8.376
20	9.976
15	10.162
10	10.193
5	10.210

Table 4

Percentile norms on One mile run
for below 20 years women Physical
Education professional students

PERCENTILE	1 MILE RUN
99	6.580
95	6.709
90	7.024
85	7.064
80	7.125
75	7.149
70	7.212
65	7.244
60	7.260
55	7.270
50	7.326
45	7.358
40	7.417
35	7.561
30	8.203
25	8.226
20	8.987
15	9.940



10	10.150
5	10.160

Figure 1

Graph showing Percentile scores of One mile run for the age group of above 20 years women Physical Education professional students

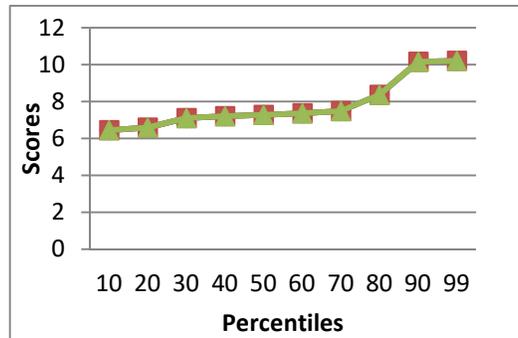
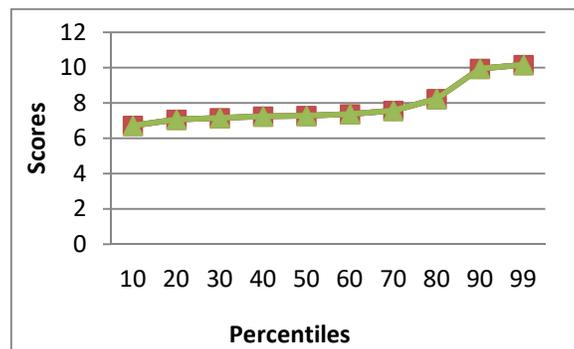


Figure 2

Graph showing Percentile scores of One mile run for the age group of below 20 years women Physical Education professional students



Results

The mean value of below 20 years age group students' scores for the One mile run was calculated as 7.68. This implies that the Cardio respiratory endurance of most of the students is better. The mean value of above 20 years age group students' scores for the One mile run was calculated as 7.671. This implies that the Cardio respiratory endurance of most of the students is better. The result shows that the mean



value of below 20 years age group students' scores and the mean value of above 20 years age group students' scores are almost equal.

Discussions

It is evident from the present study that Women Physical Education professional students in Calicut University have displayed a fairly good performance in almost all the tests. As a result it can be concluded that most of them are healthy and fit. This may be due to several physical, genetically, environmental, geographical and social factors and the lifestyle followed by people in this region.

The district has more villages and most of the people here are villagers. Hence they engage in more physical work and physical labor irrespective of gender. This obviously might have reflected in the performances of the subjects. The living conditions also influence the health and fitness of people. The usage of comforts and luxuries are minimal in this district compared to its neighboring districts. This might have resulted in the very low level of the presence of obesity and fatigue. Also the food habits of the people are different. Their regular diet provides them most of the essential nutrients and their intake of junk food is also negligible.

Conclusions

- The following conclusions were drawn from the results of the study
- The results of the study will also allow comparison of students with population in the other states and developed countries.
- This results reveals most of the Physical Education women students are fit to their profession.
- The unfit students may be undergone additional training and proper diets.

Recommendations

- Similar study can be conducted on different professional areas.
- Similar study can be conducted on persons belonging to different age groups.
- Further research various age group in different states may be conducted.



- Individualized remedial programs may be given to those subjects who scored below the 26th percentile.

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