



COMPARISON ON CARDIO-RESPIRATORY FITNESS BETWEEN RURAL AND URBAN PHYSICAL EDUCATION STUDENTS

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ABSTRACT:

The objective of this study was to compare the cardio-respiratory fitness between rural and urban physical education students. A sample of sixty male physical education students (rural $N_1=30$ and urban $N_2=30$) age group of 18-25 years, were selected from department of physical education, P.G. Govt. College, Sector-46, Chandigarh affiliated to Panjab University Chandigarh, India. Height of players was measured by anthropometric rod to the nearest 0.5 cm. The weight was measured with weighing machine to the nearest 0.5 kg. Cardio-respiratory fitness was measured by 12-minute run and walk test. The independent samples t-test was used for data analyses. Results indicated that urban physical education students had higher height, more body weight values as compare to rural players. There was no statically significant difference found between rural and urban physical education students on cardio-respiratory fitness.

KEYWORDS: Cardio-respiratory Fitness, Rural, Urban, Physical Education Students.

INTRODUCTION-

Cardio-respiratory fitness can be defined as the health-related component of physical fitness with the ability of the circulatory, respiratory and muscular systems to supply oxygen efficiently and for a long period of time during a sustained physical activity (Lee et al., 2010). Cardio-respiratory fitness is a direct measure of the physiological status of the person (Katch et al., 2011; Jonathan et al., 2009). Physical activity level, heredity and other factors such as age, gender, medical status and health-related lifestyle behaviours are the contributing factors to an individual's cardio-respiratory fitness (Pahkala, 2009). Cardio-respiratory fitness is highly connected with the performance of other health-related fitness components in young people and in adults (Ortega et al., 2008). Cardio-respiratory fitness reflects the overall capability of the cardiovascular and respiratory system and the ability to carry out long-lasting physical activity (McArdle et al., 2006). Low levels of cardio-respiratory fitness are both associated with higher risk of disease all cause and specific mortality (Thune et al., 1998). Various factors like socio-economic status, diet, physical activity level geographical condition may affect the cardio-respiratory fitness level of a person. Therefore, the objective of this study was to compare the cardio-respiratory fitness between rural and urban physical education students.

MATERIALS AND METHODS

Subjects: A sample of sixty inter-college level players (rural $N_1=30$ and urban $N_2=30$) age group of 18-25 years, were selected from department of physical education, P.G. Govt. College, Sector-46, Chandigarh affiliated to Panjab University Chandigarh, India.

Methodology: Height was measured using the standard anthropometric rod to the nearest 0.5 cm and the weight was measured with weighing machine to the nearest 0.5 kg.

The 12-Minute Run/Walk Test Procedure:

The 12 minute run and walk test was used to find out cardio-respiratory fitness. To complete the test, the students were given a brief explanation of the test. They were mandatory to run/walk round 400 metres track as many times within 12 minutes. The subjects ran in groups of 12 each. The subjects were asked to run at a constant pace. The ground men helped to count the number of laps covered by every student. At the end on 12 minutes, all the students were stopped running/walking immediately. The distance covered during the 12 minutes was the number of laps covered the distance from where each subject stopped from the starting line in meters.

Statistical Analyses:

Values are presented as mean values and SD. Independent samples t test was used. Data was analyzed using SPSS (Statistical Package for the Social Sciences).

RESULTS

Table-1: Comparison of physical characteristics and cardio-respiratory fitness between rural and urban male physical education students.

Variable	Rural Students (N ₁ = 30)		Urban Students (N ₂ = 30)		Mean Difference	SEDM	t-value
	Mean	SD	Mean	SD			
Height (cm)	168.26	6.6016	170.833	5.92530	2.56667	1.61958	1.585*
Body Weight (kg)	59.65	9.599	61.9333	8.47322	2.27667	2.33767	0.974
12-Minute Run/Walk (mtrs)	2420.35	227.211	2418.53	287.085	1.820	66.844	0.027

*Significant at 0.05

Table-1: depicts the physical characteristics and cardio-respiratory fitness of rural and urban physical education students. The mean height of rural students was 168.26 cm and urban students' players were 170.833 cm. The mean weight of rural students was 59.65 kg and urban students were 61.9333 kg respectively. On the other hand the mean cardio-respiratory fitness (12-minute run/walk test) values of rural students were 2420.35 meters and urban students were 2418.53 meters respectively. Results indicated that urban students were taller and heavier as compare to rural students whereas there was no significant difference between rural and urban students on cardio-respiratory fitness level.

DISCUSSIONS

In the present study cardio-respiratory fitness between rural and urban physical education students have been evaluated and compared with each other. This study indicates the existence of body weight difference between rural and urban physical education students. Urban students had more height and weight as compare to rural students. The result of the present study is agreement with the study of Reyes et al. (2003) conducted in Mexico, it has been found that children living in urban areas were taller and heavier than living in rural areas. In the present study, there was no statically significant difference was found of cardio-respiratory fitness between rural and urban physical education students. The findings no conformity to the study of Eiben et al.(2005) where it was stated that the urban boys had better physical performance than their rural counterparts.

CONCLUSIONS

The main aim of the study was to examine differences in cardio-respiratory fitness of physical education students living in urban and rural areas. It was concluded that urban physical education students had higher height, more body weight values as compare to rural players. This present study did not find significant difference between the rural and urban physical education students in their cardio-respiratory fitness.

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