Cardiovascular Fitness among Sedenatry Students

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Abstract

The primary objective of the study is to find out the cardiovascular fitness level between rural and urban collegiate students and to determine the level of fitness level among rural and urban students. Eighty Rural and Eighty Urban collegiate sedentary students from various colleges of Swami Ramanand Teerth Marathwada University Nanded, voluntary to participate in the health related physical fitness programmes. Exclusion criteria were the presence of chronic medical conditions such as asthma, injuries, heart disease or any other condition that would put the subjects at risk when performing the Health tests. The subjects were free of smoking, alcohol and caffeine consumption, antioxidant supplementation and drugs during the programmes. The age, height, weight, and cardiovascular fitness, of all subjects were measured in physical education department laboratory and Field. Cardiovascular fitness was assessed using 12 minute run test. Participants were ruined for 12minutes, and the total distance covered is recorded. Walking was allowed. BMI was calculated by Quetelet equation. The result reveals a statistically significant difference of body mass ($t=3.45<, .05$) between rural and urban collegiate students. However the result reveals a statistically significant difference of cardiovascular fitness ($t=49.61$, $p<.05$) was found between rural and urban collegiate students. The results of present study showed that cardiovascular fitness performance was better in rural students.

Key words: cardiovascular fitness, Urban, Rural, Students

Introduction

Sedentary life style is a seriously growing health problem. Epidemiological study has shown that sedentary life style will contribute to the early onset and progression of life style disease such as cardiovascular disease, hypertension, diabetes and obesity *(Hulens et al, 2002).* Majority of Indian population live in rural areas, mainly depending on agriculture for their livelihood, and carry out more physical activities when compared to urban population who are accustomed to sedentary life style. Healthy body is necessary for increasing the working capacity and maintaining physical fitness of any individual to perform his daily tasks vigorously and alertly, with left over energy to enjoy leisure time activities. It also helps to withstand stress and carry on, in circumstances where a physically unfit person could not continue *(Patil et al, 2012).* The importance of cardiovascular fitness to health for all individuals has been well documented. Physical fitness is a required element for all the activities in our life. Cardiovascular fitness of an individual is mainly dependent on lifestyle related factors such as daily physical activity levels. It was believed that the low cardiovascular fitness level of an individual is associated with higher mortality rate. *(Jourkhesh et al, 2012).* For Cardiovascular fitness, the activity components included are not only for muscular development and endurance

training. The lungs, heart, and circulatory system are also the focal points in health and fitness. The reason for this is to improve stamina, immune system, and maintain good body composition. Cardiovascular fitness reduces the risk of cardiovascular diseases and other diseases like hypertension, Diabetes obesity, and may cure respiratory problems like asthma (*Amusa & Goon, 2011).*

Cardiovascular fitness of our citizens is a vital prerequisite to a country's realization of its full potentials a nation *(Lamb et al, 1988).* Cardiovascular fitness recognized as an important component of health and it may be important for the performance of functional activities and quality of life *(Maria et al, 2003)*. Low cardiovascular fitness may result in high physical strain during the study period (*Pongprapai et al, 1994)*. The primary objective of the study is to find out the cardiovascular fitness level between rural and urban collegiate students and to determine the level of fitness level among rural and urban students.

Material and Methods

*Target Population and Study Area***:**

Eighty Rural and Eighty Urban collegiate sedentary students from various colleges of Swami Ramanand Teerth Marathwada University Nanded, voluntary to participate in the health related physical fitness programmes. Exclusion criteria were the presence of chronic medical conditions such as asthma, injuries, heart disease or any other condition that would put the subjects at risk when performing the Health tests. The subjects were free of smoking, alcohol and caffeine consumption, antioxidant supplementation and drugs during the programmes. The age, height, weight, and cardiovascular fitness, of all subjects were measured in physical education department laboratory and Field.

Assessment of Cardiovascular Fitness Tests

12 minute Run

Cardiovascular fitness was assessed using 12 minute run test. Place markers at set intervals around the track to aid in measuring the completed distance. Participants were ruined for 12minutes, and the total distance covered is recorded. Walking was allowed. BMI was calculated by Quetelet equation

Statistical analysis

The Statistical Package for the Social Sciences (SPSS; version 18.0) was used for the data analysis. Independent t tests were used to assess overall differences between Rural and Urban students.The level of significant set up at 0.01 level of confidence.

Results

Comprised and indentified of cardiovascular fitness between rural and urban sedentary students. The data have been systematically analyzed in the form of Mean Scores, Standard Deviations and t-ratios. The results of the study comprised of cardiovascular fitness between rural and urban sedentary students are shown in tables are as given below

Table 1 Morphological Characteristic of Rural and Urban Students

S.No.	Parameters	Rural		Urban	
1	Age	22.34	4.98	21.87	3.54
2	Height	170	24.78	169.05	22.52
3	Weight	65.44	11.21	69.80	13.87

Table 1 illustrates the age, height and weight of rural and urban sedentary collegiate students.

Table -2: Statistical Comparison of Body Mass Index among rural and urban collegiate students

Variable	Test	Number	Mean	S.D.	T-ratio
Body Mass Index	Rural	80	20.12	5.32	3.45*
	Urban	80	23.78	7.88	

**** Significant at 0.01 level***

Table-2 compares the mean scores, standard deviation and t-ratio of body mass index between rural and urban sedentary collegiate students. With regards to body mass index in rural and urban collegiate students they have obtained mean value were 20.12 and 23.78 respectively, the result reveals a statistically significant difference of body mass index (t=3.45, 0<.05) was found between rural and urban collegiate students; Urban collegiate students was found to got more obese as compare than rural collegiate students.

Table- 3: Statistical Evaluation of Cardiovascular Fitness through 12 meter run & walk test among rural and urban collegiate students

Variable	Test	Number	Mean (Mts.)	S.D.	T-ratio
12 Meter Run	**Rural**	**80**	**1945.65**	**27.72**	**49.61***
	Urban	**80**	**1740.25**	**24.60**	

Table -3 illustrates that mean scores, standard deviation and t-ratio of 12minutes run and walk between rural and urban sedentary collegiate students. With regards to 12 minutes run and walk in rural and urban collegiate students they have obtained mean value were 1357.5 and 13.40 respectively, the result reveals a statistically significant difference of cardiovascular fitness (t=49.61, p<.05) was found between rural and urban collegiate students.

Discussion of findings

The results of present study showed that cardiovascular fitness performance was better in rural students, This may be due to mechanization, automation and computerization have minimised the opportunities for vigorous physical activities to cause physical exertion in urban population. The relatively grater right cardiovascular fitness of rural students were Probably due to rural students engaged in vigour physical activity like agriculture and Animal husbandry. The results of this study suggest that urban students have lower levels of cardiovascular fitness as compared with rural students. Our findings are in agreement with other study that has examined cardiovascular fitness levels in African-American adults. According to observations of the Amsterdam Growth and Heath Longitudinal Study, physical activity levels affect cardiovascular capacity during puberty and later in life. Thus, we assumed that physical activity levels of our study participants were similar as earlier in their life and consequently their Cardiovascular capacity resulted from long term engagement in a given physical activity pattern. In addition, future research examining cardiovascular fitness levels should assess what percentage of rural and urban students played university sports and whether participation in such activities influenced their cardiovascular fitness levels. The research has provided early information to help the students understand their physical fitness. It will motivate them to be involved in sports. The information can be applied as criteria in selecting or choosing athletes. It is also a source to assist physical education teachers, sports directors, physical educationist and sports trainer to be proactive and change their perspective in order to improve the cardiovascular fitness. According to the results of this study, it is suggested that the Physical education must be a

compulsory subject for college students of Maharashtra therefore student is needed to at least take up a course on physical education for each year so that their cardiovascular fitness is maintained.

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