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Health Related Physical Fitness between Rural and Urban Collegiate Student Athletes

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Abstract

The primary objective of the study is to find out the health related physical fitness of rural and urban student Athletes and to determine the level of fitness level among rural and urban students. 150 Rural and 150 Urban collegiate Athletes students from P.E.S College of physical education 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. 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=p<, .05) between rural and urban collegiate students. However the result reveals a statistically significant difference of cardiovascular fitness (t=p<.05) was found between rural and urban collegiate students. The results of present study showed that health related fitness was better in rural students.

Introduction

The importance of health related physical fitness to health for all individuals has been well documented. Health related Physical fitness is a required element for all the activities in our society. Health related physical fitness of an individual is mainly dependent on lifestyle related factors such as daily physical activity levels. Physical fitness is also considered as the degree of ability to execute a physical task under various ambient conditions. (Caspersen 1985)

The definition of health related fitness is fitness done with balance among the development and improvement of the whole body. The definition can be better understood when elaborated. Health-related physical fitness includes two major parts; Activity and diet (Diane Winter).

For health related fitness, the activity components included are not only for strength, and 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(Hulens , et.al. 2002). Health-related fitness reduces the risk of cardiovascular diseases and other diseases like cancer and arthritis, and may cure respiratory problems like asthma. There are lots of activities that can be your favoured workout plan. You may choose sports, aerobic any other or exercise work outs. The exercises are much better when you include another exercise that will focus on improving your strength, muscle development and endurance(Ismailov,et.al. 2010)

Health related fitness is generally considered to have five components: aerobic capacity, muscle strength, muscular endurance,flexibility, and body composition .Hence, when physical fitness is tested, the functional status of all these systems is actually being checked. This is the reason why physical fitness is nowadays considered one of the most important health markers, as well as a predictor of morbidity and mortality for cardiovascular disease (CVD) and for all causes (Jourkesh *et. al. 2011)*. In the recent decade, a decline in physical

activity among college students has been observed. Physical fitness is the basis of all the activities of our society. If we fail to encourage physical development and prowess, we will undermine our capacity for thought and for work. Thus physical fitness of our citizens is a vital prerequisite to a country's realization of its full potential as a nation and to the opportunity of each individual citizen to make full and fruitful use of his/her capabilities. **(Lamb , 1988)**"

Methods

Target Population and Study Area:

150 rural and 150 Urban collegiate sedentary students from various colleges of Marathwada, 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 health related fitness measure in PES College of physical education and M.P.ED. Department Nanded, of all subjects were measured in physical education department laboratory and Field.

Tools of the study

Stopwatch, still tape, grip dynamometer, weighing machine, tools will be used for data collection.

Assessment of Health-related physical Fitness Tests

Flexibility

Flexibility was assessed using the sit and reach test to measure lower back and hamstring flexibility. The participants sat on the floor, with their shoes off, their legs straight, and feet against the flexometer foot stop. Before the test the technician asked the participant: "Do you have a back injury or is there any other reason you should not try to touch your toes?" If the participant's answer was positive, the flexibility test was skipped. When participant reached forward and touched the toes for 3 seconds, a measurement was recorded in centimetres.

12minute 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, though the participants must be encouraged to push themselves as hard as they can.

Sit-up Test

The abdominal muscular strength and endurance of the abdominals and hip-flexors was assessed using sit-up test. To assure the starting position, the participants lies on his/her back with knees flexed, feet on floor with the hands on the opposite shoulders. The feet was held by partners to keep them in touch with the testing surface. The student, by tightening his/her abdominal muscles, curls to the sitting position. Arm contact with the chest must be maintained. The chin should remain tucked on the chest. The sit-ups were completed when the elbows touch the thighs. To complete the sit-up the participants returns to the down position until the mid back makes contact with the testing surface. When the timer gives the signal "ready go", the sit-up performance were started and the performance was stopped on the command "stop". The number of correctly executed sit-ups performed in 60 seconds was the score.

Pull Up Test

Measuring upper body strength, Set to a specified pace. Participants were complete as many repetitions as possible. Students begin performing pull-ups according to the cadence. The

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correct push-up were performed to a pace of one complete push-up every three seconds 1.5 seconds down and1.5 seconds up, with no hesitation.

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 0.5 level of confidence.

Results and discussion

The results and discussion have been presented in concise and comprehensive manner that is easy to comprehend starting with selected physical parameter. Comparison of health related physical fitness between rural and urban student Athletes.

Table 1 shows the criterion measure of variables of rural and urban students

Morphological Characteristics 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 students. the mean age of these rural student Athletes were 22.34 $\pm$ 4.98, height were 170.00 $\pm$ 24.78 cm. the weight were 65.44 $\pm$ 11.22 Kg and mean age urban student Athletes were 21.87 $\pm$ 3.54, height were 169 $\pm$ 5.05 cm. *the* weight were 69.80 $\pm$ 13.87 Kg.

Table-2

Mean scores standard deviation and t-ratio of pull ups among rural and urban collegiate students

Variable	**Test**	**Number**	**Mean**	**S.D.**	**T-ratio**
Pull ups	Rural	150	4.54	1.89	11.47*
	Urban	150	2.67	0.67	

***= Significant:-**

Table -2 Shows that mean scores, standard deviation and t-ratio of pull ups between rural and urban Athlete collegiate students.

With regards to pull ups in rural and urban collegiate students they have obtained mean values were 4.54 and 2.67 respectively, the result reveals a statistically significant difference of body mass (t= 11.47 <,.05) was found between rural and urban collegiate students; Urban collegiate students was found to got more pull ups as compare than rural collegiate students, which means that rural collegiate students incur significantly less upper strength as compare than their counterparts.

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Table-3

Mean scores standard deviation and t-ratio of sit ups among rural and urban collegiate students

Variable	Test	Number	Mean	S.D.	T-ratio
Sit ups	Rural	150	24.16	6.88	5.66*
	Urban	150	20.31	4.82	

***=Significant**

Table -2 Shows that mean scores, standard deviation and t-ratio of sit ups between rural and urban Athlete collegiate students.

With regards to sit ups in rural and urban collegiate students they have obtained mean values were 24.16 and 20.31 respectively, the result reveals a statistically significant difference of body mass (t=<,.05) was found between rural and urban collegiate students; Rural collegiate students was found to got more sit ups as compare than rural collegiate students, which means that urban collegiate students incur significantly less Muscular strength as compare than their counterparts.

Table-4

Mean scores standard deviation and t-ratio of Sit & Reach test among rural and urban collegiate students

Variable	Test	Number	Mean	S.D.	T-ratio
Sit & reach test	Rural	150	30.56	5.66	4.94*
	Urban	150	33.43	7.45	

NS=Not Significant:-

Table -2 Shows that mean scores, standard deviation and t-ratio of sit&reach between rural and urban Athlete collegiate students.

With regards to sit&reach in rural and urban collegiate students they have obtained mean values were 30.56 and 33.43 respectively, the result reveals a statistically significant difference of sit&reach (t= 4.94<,.05) was found between rural and urban collegiate students; Urban collegiate students was found to get less sit&reach as compare than rural collegiate students, which means that urban collegiate students incur significantly more flexibility as compare than their counterparts.

Table-6

Mean scores standard deviation and t-ratio of Right hand grip test among rural and urban collegiate students

Variable	Test	Number	Mean	S.D.	t-ratio
Right hand grip test	Rural	150	33.77	6.89	3.21*
	Urban	150	30.56	4.98	

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***= Significant:-**

Table -2 Shows that mean scores, standard deviation and t-ratio of right hand grip between rural and urban Athlete collegiate students.

With regards to right hand grip in rural and urban collegiate students they have obtained mean value were 33.77 and 30.56 respectively, the result reveals a statistically significant difference of right hand grip (t=3.21,p<.05) was found between rural and urban collegiate students; rural collegiate students was found to got more right hand grip as compare than urban collegiate students, which means that rural collegiate students incur significantly more right hand grip as compare than their counterparts.

Table-7

Mean scores standard deviation and t-ratio of left hand grip test among rural and urban collegiate students

Variable	Test	Number	Mean	S.D.	T-ratio
Left hand grip	Rural	150	32.80	6.87	0.11NS
	Urban	150	32.71	6.76	

NS=Not Significant:-

Table -2 Shows that mean scores, standard deviation and t-ratio of left hand grip between rural and urban Athlete collegiate students.

With regards to left hand grip in rural and urban collegiate students they have obtained mean value were 32.150 and 32.71 respectively, the result reveals a no statistically significant difference of left hand grip (t=0.11) was found between rural and urban collegiate students

Table-8

Mean scores standard deviation and t-ratio of 12 minutes run test among rural and urban collegiate students

Variable	Test	Number	Mean (Mts.)	S.D.	T-ratio
Twelve minut run &Walk	Rural	150	1545.65	25.89	13.34*
	Urban	150	1340.25	22.70	

***= Significant:-**

Table -2 Shows that mean scores, standard deviation and t-ratio of body 12 minutes run and walk between rural and urban Athlete collegiate students.

With regards to 12minutes run and walk in rural and urban collegiate students they have obtained mean value were 1545.65 and 1440.25 respectively, the result reveals a statistically significant difference of (t=13.34, p<.05) was found between rural and urban collegiate students. rural collegiate students was found to got more aerobic fitness as compare than urban collegiate students, which means that rural collegiate students incur significantly more aerobic fitness as compare than their counterparts.

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Discussion of findings

The results of present study showed that Health-related physical was better in rural students, except for sit and reach test, in which urban students performed better This study reveals that significant deference were found in body mass Index (t= P< 0.5), pull ups (t= P<0.5), sit ups (t= P<0.5) and sit and reach and right hand grip (t= P<0.5) between rural and urban students. Urban students were found to have got less strongest than rural students. This results supported sandhu (1983) compared rural and urban students of Amritsar district. He was found rural students were stronger than urban students. Tsimeas and Tsigilis (2005) conducted a study on Greek rural students to find out "Does living in urban or rural setting effect aspect of physical fitness in children". A similar type of result was obtained in the work of Mehtap and Nihal (2005). Who conducted a study on physical fitness in rural children compared with urban children in turkey and found that children living in the urban areas were more inactive and obese than rural children. Urban students incur significantly low Muscular ability as compared to rural children. 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 result is supported Uppal and Sareen (2000) choudhary (1998) and Ray (1979). However rural students were found to have got strong right hand grip strength as compared them urban students The relatively grater right hand grip strength of rural students were Probably due to rural students engaged in vigour physical activity like agriculture and Animal husbandry. Urban students demonstrated significantly greater flexibility as compared to urban students. This may be due to the rural life style is more active in nature then the life in urban areas which produced high level physical and psychological strain in muscle in rural areas

The results of this study suggest that urban students have lower levels of aerobic fitness compared with rural students. Our findings are in agreement with other study that have examined aerobic fitness levels in African-American adults. According to observations of the Amsterdam Growth and Heath Longitudinal Study, physical activity levels affect aerobic power during puberty and later in life.Thus, I assumed that physical activity levels of our study participants were similar as earlier in their life,and,consequently,their aerobic capacity resulted from long term engagement in a given physical activity pattern. Aerobic capacity of rural students was significantly higher compared to that of urban students ,

In addition, future research examining aerobic fitness levels should assess what percentage of rural and urban students played university sports and

whether participation in such activities influenced aerobic fitness levels.

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