



A COMPARATIVE STUDY OF PHYSICAL FITNESS STATUS AMONG FEMALE COLLEGIATE STUDENTS OF KARAD CITY

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Abstract

Physical fitness is one of the facts of the person's all round harmonious development. Physical fitness is the cultural phenomenon of great complexity & magnitude, which is historically, preconditioned level of health & comprehensive development of a person. The aim of this study is to compare the physical fitness level of rural & urban female collegiate students from Karad city. A battery of three tests i.e. Harvard step test, Grip dynamometer & Peak flow meter along with anthropometric dimensions of students has been used to collect the required data. The result indicated that in cardiopulmonary endurance isometric strength of arm muscles, lung capacity & anthropometric dimensions were significantly different between urban & rural female students. The Physical fitness performs of rural female students was higher than the urban students of Karad city.

Key words: - Physical fitness, female students, Rural, Urban.

INTRODUCTION

Physical fitness is multifaceted continuum extending from birth to death, affected by physical activity. It ranges from optimal activities in all aspects of life through high and low levels of different physical fitness to severe disease and dysfunction. The ability to function efficiently and effectively is to enjoy, leisure, to be healthy, to resist disease and to cope with emergency situation. Health related component of physical fitness includes body compositions and body dimensions, cardiovascular fitness, muscular endurance, pulmonary capacity and strength.

Regular exercise, Yoga and recreation play very important role in developing and maintaining an optimal level of good health, performance and appearance. It also has beneficial effects on most of the organ system and helps to prevent many health problem and diseases.

Exercise physiology in India is relatively non development, teaching of physiology as a basic science was started in the year 1913 at Calcutta University. Preliminary research was carried out on energy metabolism, measurement of body surface area in changes in blood chemistry (Sen. 1954, Banerjee and Sen. 1955) during 1960 various Scientists stated research work on work physiology, respiratory physiology, metabolic changes and biochemical changes related to exercise and stress. International scientific congress of sports science was held in Patiala in 1982. Scientists from all over the world took part in discussion. The scientists of National Institute of sports discussed varieties of topics related to Sports, performance, physical variables, influence of training load and recovery, physiological changes at altitudes etc. Physiology has always been the basis for clinical medicine. In the same manner exercise



physiology has provided essential knowledge for physical education, physical fitness and health promotions. The aim of present study is to compare the physical fitness level of rural and urban female collegiate students from Karad city. The observations made in the present study will be useful for coaches, instructors and sports training centers.

MATERIALS AND METHODS

The present study was undertaken in Karad city from different colleges fifty female urban students and fifty female rural students were selected for the study. Total 100 female students were assessed for their socio economic information by standard questionnaire. A questionnaire was used to collect information of female students with age, class habit. parent’s economic status, diet and history of health status.

Physical Examination: -

A) Anthropometric measurements

Height and weight were recorded with standard techniques by measuring scales and weighing machine.

B) Physiological Responses

1) Lung function test :

Peak expiratory flow rate (PEFR) of female students recorded by using Peak Flow Meter. The basis of PEFR for monitoring of ventilatory function was established by Wright and Mikerrow (1959). The procedure for PEFR was repeated three times and value was recorded in Liter/Min.

2) Grip Strength :

The grip strength of right and left hand for isometric strength of arm muscles were recorded by Grip Dynamometer.

3) Physical fitness:

Physical fitness of rural and urban female students was recorded by Standard Harvard Step Test. The students were asked to step on up and down from the Bench for 30 times per minute for 5 minutes or until to fatigue by steps. Immediately after exercise students were asked to sit in chair. The pulse rate counted from 1-1/2 minute after exercise. The fitness index (FI) was calculated after exercise from the following formula,

$$\text{Fitness Index} = \frac{\text{Duration of step in Sec. X 100}}{5.5 \times \text{Half min. recovery Pulse count}}$$

Finally grading score was calculated.

OBSERVATIONS AND RESULTS

The questionnaire survey has recorded that all the rural female students are physically fit most of the students from urban area and their socio economic conditions are very poor. The

physical characteristics like height and weight, it is observed that average values of height cm and kg respectively.

Table No.1

Sr. No.	Test Item	Subject	Mean Value	S.D.
1	Lung Function Test	Rural female students	3.40	48.01
		Urban female students	3.10	
2	Grip Strength	Rural female students	36/26	5.96
		Urban female students	27/28	
3	Harvard Step Test	Rural female students	76.60	16.11
		Urban female students	58.64	

Table No.1 shows lung function test, which was measured by using peak flow meter which indicates peak expiratory flow rate (PEFR). The average PEFR values for rural female students **3.40** lit/meter and for urban **3.10 Lit/min**. Grip strength study of rural and urban female student was measured by Grip dynamometer. The average grip strength values for right hand and left hand are **27** and **28Kg** for urban female students while for rural students are 36 and 26-.which indicated that these values are lower for urban female students than rural females student

Physical fitness score which was measured by using Harvard Step Test the average fitness index was **76.60** for rural female students which can be classified as high average fitness index and for urban female students average fitness score index observed was **58.64** which can be classified as **low average** fitness score which indicates that rural female students are physically fit than urban female students.

DISCUSSION

Physical exercise is an important health improving behavior which is beneficial for many individuals in all status of health. Carter (1970) suggested that, the basic structure of body must be present to achieve success in different sports. Pamell (1958) indicated that the choice of sportsman for the particular event is largely determined by the inborn characteristic. The other factors such as exercise, physical training can improve the performance up to certain limit, that is set by his genotype, Bonchard and Malina (1983) . The level of physical fitness is generally depends on many factors of these age, height weight are very important.

In present investigation, it has been found that, the average height observed among rural female student was 160 cms and urban 156 cms. The average weight observed was **52 Kg** and **49 Kg** for rural and urban female students respectively.

The mean PEFR values observed are **3.40 Lit./min** for rural female students and 3.10 L/min for urban female students. So it can be concluded that physical work and exercise of rural students increases lung capacities which fulfill the need of oxygen for physical activities.



In present study average physical fitness score observed was **58.64** for urban female students and **76.60** for rural female students, which shows excellent physical fitness in rural female students as showing Table No. 1

The grip strength values of rural female students are higher than urban. So it has been concluded that physical work improves the muscle strength of forearm, which ultimately helps in other activities for female students.

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