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Dr. RS Sindhu

Associate Professor, St. Thomas
College, Kozhencherry, Kerala,
India

Comparison on select of kinanthropometric, physical fitness and physiological variables between urban and rural girls

Dr. RS Sindhu

Abstract

The purpose of the study was to compare the kinanthropometric, physical fitness and physiological variables between urban and rural girls. In this study statistical population included 80 selected subjects from Govt. Higher Secondary Schools of Kollam District, Kerala for this study. Forty urban and forty rural school going girls were taken as the subjects, only those subjects, who are non – players, were selected as subjects. The necessary data was collected through the administration of standardized instruments for the measurement of chosen variables. The following components of Kinanthropometric, Physiological, and physical fitness were selected for the present study such as Height, Weight, Blood pressure, Pulse rate, Speed, Flexibility and Agility. The height was measured in Centimeters by Anthropometric Rod. The weight was measured in nearest kilograms by Weighing Machine, the blood pressure was measured in mm Hg Automatic Digital Blood Pressure Monitor. Resting pulse rate was measured by pulse oximeter. The speed was measured in seconds with the help of 50 Meter Sprint. The agility was measured in seconds with the help of Shuttle Run. The flexibility was measured in floor touch test. The data was analyzed and compared with the help of statistical procedure in which arithmetic mean, standard error mean, standard deviation and t- test were used to compare the data. The analysis of data revealed significant difference and insignificant differences among urban and rural school going girls on Kinanthropometric, Physiological, and Physical fitness variables. The result of 't' value indicated insignificant difference in Blood pressure (Diastolic and systolic), Resting pulse rate, Weight, and Agility of urban and rural school going girls when urban girls performed better than their counterparts. The results strongly confirm that, significant differences were observed between urban and rural school going girls for their height, speed and flexibility. This indicated that regular vigorous activity produces physical fitness improvements as in countryside area an active life style is observed on a relatively high level of physical and physiological functioning is retained as compared to the rural residents. With reference to physiological components urban girls are better than rural girls. The reason for this is more likely related to the fact that urban population have more money and we all know that one who belong to rich family Activities performed by urban residents such as walking, lifting etc. are good examples, which becomes a deciding factors where rural residents are lacking. Same in the components such as height and weight, the urban girls' residents are found better than rural girls mainly because of their life style.

Keywords: Diastolic, systolic blood pressure, resting pulse rate, height, weight, speed, agility, flexibility, and girls

Introduction

Being healthy should be part of your overall lifestyle. Living a healthy lifestyle can help prevent chronic diseases and long-term illnesses. Feeling good about yourself and taking care of your health are important for your self-esteem and self-image. Maintain a healthy lifestyle by doing what is right for your body. Exercise physiology is the study of the body's responses to physical activity (Bayers, *et al.* 2009) [4]. These responses include changes in metabolism and in physiology of different areas of the body like the heart, lungs, and muscles, and structural changes in cells. Exercise physiology is one of the important areas. The physiological traits depend upon the race, geographical and climatically conditions of human beings. Therefore, it is receiving spotlight attention all the time (Boon, 1967) [7]. Exercise physiology explains the process of muscle type, how muscles are improving in proper manner, what are the weaknesses of muscles, etc.

Correspondence

Dr. RS Sindhu

Associate Professor, St. Thomas
College, Kozhencherry, Kerala,
India

Physiological components it is universally accepted that the physiological functions of the body improve with use and decline with disuse. More specifically the heart, lungs and muscles become stronger and more durable the more they are used. The improvement of muscle power and successful performance in emergencies need a high level of fitness of respiratory system, cardio vascular system and physiological variables (Al Absi *et al.* 2000) [1].

Resting pulse rate averages 60 to 80 beats per minute. In middle aged, unconditioned, sedentary individuals the resting rate can exceed 100 beats per minute. In highly conditioned endurance – trained athletes, resting rates in the range of 28 to 40 beats per minute have been reported one's resting heart rate typically decreases with age (Bhomic, 1987) [5]. Kinanthropometry is a medium for individuals to contribute to basic research and applications and is closely associated to physical education, sports science and medicine, science of growth and other several disciplines. It is a scientific specialization dealing with body measurements in a variety of morphological perspectives, its application to movement and those factors which influence movement. Kinanthropometry is analogous to mechanistic approach to human motion i.e. anthropometry. However, the studies in kinanthropometry are confined to width, length and girth measurements instead of alterations that arise in the human physique out of physical training (Bolzan *et al.* 1900) [6]. For this study Height, Weight, chest, arm length, hip, thigh and calf were chosen as anthropometric parameter. A fit person in modern competitive world is free from diseases, possesses adequate speed, flexibility and agility has skill to live a productive and happy life and also knows how to relax. In other words, "Physical fitness is the capacity to meet the present and potential challenges of life with success." Every person has a different level of physical fitness which may change with time, place of work, situation and there is also an interaction between the daily activities, and the fitness of an individual the point if where to put the level of optimum fitness. An urban area is the region surrounding a city. Most inhabitants of urban areas have nonagricultural jobs. Urban areas are very developed, meaning there is a density of human structures such as houses, commercial buildings, roads, bridges, and railways (Barak, 2014) [3]. "Urban area" can refer to towns, cities, and suburbs. They belong to golf and tennis or other leading clubs of their cities and engage in such activities as sponsorship of cultural arts, establishment of collections of object d'art, and the general nurturing of other social and cultural activities. Rural area or the country (or) countryside is areas that are not urbanized, though when large are described country town and smaller cities will be included, they have a

low population density, and typically much of the land is devoted to agriculture (Andrews, 1975) [2].

Rural area and tribal area are mostly same life style and also it's apposite to urban area. The term tribe commonly signifies a group of people speaking a common language, observing uniform rules of social organization and working together for common purpose. The other typical characteristics of tribe include a common name, a contiguous territory, a relatively uniform culture or way of life and tradition of common descent. According to another contention tribe is generally used to denote group of primitive or barbarous class under recognized chiefs.

Materials and Methods

Eighty subjects were selected from Govt. Higher Secondary Schools of Kollam District, Kerala for this study. Forty urban and forty rural school going girls were taken as the subjects, only those subjects, who are non – players, were selected as subjects. The necessary data was collected through the administration of standardized instruments for the measurement of chosen variables. The data was collected in the morning time from 10:30a.m. To 12:30 p.m.as it was convenient to the subjects. Mean and Standard deviation of the selected dimensions of six weeks conditioning training program of athletes were computed. Its results have been depicted in tables.

In consultation with the experts in the field, literature available and considering the feasibility criteria in mind, especially the availability of equipment. The following components of Kinenthropomertic, Physiological, and physical fitness variables were selected for the present study. They are Height, Weight, Blood pressure, Pulse rate, Speed, Flexibility and Agility. The height was measured in Centimeters by Anthropometric Rod. The weight was measured in nearest kilograms by Weighing Machine, the blood pressure was measured in mm Hg Automatic Digital Blood Pressure Monitor. Resting pulse rate was measured by pulse oximeter. The speed was measured in seconds with the help of 50 Meter Sprint. The agility was measured in seconds with the help of Shuttle Run and the flexibility was measured in floor touch test.

Statistical Procedure: The data was analyzed and compared with the help of statistical procedure in which arithmetic mean, standard error mean, standard deviation and t- test were used to compare the data.

Results

Table 1: Mean and Standard Deviation Level of the Variables of Urban and Rural School Going Girls

Variables	Group	N	Mean	Standard deviation	Standard error Mean	t value
Diastolic BP	Urban	40	81.30	8.98	1.42	1.4974
	Rural	40	84.15	8.01	1.27	
Systolic BP	Urban	40	123.85	9.92	1.57	0.7889
	Rural	40	125.88	12.85	2.03	
Resting Pulse Rate	Urban	40	89.03	10.95	1.73	0.1763
	Rural	40	88.65	7.81	1.23	
Speed	Urban	40	9.8715	0.7057	1.116	2.4223*
	Rural	40	10.3255	0.9524	0.1516	
Flexibility	Urban	40	3.25	4.75	0.75	2.7813*
	Rural	40	6.25	4.90	0.78	
Agility	Urban	40	10.9122	0.7112	0.1125	0.4187
	Rural	40	10.8350	0.9250	0.1463	
Height	Urban	40	157.755	6.266	0.991	3.1364*
	Rural	40	153.263	4.686	0.741	

Weight	Urban	40	47.6075	6.7982	1.0749	1.0411
	Rural	40	49.2000	6.8826	1.0882	

t.05 (78) = 1.99

From the above table, following conclusions were drawn. There were insignificant difference between urban and rural school going in the variables of diastolic, systolic and resting pulse rate, and urban students were better than rural school going girls at .05 level. There were significant difference between urban and rural school going in the variables of Speed, where urban school girls were superior than rural school going girls at .05 level. There were significant differences between urban and rural school girls in the variables of flexibility, where rural girls are superior than urban school going girls at .05 level. There were insignificant difference between urban and rural school going girls in the variables of agility, where urban students are better than rural school going girls at .05 level. There were significant differences between urban and rural school going in the variables of height, where urban students are superior to rural school going girls at .05 levels. There were insignificant difference between urban and rural school going in the variables of Weight, where rural school going girls are heavier than urban school going girls at .05 level.

Discussion of the findings

The analysis of data revealed significant difference and insignificant differences among urban and rural school going girls on Kinanthropometric, Physiological, and Physical fitness variables. The result of 't' value indicated insignificant difference in Blood pressure (Diastolic, Systolic), Resting pulse rate, Weight, and Agility of urban and rural school going girls when urban girls performed better than their counterparts. This indicated that regular vigorous activity produces physical fitness improvements as in countryside area an active life style is observed on a relatively high level of physical and physiological functioning is retained as compared to the urban residents.

With reference (Brabant and Jose 1983) [8] to physiological components urban girls are better than rural girls. The reason for this is more likely related to the fact that urban population have more money and one who belong to rich family, activities performed by urban residents such as walking, lifting etc, are performed regularly, which becomes a deciding factor where rural residents are lacking. Same in the components such as height and weight, the urban girls are found better than rural girls mainly because of their life style. The comparison of components on Speed, Height and flexibility are found significant difference but in these factors also the urban girls had performed better than the rural girls.

Conclusion

On the basis of findings of present study, the following conclusions were drawn.

The results strongly confirm that, significant differences were observed between urban and rural school going girls for their height, speed and flexibility.

The results strongly confirm that, insignificant differences between urban and rural school going girls for their diastolic and systolic blood pressure, resting pulse rate, weight, and agility.

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