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Geographical influences on physical variables of boys at adolescents level

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Abstract

The present study has been designed to geographical influences on physical variables boys at adolescent level. To achieve the purpose of this study samples were selected from both coastal, hills area and plain areas. As coastal area geographically Thoothukudi, Ramnad, was selected. From the coastal area to select samples, students studying in college located in the coastal area within ten kilometer radius from the sea shore were selected totally 209. As hills area, students studying the college located in Ooty, Kodaikanal was selected totally 185. As plain area students studying Coimbatore, Trichy was selected totally 210. The age of the selected subjects was in the range of 17 to 19 from the were selected adolescents level boys. Percent body fat, Flexibility and muscular endurance were selected as physical variables. The collected data have been processed with one-way analysis of variance. Further post hoc test was employed on the variables found to be significant to study the source of significant mean difference. In the tested variables the obtained results are favours to the coastal area boys.

Keywords: Physical variables, coastal, plain and hills area and adolescent

Introduction

The geographical condition is one of the foremost factors that determine the individual's physical, motor fitness, anthropometric, physiological, and psychological aspects, since an Individual is biologically accommodated. Geographically, people can be classified as people living in plain areas, hill area and coastal area. The plain area, hill area, and coastal area differ from each other in physical and environmental structure. Such a structural variation existing among these areas would have significant impacts in the living conditions of people, which results vary in the physical, physiological, and cultural aspects. As for as sports participation is concerned, though the government has announced many schemes, to promote the sports population, so far a very meagre amount of participants only hailed from the hill and coastal areas.

In studying the environmental impacts, primary consideration can be given to geographical structure, in which the individual is survived and accommodated. Geographical conditions refer the area in which the structure of land, climate conditions, soil structure, and humidity. In fact, the living circumstances of human beings in terms of its geographical structure can be classified into plain areas, hill areas and coastal areas. These areas are differed in terms of structural aspects of land, climate, soil and humidity. In considering the population density of India, nearly one-third of its population is living along the coastal area and nearby coastal-based zones. In nature, ecological conditions exist in the coastal area helping the people naturally to have healthy atmosphere in terms of physical, physiological and psychological aspects. Different environment living have differences in temperature lifestyle, food habits, mode of transportation and nature of labour, which can have its impact on the physical and physiological aspects. So physical body tends to manage to homeostatic functions consistent with the environment they're living. In the same way the various geographic atmosphere will have its variation according the gender and age. During these study different geographic areas like, coastal, hills and plain region was taken to seek out that differences in physiological variables thanks to the living atmosphere. Still there are different of opinions on this several studies.

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Methodology

The purpose of the study was to find out the geographical influences on physical variables of boys at adolescent level studying in arts and science colleges of coastal situated in and nearby coastal area, plain area and hills area. Age of selected subjects was in the range of 17 to 19 years boys. Thus for coastal area, colleges situated within ten-kilometre radius from sea shore nearby Thoothukudi, Ramnad, was selected where by 210 samples were selected. In connection with the samples selected from hills area 185 students studying in colleges from the Ooty, Kodaikanal were selected. Finally 210 students were selected as samples for plain area from the colleges situated in Coimbatore, Madurai and Trichy. Flexibility, muscular endurance and percent of body fat. Sit and reach test was conducted to test the flexibility, one minute modified sit ups was conducted test the muscular endurance, skinfold caliber test was conducted test the percent of body fat.

Result and Discussion

Table 1: Descriptive Statistics on Physical Variables

Variables	Geographical conditions	N	Mean	Std. Deviation	F-Ratio
Flexibility	Coastal	209	25.43	4.61	1.31
	Hills	185	24.70	5.28	
	Plain	210	25.31	4.42	
Muscular Endurance	Coastal	209	29.49	6.36	42.06
	Hills	185	23.34	7.66	
	Plain	210	26.67	5.92	
Percent Body Fat	Coastal	209	11.44	1.06	65.15
	Hills	185	10.17	1.02	
	Plain	210	10.85	1.22	

* Significant at 0.05 level of confidence.

Table-1 reveals that the mean and standard deviations of physical variables of boys belong to coastal areas hills areas and plain areas as follows. In flexibility 25.43 ± 4.61 for coastal area, 24.70 ± 5.28 for hills area, 25.31 ± 4.42 for plain area, in muscular endurance 29.49 ± 6.36 for coastal area, 23.34 ± 7.66 for hills area, 26.67 ± 5.92 for plain area. In percent body fat 11.44 ± 1.06 for coastal area, 10.17 ± 1.02 for hills area, 10.85 ± 1.22 for plain area. Following this observed F -ratio for physical variables are as follows. 1.31 (Flexibility), 42.06 (Muscular endurance), 65.15 (percent body fat) the observed 'F' ratio were tested for significance at 0.05 level. Further the observed 'F' ratio based on the results, it was inferred that in physical variables boys belonging to coastal areas were found to be higher on flexibility, muscular endurance and percent of body fat and the boys of hills and plain areas.

Discussion on findings

One among the physical aspects selected for this study such as muscular strength and endurance and percent body fat was found to favour the boys hailed from the coastal area compared to the boys from the hills and plain area. Besides, boys from the hills and plain areas are found to be comparable in the physical aspects of abdominal muscular strength and endurance and percent body fat. Geographically, coastal areas are placed with soft sand, in the coastal area the lifestyle of the boys are entirely different from the plain area and hill area. Concerning structural influences of coastal areas and hill areas it demands more or less equal over the physical aspects of biological characteristics such as percent body fat and

muscular endurance. In the coastal area, and hill area benefit the transport facilities, they prefer to use walking suiting the various infringes so as to reach the place within the short time and also less consumption of energy. Such a source developed their day to day life as their daily way of life. Normally, walking either in the soft sand of coastal area or up and down of hill area for about an hour daily to meet out their demands, indirectly make the people to strengthen their lower extremities and the ability of core strength. Strengthening the lower part of lower extremities enables to enhance the oxygen level among the people as enhances the performance of calf muscle referred as the second heart as the calf muscles pump venous blood back toward the heart. The veins in calf act like a reservoir for blood where body does not need its circulation at any given time.

In studying the mechanism of walking on the soft sand, according to Mason (2004) [7] that heel strike does not come down and hit that from the surface. Instead body adjusts by relying small muscles around the ankle to keep the foot steady. In addition that foot also cannot go flat because the surface is not flat. Now the calf muscles come into act and would be supported when the person goes for toe-off, some of the sand gets on top of the muscle and person not able to bring that toe-up simply. At this time the calf muscles start to work more. Likewise in the hill area people have to use walking difficult and downhill in which their heart rate will get high when they walk on hills since their body will need to work harder to do it. This will get oxygen flow all over the body more quickly and help to build up more stamina.

Conclusions

Now a day's hills areas and plain areas students spending more hours Tv, Mobile and computer but coastal areas are very restricted in internal transport facilities and in the services of infrastructure to meet out the day-to-day living circumstances as easily availed by people from plain areas. Though it seemed to be pitfalls in facilities, in nature it ultimately helps them to develop their physical and its relative factors. Further, considering their food items, the main food item of coastal area people is sea foods, which enhance the essential nutrient and improves the circulation and keep lungs stronger which is the foremost one for the sportsman to excel in performance. Research over the past few decades has shown that the nutrients and minerals in fish, particularly the omega 3 fatty acids are heart friendly and can make improvements in brain development and reproduction.

Geographical influences on physical variables was observed in the present study when comparing the boys studying in coastal area were found to be better than the boys studying in hill area and coastal areas. From this it was concluded that ecological conditions exist and lifestyle of the students might have been the significant cause for the dominance of boys studying in coastal areas compared to the student of other areas.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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