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Impact of migration on physiological status among the students of Tamil Nadu agricultural university

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Abstract

The purpose of this study was to find out the impact of physiological status between urban and rural students in Tamil Nadu Agricultural University, Coimbatore. This study was conducted in rural and urban students (Tamil Nadu Agricultural University, Coimbatore) during the month of July 2018. The present study focused on using convenient sampling to select students from one University. After chosen the specific University, I used the systematic random sampling method to select rural and urban students. Study was conducted out of 200 male students, 100 rural students and 100 urban students were selected from Tamil Nadu Agricultural University. The physiological status tests were taken from urban and rural students in same condition. The tests were included: cardio – respiratory endurance, blood pressure and heart rate. Descriptive (average, standard deviation) and inferential statistics (independent t- test) were used for data analysis. The results of the study indicated that in all measured parameters there were significant mean difference between rural and urban students ($p < 0.05$). Rural students were stronger than urban students. The life style of rural children likely was the best reason for their better physiological status.

Keywords: Agricultural, migration, physiological, environmental

Introduction

India is an agricultural country. In India 70% of its population is depending upon the field of agriculture. Five decades before, in India people were considered the field of agriculture as their primary source for their livelihood. Such type of trend is turned to dismal show on agriculture due to change of people attitude of migration towards the urban area. Ever increasing of the people migration, not only reduces the population density in rural area also develops a great vacuum in the field of agriculture. The Father of our Nation Mahatma Gandhi firmly believes that villages in India determine the future of Nation. But the present trend in agriculture we were unable to sustain the belief over the field of agriculture. This is the reality of people exist right now

In the last 10,000 years, the very powerful environmental force is only the migration of human beings. The Industrial revolution happened in this world is one among the significant cause for affecting the atmosphere (Torrey, 2004) [1]. Ever increasing population has magnified the effects on agriculture and economic activities of this entire world. According to the Malthusian theory of population, the growth population is in geometric mean whereas the growth of food production is in arithmetic mean. Such an atmosphere made people to migrate to urban areas. Besides economists are confident that community over the migration of population in the next few years, half of the world population will be living in the urban areas (Malthusian, 2015). From the earlier history, it was observed that in 1800 only about 2% of the world population lived in urban areas. Regarding migration of population to urban areas, in this last 200 years the world population has increased from 2% to 50% of population. The growth in urban areas comes from migration to the cities. Much of the urban migration is driven by rural population to have the advantages offered by urban areas (Jie, 2013) [3]. Urban areas provide education, health care and other entertainment. Changes made in the urban environment due to the migration of population from rural areas increases the rate of pollutions and affect the environmental health and quality of life of few people in urban areas (Narges Alina, 2015) [4]. The Urban environment entertains the quality of life in urban areas. Normally because of less

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built up areas and emerged population results in water scarcity and sanitary condition. Such type of problems due to the environments, affects the quality of life of the people in terms of health. In sum of it affects the fitness and wellness of human life. Such an impact of environments in which students hailed, have to be studied among the students of agricultural community so as to study its complimentary effects on factors contribute to health aspects. Among the healthy aspects, the present study has to focus on physiological capability among the students as they influenced significantly by the environment (Liu, 1996) [5].

Physiology is the scientific study of the functions and mechanisms which work within a living system. Being a sub discipline of biology, it deals with how organisms, organ systems, organ cells, and bio molecules, a carry out the chemical and physical functions that exists in the living system. In fact physiological functioning is studying the fundamental bio physical, bio chemical nature, the coordinated homo static control mechanisms and continuous communication between cells (Widmaier, 2006) [6]. In human body physiological state refers the condition occurring from normal body function while pathological state is centered on the abnormalities that occur in the human beings. Thus human physiology help an indirectly to understand the mechanisms that work to keep the human body arrive and functioning, with the help of scientific investigation into the nature of mechanical, physical and bio chemical functions of humans, their organs and the cells of which they are composed. Changes in physiology can impact the mental functions of individuals. Changes in behavior as a result of these substances are often used to access the health of individuals (Hershel Raff, 2004) [7].

Purpose of the study

The purpose of the study was to find the impact of physiological status between rural and urban students from Tamil Nadu Agricultural University, Coimbatore.

Methodology

To achieve purpose the present study was conducted between rural and urban students (Tamil Nadu Agricultural University, Coimbatore). The present study focused on using convenient sampling to select students from one University. After chosen the specific University I should use the systematic random sampling method to select rural and urban students. The study was also conducted out of 200 male students, 100 rural students and 100 urban students were, selected from Tamil Nadu Agricultural University. In selection of students for urban areas criteria has been fixed that who were migrated from rural areas to urban areas. In considering the actors for migration, mostly found on work employments and economic exists. The physiological status tests were taken from urban and rural students in same condition. The tests were included: cardio – respiratory endurance, blood pressure and heart rate. Descriptive (average, standard deviation) and inferential statistics (independent t- test) were used for data analysis. The results of the study indicated that in all measured parameters there were significant difference between rural and urban students ($p < 0.05$).

Analysis of the Data

Summary of mean values and significance of mean values between rural and urban students of Tamil Nadu Agricultural University on cardio respiratory endurance, blood pressure and heart rate.

Table 1: Inferential statistics on physiological status between rural and urban students of Agricultural University

Test		Rural Students	Urban Students	't' – Value	
Cardio Respiratory Endurance	Mean	1526.56	1387.32	4.35*	
	SD	214.60	237.82		
Blood Pressure	SBP	Mean	114.69	7.08*	
		SD	8.15		9.43
	DBP	Mean	76.58	81.44	3.63*
		SD	7.65	10.98	
Heart Rate	Mean	77.55	86.13	12.38*	
	SD	4.63	5.15		

*Significant at .05 level. The table value required for 0.05 level of significance with df 198 is 1.65.

Table 1 explains that the mean, standard deviations and independent 't' test of physiological status between rural and urban students of Tamil Nadu agricultural university are: Cardio Respiratory Endurance (rural, 1526.56±214.60., urban, 1387.32, ± 237.82), Systolic Blood Pressure (rural, 114.69±8.15., urban, (123.51, ± 9.43), Diastolic Blood Pressure (rural, 76.58±7.65., urban, (81.44, ± 10.98), Heart Rate (rural, 77.55±4.63)., urban, (86.13, ±5.15). The table value required for significant difference with df 198 at 0.05 level is 1.65. Since, the Obtained 't' ratio value of rural and urban students CRE (4.35), SBP (7.08), DBP (3.63) and

(12.38) were greater than the table value, it is understood that rural and urban students had significance difference among selected variables. From the results of the inferential measures it was indicated that in all measured parameters there were significant difference between rural and urban students ($p < 0.05$). Rural students were stronger than urban students. The life style of rural children likely was the best reason for their better physiological status. The mean values of rural and urban group on selected variables were graphically represented in the figure 1.

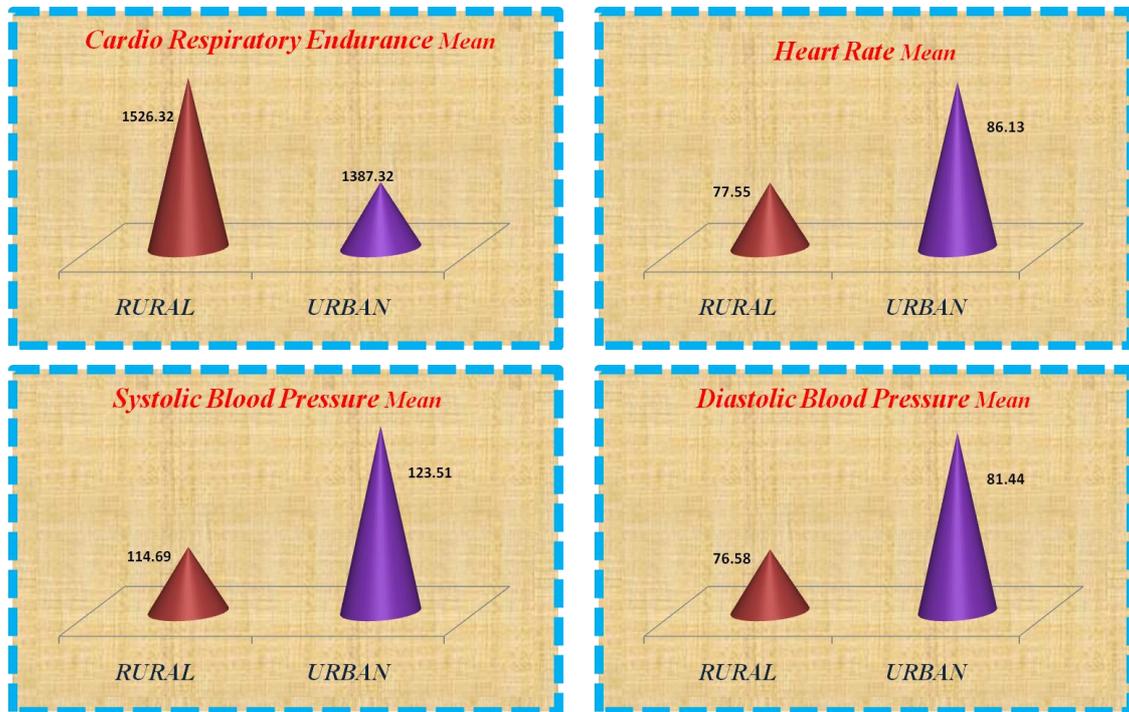


Fig 1: The mean values of rural and urban group on Cardio Respiratory Endurance, Heart Rate, Systolic and Diastolic Blood Pressure.

Discussion on Findings

Physiological parameters used in the present study are functionally associated with one another. Changes in the heart rate determine the changes on blood pressure and sustainability of cardio-respiratory aspects of human beings. In analyze the data on physiological ability among the students of agriculture due to their environment in which they hailed, the derived results are favored to the students hailed from the rural areas. The sources for the significant influence of environment on physiological status are discussed as follows.

Healthy environment naturally provides healthy atmosphere to the human beings in terms of physical, physiological and psychological aspects. In the cardio respiratory parameters of heart rate and blood pressure, the students hailed from the rural areas are found to be better than the students of urban areas. It has been substantiated by the study who has conducted a study on impact of living conditions in rural area to on respiratory health (Iverson, 2005) [8]. He used self reported data on age, gender, socio economic conditions, smoking habits, respiratory symptoms for these data analysis results of his study evidently, positively towards the impact of rural living conditions respirator health of human beings. People locating in the rural areas are less proves to illness of persistent cough, phlegm and breathlessness than the urban country parts. Thus they concluded that students pertain to rural areas reported better tracks than those living in urban areas (Camara, 2018) [9].

Quality of the air is one among the most important measures of human health. Due to migration density of population is increased in urban areas day by day which affect the people procuring even in the basic necessity. Besides, urban areas are distinguished from rural areas in terms of less built up areas which affects the area in significantly in the aspects of temperature, humidity, wind speed and direction and amount of precipitations. Resulting of this atmospheric over urban areas are higher concentrations of pollutants chronic conditions of these would affect to health of the population. In continuance of this, because of competitiveness, people prefer the motor vehicles as mode of transport. Thus transport

sources also accounted for a substantial proportion of human exposure to noise, which has negative impacts on human health and well being. Approximately 40% of populations living in the largest cities are found to be exposed to road traffic noise levels exceeding 55 decibels. Such a nature is described increasingly dangerous to public health (Evans, 2002) [10]. Such a hectic transport affects the healthy environment. An excess the respiratory health effect of city ambient air pollutants on transit and non transit workers, so as to analyze the transports mode how long affects the respiratory aspects. From the results they concluded that air pollution a city transit workers were having adverse respiration health. He has concluded the result of study lends considerable weight to the existing literature on the unfavorable health effects of ambient air pollution on urban based population (Ekpenyong *et al.*, 2012) [11].

The findings of the study were also agreed with the findings of Manmeet *et al.*, (2010) [12] who came to the conclusion that the rural female university students in strength, endurance, agility and speed are stronger than urban students and urban students had more flexibility and their weight are higher than rural students. Sinku kumara *et al.*, (2011) [13] in fitness comparisons of Indian students concluded that the rural students had more speed, endurance, cardio- respiratory and explosive power than urban students. Kumar Sunil, (2012) [14] found that the rural students in cardio- respiratory fitness and body composition were better than urban students. Saha *et al.*, (2012) [15] concluded that speed and body fat percentage of urban rural students but in sit-up, traction and flexibility rural school students were better than urban students. Seryozha *et al.*, (2013) [16] concluded that females in urban schools get better results in the sit-up and the flexibility. Deyou *et al.*, (2014) [17] concluded that urban female students in cardio – respiratory endurance, muscular endurance, and flexibility were stronger than rural students and rural students were stronger in muscle strength.

Due to the fact that physiological status of students in early childhood and in adulthood is important, a large number of studies about physiological variables of students around the world have been done. A look at the research done has shown

that there was limited information in comparison of physiological related on urban and rural students in Tamil Nadu Agricultural University.

Conclusions

From the results achieved, the following conclusions were drawn: Life style is one of the most influential actor in determining the physiological status among the students. Regarding life style, rural based students are differed from urban based students. Life style refers the food habits, facilities, living conditions, mode of transport, recreative activities and ecological status (Sallis, 2009) [18]. As for as food habits concerned people in the rural areas can have natural and fresh food where as in the urban areas, mostly they procure and used the food items already beverage, it affects their healthy physiologically. Like this when analyses facilities, very limited for rural based students when compared to urban based students. Such types of situations makes the people of rural areas accommodate the situations and learned to live with the atmosphere. Regarding transport facilities in urban areas easily access since various mode of transport available, which makes the people of urban areas prefer the available transport facilities, resulting of this reduce their physical world (Handy, 2002) [19]. Following this in considering the other factors that are influenced significantly between rural and urban areas are re-creative activities and ecological conditions. In urban areas having the plenty of time prefers to use for re-creative purpose whereas in the rural areas, they prefer to complete other task. Finally when considering ecological conditions, rural areas provide natural environments unlike artificial environments exist in urban areas, thus ecologically having healthy environment, quality in air, proper ventilation, provides healthy atmosphere naturally to the people in rural areas. In such a way the life style of people in rural areas in nature serve as complementary effect for their good health. In such a way, the impact of domicile has significant source for the dominance of rural students on physiological status compared to students of urban areas.

1. The results derived from the physiological status, confirm the impact of migration and domicile between rural and urban students among the students of agricultural. In the heart rate and blood pressure, rural students were found to be positively less compared to urban areas.

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