



Analysis of blood pressure and pulse rate among school students

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Abstract

The purpose of the study was to compare blood pressure and pulse rate among school students. To achieve the purpose of the study Ninety male athletes were selected from Government Girls Higher Secondary School, St. Thomas Higher Secondary School and Kanchi Sri Sankara Academy Matriculation Higher Secondary School, Tiruchendur, Thoothukudi District, Tamil Nadu. The age of the subjects was ranged from 15 to 18 years respectively. The physiological variables such as systolic and diastolic blood pressure and pulse rate were selected as dependent variables for this study. The blood pressure was tested by using Omron Blood Pressure Monitor and pulse rate was assigned by using radial pulse method. The data collected from the subjects were treated with Analysis of Variance. Scheffe's Post hoc test was used to find out the paired mean difference among the groups. It was concluded that, there was a significant difference among three groups on blood pressure and pulse rate. It also indicated that, government aided school students were better in blood pressure, government school students were better in radial pulse method.

Keywords: Blood pressure, pulse rate, school students, male adolescents, systolic blood pressure, diastolic blood pressure, radial pulse method

Introduction

Now a day, we are passing through such an environmental phase where we are simply encountering with pollutants in every moment. Urbanization and industrialization bring comfort and affluence; make our lives pleasant, jubilant and luxuriant. At the same time, they render numerous complications and diseases.

Exercise physiology is the scientific study of physiological changes in athlete's body with the effects of exercise, whether long term or short term. Different environmental changes, viz. attitude, climate, temperature, humidity, nutritional status etc. have some close associations with the optimal performance of an athlete.

Apart from these, health status, drugs, sleep, anxiety etc. also affect the performance of athletes. Therefore, good health, good habits, good way of living and sound techniques of various sports events are the main mantras for the success of any sports. Knowledge of exercise physiology makes an athlete well equipped to participate in competitive sports. (shyamal koley, 2007) [7].

"Functioning of the body requires energy which depends upon the ability of the heart and blood vessels to process oxygen and deliver are to the muscle where it becomes fuel for energy". Regular exercise results in an increase in the blood improved oxygen carrying and waste removal capacity and increase work load capacity.

Deficiency of an individual in performing activities depends basically on cardio respiratory change and training causes development of

cardio respiratory efficiency. Through training the efficiency of the circulatory and respiratory systems is improved and resting and exercise blood pressure values are lowered" (Reilly,1990) [6].

Statement of the problem

The purpose of the study was to compare the blood pressure and pulse rate among the students of government, government aided, matriculation school athletes.

Methodology

To achieve the purpose, ninety male athletes from (Tiruchendur Government Higher Secondary school, St. Thomas Higher Secondary School and Kanchi Sri Sankara Academy Matric Higher Secondary school in Tiruchendur, Thoothukudi District, Tamil Nadu were selected randomly as subjects. The age of the subjects ranged from 15-18 years. The criterion variables selected for this study are blood pressure (Systolic, Diastolic) assigned omron blood pressure monitor in mmhg, Normal pulse rate assigned radial measuring pulse in numbers. The selected criterion variables were statistically analysed for significant difference using "F" ratio. In this case, 0.05 level of significance was used to test the hypothesis. Whenever 'F' ratio was found to be significant, the scheffe's test was used as post hoc test to determine the mean difference in the paired means.

Analysis of data

Table 1: Analysis of Variance on Systolic Diastolic and Normal Pluse Rate of Three Different Groups

Variables	Mean			Sum of Variance	Sum of Squares	Df	Means Squares	'F' ratio
	Government	Government Aided	Matriculation					
Systolic	125.33	120.67	122.10	Between	342.87	2	171.43	13.11*
				within	1138.03	87	13.08	
Diastolic	77.30	81.26	81.33	Between	320.07	2	160.03	17.92*
				Within	776.83	87	8.93	
Normal pulse rate	72.10	73.73	74.80	Between	110.96	2	55.48	23.50*
				Within	205.37	87	2.36	

(The table value required for significance at .05 level with degrees of freedom (df) 2 and 87 is 3.09)

Table 2: Scheffes Test for The Difference Between the Paired Means on Systolic Diastolic and Normal Pulse Rate Among Three Different Groups

S. No	Variables	Mean Values			Mean Difference	Confidential Interval
		Government School Students	Government Aided School Students	Matriculation School Students		
1	Systolic	125.33	120.67		4.66*	2.70
		125.33		122.10	3.23*	
			120.67	122.10	1.43*	
2	Diastolic	77.30	81.26		3.96*	2.23
		77.30		81.33	4.03*	
			81.26	81.33	0.07*	
3	Normal Pulse Rate	72.10	73.73		1.63*	1.15
		72.10		74.80	2.70*	
			73.73	74.80	1.07*	

Significant at .05 level

Results and Discussion

Table I shows that the obtained ‘F’ ratio value is 13.11, 17.92 and 23.50 which were greater than the table value 3.09 with df 2 and 87 required to be significant at 0.05 level. Since the value of ‘F’ ratio was greater than the table value, it indicates that there was significant difference exist among the mean scores of three different groups on systolic, diastolic and normal pulse rate.

Table II shows that the mean differences between government, government aided and matriculation school athletes are 4.66, 3.23 and 1.43 on systolic blood pressure 3.96, 4.03 and 0.07 on diastolic blood pressure and 1.63, 2.70 and 1.07 on normal pulse rate.

Among the three different groups the results indicated that there was significant difference are existed between government, government aided and matriculation school athletes on systolic blood pressure, government, government aided and matriculation school athletes on diastolic blood pressure, government, government aided and matriculation school athletes on normal pulse rate.

The result of the study in accordance with previous studies such as Ahmadizad *et al*, 2008., Alcaraz *et al*, 2008., Reilly *et al*, 1990) ^[2, 6]. Hence it is inferred from the result of the present study and literature cited, it was concluded that irrespective of schools studied, all the students were better in blood pressure and pulse rate.

Conclusion

1. There was a significant difference exists between three groups on selected variables such as systolic, diastolic blood pressure and normal pulse rate.
2. The government aided school athletes were better on systolic blood pressure and diastolic blood pressure.
3. Government school athletes were better on normal pulse rate.

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