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Effect of Volleyball Play on Heart Rate of Inter Collegiate Volleyball Players

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Abstract

The purpose of the study was to find out the effect of volleyball play on heart rate of inter-collegiate volleyball players. To achieve the purpose of the study 12 male inter-collegiate volleyball players were selected from Department of Physical Education, Bharthiar University, Coimbatore. The subjects were dehydrated in 5 Set volleyball match. The age group of subjects ranged from 18-28 years. The study was delimited to the heart rate and tested the difference between after completion of 5 set volleyball play. To execute this investigation, the researcher used dependent 't' test to find out the significant difference between 3 set and 5 set volleyball matches. In this case to test the significance 0.01 level of confidence was utilized. It was found that there was a significant increase in heart rate after dehydration.

Keywords: Volleyball, Heart Rate.

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Introduction

Dehydration refers to the loss of water from the various body fluid compartments, including the plasma, the water bathing the cells. Water constitutes 50 to 70% of the human body. It serves as a medium for chemical reactions, temperature regulation and lubrication for adults daily water needs is estimated at 1ml/kcal expended. Sources include all beverages and many non beverages foods. The minerals are operating in the body; it helps to understand the nature and general chemical properties of water. Water is the largest component of the human body, making up 50 to 70% of the body's weight. Lean muscle tissue contains about 73% water. Adipose tissue is about 20% water. The fat content increases in the body total body water decreases towards 50%. The body controls the amount of water in each compartment mainly by controlling the electrolyte concentrations in each compartment. In solution electrolytes dissociate into charged particles called ions. Water is attracted to ions, such as sodium, potassium, chloride, phosphate, magnesium and calcium. By controlling the movements of ions in and out of the cellular compartments the body maintains the appropriate amount of water in each compartment.

Methodology

The purpose of the study was to find out the effect of volleyball play on heart rate of inter-collegiate volleyball players. To achieve the purpose of the study 12 male inter-collegiate volleyball players were selected from Department of Physical Education, Bharthiar University, Coimbatore. The subjects were dehydrated in 5 Set volleyball match. The age group of subjects ranged from 18-28 years. The study was delimited to the heart rate and tested the difference between after completion of 5 set volleyball play. To execute this investigation, the researcher used dependent 't' test to find out the significant difference between 3 set and 5 set volleyball matches. In this case to test the significance 0.01 level of confidence was utilized. The investigator reviewed the available scientific literature from books, Journals, periodicals, research, papers and magazines and also taking into consideration the feasibility criteria of availability of instrument, the following variable is relevant to the present study.

Selection of Variables and test Item

Table 1
Selection of Variable and Test Item

VARIABLE	TEST ITEM/ INSTRUMENT	UNIT OF MEASUREMENT
Heart Rate	Radial Pulse	Beat/Min

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Table 2

The mean, standard deviation, difference between the means, correlation, standard error of the difference between the means and 't' ratio on heart rate of dehydration

Test	M	S D	D M	R	SEDM	t' Ratio
Pre Test	93.66	4.65	16.83	.35	4.47	3.76*
Post Test	120.50	16.51				

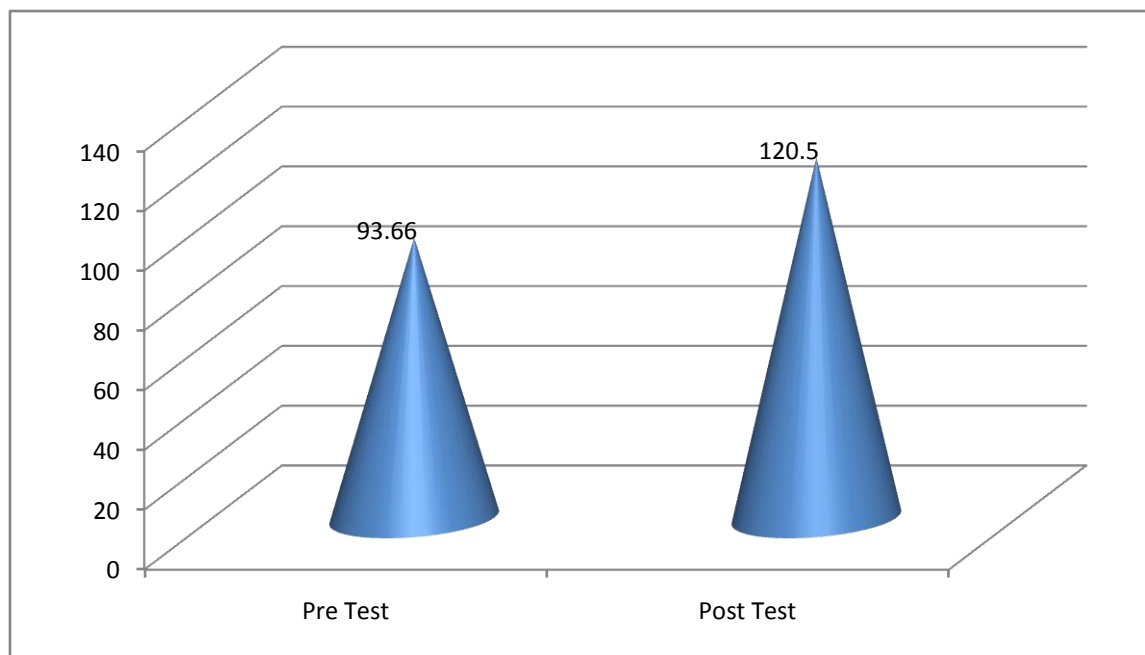
*Significance at 0.01 levels, (df= N-1) 12-1= is 3.11.

Results of Heart Rate

Table II shows that the heart rate means of pre test and post test are 73.66 and 90.50 respectively. The obtained 't' value 3.76 and the table value is 3.11 at 0.01 level of confidence. Since the obtained 't' value is greater than the table value. It is concluded that there was a significant difference in heart rate between the pre test and post test of dehydration.

Figure 1

The mean values of pre test and post test on heart rate



Discussion on Finding

From the analysis of the data the following finding may be drawn regarding the study. The result of the study reveals that there was a significant variance on heart rate after the dehydration. Due to the effect of dehydration the heart rate had significantly increased. The hypothesis states that there would be a significant increase in heart rate due to the effect of dehydration. The finding of this study reveal that there was a significant increase in heart rate at 0.01 level of confidence, hence the hypothesis was accepted.

Conclusions

The result of the study reveals that there was a significant variance on heart rate after the dehydration.

Due to the effect of dehydration the heart rate had significantly increased.

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