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RESEARCH ARTICLE

EFFICACY OF PLYOMETRIC TRAINING ON SELECTED PHYSIOLOGICAL VARIABLES RESTING HEART RATE AND RESPIRATORY RATE FOR FOOTBALL PLAYERS

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ABSTRACT

For this investigation to evaluate on impact of 12 weeks plyometric training to influence the resting heart rate and respiratory rate variables for college level men soccer players. In this investigation twelve men football players who are all studying college level were selected and based on their playing ability, as well who are all participated in district /inter collegiate level football tournament) as a subjects for this study, from Pondicherry university. Since this investigation involved following variables such as resting heart rate and respiratory rate. The subject's age ranged from 18 – 28 years as per their college/university records. The subjects were underwent plyometric training in the period of 12 weeks. The training was applied for 3 days per week one session 45- 90 minutes programme. The data were collected from experimental group men soccer players such as resting heart rate and respiratory rate variables before and after the plyometric training completion. The collected data were analyzed with paired 't'test for evaluating the impact of 12 weeks plyometric training. Results; the selected resting heart rate and respiratory rate variables has been showing positive influence by plyometric training. Hence it is showing that the selected plyometric training is suitable for develop selected physiological variables resting heart rate and respiratory ratevariables.

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INTRODUCTION

Plyometric training is most important basic training for developing various kinds of physical and physiological performances for all sports and games players. Based on the analysis for selected review of related literature showing that the plyometric training were influence the selected physiological variables like resting heart rate and respiratory rate, once if we have getting positive performance in above said variables, it may also will helpful for develop the other physical, physiological as well as skill performances to all sports and games players (Hamid Arazi, *et al*., 2013).

Objective

Objective for this study is to examine "Efficacy of plyometric training on selected physiological variables resting heart rate and respiratory rate for football players".

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METHODOLOGY

In this inquiry twelve men football players who are studying college level were selected based on their playing ability, who are participated in (inter collegiate / district level football tournament) as a subjects for this study, from Pondicherry university. The following physiological variables have been chosen for this study such as Resting heart rate and respiratory rate. The selected subject's age ranged from 18 – 28 years as per their college/university records. The selected subjects were undertaken plyometric training in the period of 12 weeks;the training was applied for 3 days per week one session 45- 90 minutes training programme. The data were collected from experimental group soccer players the resting heart rate and respiratory rate variables before and after the experimental training completion. The collected data were analysed with paired't' test for evaluating the influence of 12 weeks plyometric training to men soccer players.

Resting Heart Rate

Purpose:For assess heart beat per minute in number. Equipment: Stop watch, Score sheet, Pen and Pad. Method:

The subjects were asked to take rest in lying down position for 10 minutes, before taking resting heart rate test. After the subject were came in to the sitting position, the examiner should to hold the subjects hand and gently press the radial nerve and after recognizing the heartbeat, the examiner has counted the number of beats per minute for each subjects. Scoring: Total number of heart beats per minute for each subject was taken as the data for resting heart variable.

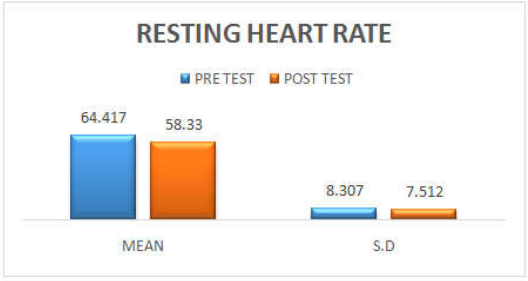
Respiratory Rate

Purpose: To measure the respiration of humans per minute. Equipment: Stopwatch, Pen, Score sheet, Pad and Flat clean surface. Methods: The subjects were asked to lie down on the floor for minimum of 10 minutes, before conducting the test, then the examiner has to touch subjects chest and to feel their respiration i.e. he has follow the chest coming up and down and count the number of respiration and that given the respiratory rate when the chest comes up is inspiration while it goes down is expiration. Counting the inspiration per minute gives the data of respiratory rate.

Table 1. Pre and post- test mean, standard deviation, standard error mean and t' ratio on the variable of resting heart rate

TEST	MEAN	S.D	S.E.M	't' TEST
PRE TEST	64.417	8.307	2.398	
POST TEST	58.33	7.512	2.168	2.439

Table-I showing the results of mean, SD and 't' ratio values of resting heart rate variable likewise the mean values are 64.417 for pre-test , 58.33 for post- test moreover the SD values are 8.307 for 7.512 and the calculated 't' value 2.439 is higher than table value 2.201 at the significant level of 0.05. Hence there is a significant difference between pre-test and post-test performance on the variable of resting heart rate.



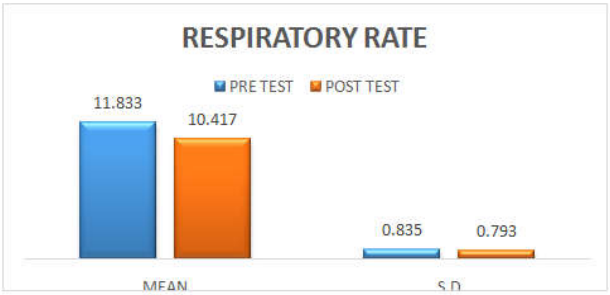
The diagram showing the results of mean and standard deviation on the variable of resting heart rate

Table 2. Pre and post- test mean, standard deviation, standard error mean and 't' ratio on the variable of respiratory rate

TEST	MEAN	S.D	S.E.M	't' TEST
PRE TEST	11.833	0.835	0.241	
POST TEST	10.417	0.793	0.229	5.451

Table-II showing the results of mean, SD and 't' ratio values of respiratory rate variable likewise the mean values are 11.833 for pre-test , 10.417 for post- test moreover the SD values are 0.835, 0.793 and the calculated 't' value 5.451 is higher than table value 2.201 at the significant level of 0.05.

Hence there is a significant difference between pre-test and post-test performance on the variable of respiratory rate.



The diagram showing the results of mean and standard deviation on the variable of respiratory rate

Conclusion

In this investigation the following physiological variables such as resting heart rate and resting rate had been positively influenced by plyometric training to men soccer players. In both above said variable post-test means and standard deviations values are lesser than pre-test values moreover the calculated 't' value is higher than table value. Hence this results showing that the given plyometric training is suitable for developing positively for above said resting heart rate and respiratory rate variables.

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