



INFLUENCE OF FUNCTIONAL INTERVAL TRAINING ON PARTICULAR PHYSIOLOGICAL CHARACTERISTICS AMONG FEMALE VOLLEYBALL PLAYERS

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ABSTRACT

The objective of this study was to find out the impact of functional interval training on physiological variables of female volleyball players. To achieve the purpose of this study, forty female volleyball players were selected SRM Institute of Science and Technology, Kattangulathur, Chengalpattu. Their age was ranged from 14 to 17 years. The selected subjects were randomly divided into two groups such as Group 'I' underwent functional interval training (n=20) and Group 'II' acted as control group (n=20). Group 'I' underwent functional interval training for three alternative days and one session per day and each session lasted for an hour for eight weeks period. Group 'II' was not exposed to any specific training but they were participated in regular activities. The data on and vo2 max was measured by cooper vo2 max test (ml/kg), breath holding time was measure by breath holding test (seconds) and resting pulse rate was measured by bio monitor (seconds). The pre and post tests data were collected on selected criterion variables prior to and immediately after the training programme. The pre and post tests scores were statistically examined by the dependent 't' test. The level of significance was fixed at 0.05 levels for all the cases in order to find out the significance. It was concluded that the functional interval training on vo2 max, breath holding time and resting pulse rate variables among female volleyball plyers. However the control group had not shown any significant improvement on selected variables such as vo2 max, breath holding time and resting pulse rate.

KEYWORDS; *Functional Interval Training, Vo2 Max, Breath Holding Time, Resting Pulse Rate and Volleyball Players.*

INTRODUCTION

Volleyball

Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964. The complete rules are extensive. But simply, play proceeds as follows: a player on one of the teams begins a 'rally' by serving the ball (tossing or releasing it and then hitting it with a hand or arm), from behind the back boundary line of the court, over the net, and into the receiving team's court. The receiving team must not let the ball be grounded within their court. The team may touch the ball up to 3 times but individual players may not touch the ball twice consecutively. Typically, the first two touches are used to set up for an attack, an attempt to direct the ball back over the net in such a way that the serving team is unable to prevent it from being grounded in their court. The rally continues, with each team allowed as many as three consecutive touches, until either a team makes a kill, grounding the ball on the opponent's court or winning the rally; or a team commits a fault and loses the rally. The team that wins the rally is awarded a point, and serves the ball to start the next rally.

FUNCTIONAL INTERVAL TRAINING

Functional training is becoming increasingly popular within the fitness industry and has been considered to be a better alternative than traditional resistance training for improving various measures of muscular fitness including strength, endurance, coordination and balance. Definitions describing what functional training is or what a functional exercise program should entail vary considerably in the literature. Furthermore, experimental research conducted to ascertain the muscular fitness benefits of functional training is limited and focused specifically on improving function in older adults (Milton et al. 2008; de Vreede et al. 2005; Whitehurst et al. 2005). Functional training (FT) is becoming increasingly popular nowadays and was ranked among the top 10 most popular fitness trends. Interval training contributes expressively to physical training and has been gradually applied to the soccer field. This sport has received more attention in colleges and universities in the country. Football has become one of the most popular sports in the world, with a large number of spectators, fans, athletes, training teams and coaches. Under the background of



the country's vigorous development of football, football training in Colleges and universities has been paid attention to Colleges and universities have become an important training base for talent training and talent transportation of professional football players. Many colleges and universities have begun to implement various talent selection policies, so that students not only rely on cultural scores to enter colleges and universities, but also students with strong sports ability and high professional talent can enter colleges and universities through various sports assessment. In addition, during their study in Colleges and universities, they plan the career path for specially recruited students through professional teams. Since the development of football related industries, colleges and universities have become an important link in the preliminary selection of talents, and the talent training system has been gradually improved. The professional training methods of the team of professional physical education teachers in Colleges and universities can help college athletes improve their sports performance efficiently, and collect and sort out the data of training intensity, training methods (Minjie *et al.*, 2023).

PURPOSE OF THE STUDY

The purpose of the study was to find out the influence of functional interval training on selected physiological variables of female volleyball plyers.

METHODOLOGY

To achieve the purpose of this study, forty female volleyball players were selected SRM Institute of Science and Technology, Kattangulathur, Chengalpattu. Their age was ranged from 14 to 17 years. The selected subjects were randomly divided into two groups such as Group 'I' underwent functional interval training (n=20) and Group 'II' acted as control group (n=20). Group 'I' underwent functional interval training three alternative days and one session per day and each session lasted for an hour for eight weeks period. Group 'II' was not exposed to any specific training but they were participated in regular activities. The data on and vo2 max was measured by cooper vo2 max test (ml/kg), breath holding time was measure by breath holding test (seconds) and resting pulse rate was measured by bio monitor (seconds). The pre and post tests data were collected on selected criterion variables prior to and immediately after the training programme. The pre and post tests scores were statistically examined by the dependent 't' test for each and every selected variables separately.

RESULT AND FINDINGS

The influence of functional interval training on selected vo2 max, breath holding time and resting pulse rate were analyzed and presented below.

1. Vo2 Max

Table-1

Computation of 't'-ratio between pre and post test means of experimental group and control group on Vo2 Max (MI/kg)

Group	Test	Mean	Standard Deviation	t-ratio
Functional Interval training	Per test	42.52	1.20	13.40*
	Post test	45.64		
Control Group	Pre test	42.44	0.98	0.96
	Post test	42.04	0.56	

* The table values required for significance at 0.05 level of confidence for df with 19

The table 1 shows that the pre-test mean value of functional interval training group and control group are 42.52 and 45.64 respectively and the post test means are 42.44 and 42.04 respectively. The obtained dependent t-ratio values between the pre and post test means of functional interval training group and control group are 13.40 and 0.96 respectively. The table value required for significant difference with df 19 at 0.05 level is 2.09. Since, the obtained 't' ratio value of functional interval training group was greater than the table value, it is understood that functional interval training group had significantly improved the vo2 max. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.



2. Breath Holding Time

Table-2

Computation of 't'-ratio between pre and post test means of experimental group and control group on Breath holding time (Seconds)

Group	Test	Mean	Standard Deviation	t-ratio
Functional Interval training	Pre test	35.56	1.95	7.90*
	Post test	39.65	0.54	
Control Group	Pre test	35.50	0.45	0.54
	Post test	35.65	0.32	

* The table values required for significance at 0.05 level of confidence for df with 19

The table 1 shows that the pre-test mean value of functional interval training group and control group are 35.56 and 39.65 respectively and the post test means are 39.65 and 35.50 respectively. The obtained dependent t-ratio values between the pre and post test means of functional interval training group and control group are 7.90 and 0.54 respectively. The table value required for significant difference with df 19 at 0.05 level is 2.09. Since, the obtained 't' ratio value of functional interval training group was greater than the table value, it is understood that functional interval training group had significantly improved the breath holding time. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

3. Resting Pulse Rate

Table-1

Computation of 't'-ratio between pre and post test means of experimental group and control group on Vo2 Max (MI/kg)

Group	Test	Mean	Standard Deviation	t-ratio
Functional Interval training	Pre test	72.10	1.12	6.40*
	Post test	70.88	1.20	
Control Group	Pre test	72.14	0.54	1.09
	Post test	72.08	0.26	

* The table values required for significance at 0.05 level of confidence for df with 19

The table 1 shows that the pre-test mean value of functional interval training group and control group are 72.10 and 70.88 respectively and the post test means are 72.14 and 72.08 respectively. The obtained dependent t-ratio values between the pre and post test means of functional interval training group and control group are 6.40 and 1.09 respectively. The table value required for significant difference with df 19 at 0.05 level is 2.09. Since, the obtained 't' ratio value of functional interval training group was greater than the table value, it is understood that functional interval training group had significantly improved the resting pulse rate. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

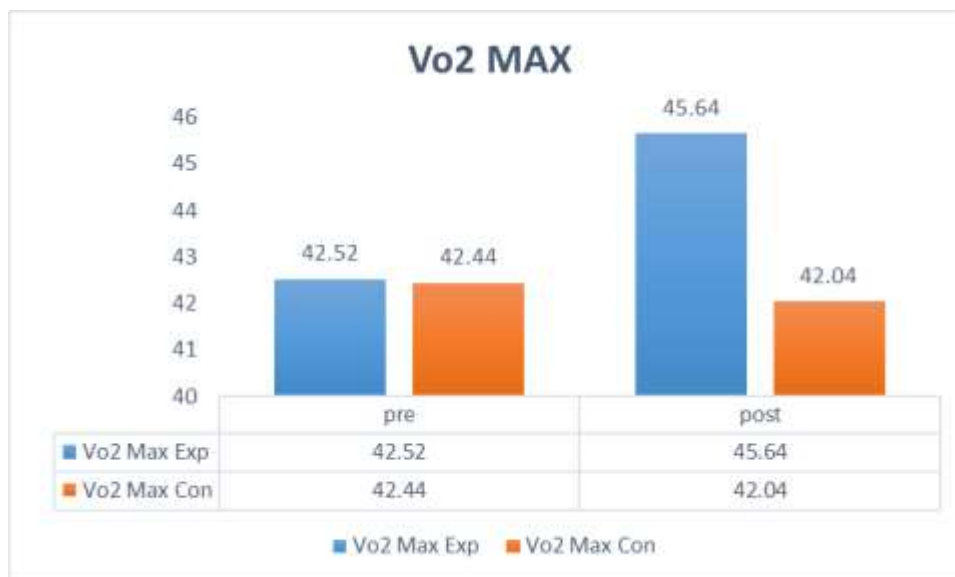


FIGURE-1 bar diagram showing the mean values of Vo2 Max pre and posttest for experimental group and control group.

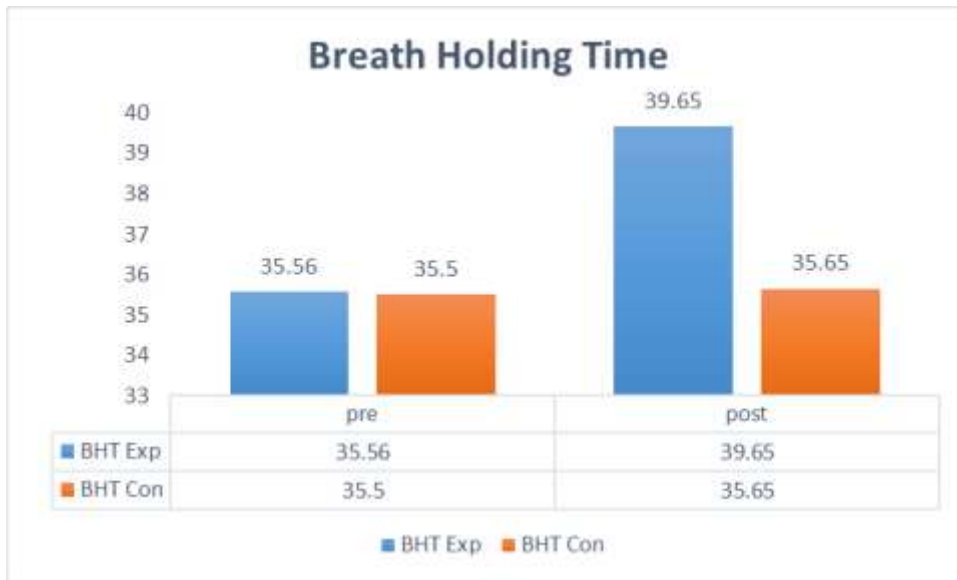


FIGURE-2 bar diagram showing the mean values of breath holding time pre and posttest for experimental group and control group.

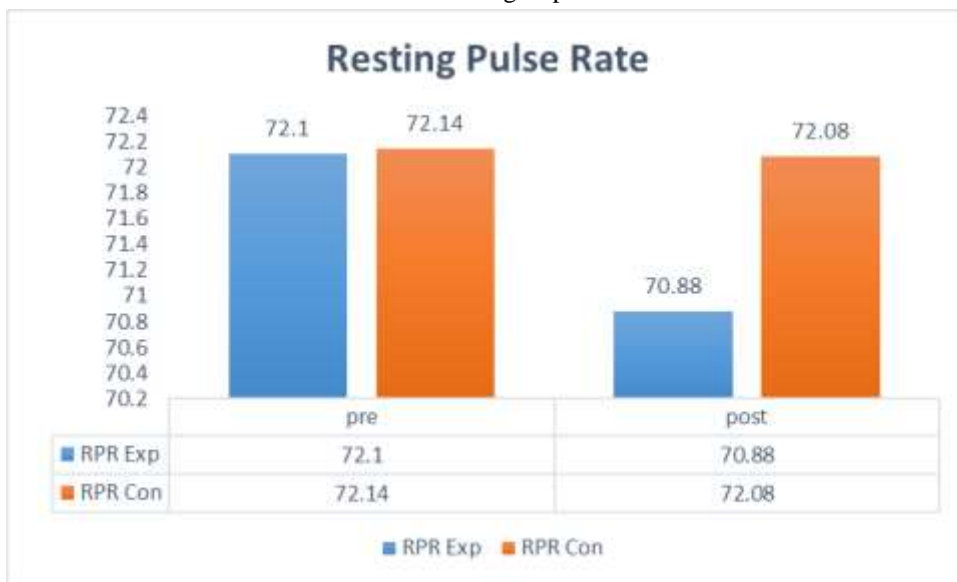


FIGURE-3 bar diagram showing the mean values of resting pulse rate pre and posttest for experimental group and control group.

DISCUSSION ON FINDINGS

The present study experimented with the impact of eight weeks of functional interval training on vo2 max, breath holding time and resting pulse rate of female volleyball plyers. The results of this study indicated that functional interval training was more efficient to bring out desirable changes over the vo2 max, breath holding time and resting pulse rate of female volleyball plyers. Investigators have extended their interest to consider the vo2 max, breath holding time and resting pulse rate commencement from the way a selected variables of female volleyball players approaches the functional interval training. Pre and posttest vo2 max, breath holding time and resting pulse rate scores between the experimental and control group were examined, there was a significant difference in posteromedial and posterior directions.

The finding of the present study had similarity with the findings of the investigations referred in this study.

Fardy et al., (1976) & Stegemann et al., (1987) Physiological variables such as heart rate and blood lactate should be measured under field conditions so that coaches can be provided with relevant information on the physical demands of the volleyball game. Information on patterns of movements and actions performed by volleyball players during the game should be also collected and analyzed. These measurements refer to notational analysis or time-motion analysis, which are used to quantify the number and



types of movements performed by the players during a game. Unfortunately, we found no studies using time-motion analysis, but 2 studies examining on-court physiological variables were discovered.

Usman et al., (2015) concluded that lower body plyometric training twice a week, for 8 weeks showed significant improvement in vertical jump performance and pulmonary function in both male and female collegiate volleyball players.

Manna et al., (2011) assess the current status of an athlete and the degree of training adaptability and provide an opportunity to modify the training schedule accordingly to achieve the desired performance.

CONCLUSION

Based on the results of the study following conclusion have been arrived that eight weeks functional interval training program was found to be most effective training protocol to bring out desirable change over vo2 max, breath holding time and resting pulse rate of female volleyball plyers.

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