



# IMPACTS OF COMPLEX WITH SAQ TRAINING ON CARDIO RESPIRATORY ENDURANCE AND RESTING PULSE RATE AMONG VOLLEYBALL PLAYERS

**Dr. R. Arivazhagan**

*Teaching Assistant (PED), Agricultural College and Research institute, Eachangkottai, Thanjavur, Tamilnadu.*

## ABSTRACT

*The rationale of the study was to find out the impacts of complex with SAQ training on cardio respiratory endurance and resting pulse rate among volleyball players. To achieve this purpose, thirty men volleyball players were selected as subjects, their aged between 21 to 25 years, they are studying in the Agricultural College and Research institute, Eachangkottai, Thanjavur, Tamilnadu. The selected subjects were divided into two equal groups of fifteen subjects each, namely Complex with SAQ training group and control group. The selected subjects had undergone the Complex with SAQ training for twelve weeks, with three days per week in alternate days. The Complex with SAQ training group trained for three sets per exercise per session at 60 to 80% with a progressive increase in load with the number of weeks. Cardio respiratory endurance and resting pulse rate were selected as criterion variables and they were tested by using cooper's 12 minutes run and walk test and radial pulse rate respectively. ANCOVA was used to find out the significant difference if any between the groups. The results of the study showed that there was a significant difference on Cardio respiratory endurance and resting pulse rate between complex training with SAQ training group and control group.*

**KEYWORDS:** *Complex Training, SAQ Training, Cardio Respiratory Endurance, Resting Pulse Rate, Volleyball Players.*

## 1. INTRODUCTION

Physical fitness and physiological components is one of the parts of the absolute wellness of the person, which additionally incorporates common, social and enthusiastic wellness. It is one of the fundamental prerequisites of life comprehensively talking it implies the capacity to do every day assignments without under weakness. Strength perseverance is needed in all games development, regardless of whether quick or moderate, developments must be done under lesser or higher states of weakness. Readiness is a blend of a few athletic attributes like strength, response time and speed of development, force and co-appointment. Its presentation becomes fundamental in such developments as avoiding, crisscross running, halting and beginning and evolving body positions rapidly. Complex is a technique for creating touchy force, a significant segment of the athletic presentation as Complex developments are acted in a wide range of sports. In volleyball, it tends to be played all the more capably when players have the force that consolidates with strength and speed to foster hazardous force for partaking in different games exercises. SAQ aims to coach the necessary techniques to provide the basic skill to complete the movements. The Complex with SAQ activities further develop essentially in creating actual wellness factors of volleyball players.

## 2. METHODOLOGY

The rationale of the study was to find out the impacts of complex with SAQ training on cardio respiratory endurance and resting pulse rate among volleyball players. To achieve this purpose, thirty men volleyball players were selected as subjects, their aged between 21 to 25 years, they are studying in the Agricultural College and Research institute, Eachangkottai, Thanjavur, Tamilnadu. The selected subjects were divided into two equal groups of fifteen subjects each, namely Complex with SAQ training group and control group. The selected subjects had undergone the Complex with SAQ training for twelve weeks, with three days per week in alternate days. The Complex with SAQ training group trained for three sets per exercise per session at 60 to 80% with a progressive increase in load with the number of weeks. Cardio respiratory endurance and resting pulse rate were selected as criterion variables and they were tested by using cooper's 12 minutes run and walk test and radial pulse rate respectively. ANCOVA was used to find out the significant difference if any between the groups.

## 3. SELECTION OF VARIABLES AND TESTS

The subjects were tested on the following variables.

**Table-1**

Name of Variables	Test	Unit
Cardio Respiratory Endurance	Cooper's 12 Minutes Run and Walk Test	Meters
Resting Pulse Rate	Radial Pulse Rate	Beats/Minute

#### 4. EXPERIMENTAL DESIGN AND STATISTICAL PROCEDURE

The experimental design used for the present investigation was random group design involving 30 subjects for training effect. Analysis of Covariance (ANCOVA) was

used as a statistical technique to determine the significant difference, if any, existing between pre test post test and adjusted post test data on selected dependent variables separately and presented in Table-2.

**Table-2**

F-ratio for Pre-Test and Post-Test among The Complex with SAQ Training group and control group on Cardio Respiratory Endurance and Resting Pulse Rate.

Variables	Test	Complex with SAQ Training Group	Control Group	Source of Variance	SS	df	Mean Square	„F“ Ratio
Cardio Respiratory Endurance	Pre test	2267	2267.35	Between Within	0.53 132.92	1 28	0.53 4.75	0.11
	Post test	2282	2268	Between Within	218.70 126.67	1 28	218.70 4.53	38.34*
	Adjusted post test	2282.46	2268.25	Between Within	233.78 56.08	1 27	233.78 2.07	102.55*
Resting Pulse Rate	Pre test	77.23	77.20	Between Within	0.03 1.25	1 28	0.03 0.04	0.74
	Post test	71.20	77.10	Between Within	0.38 0.49	1 28	0.38 0.01	20.04*
	Adjusted post test	71.27	77.14	Between Within	0.33 0.44	1 27	0.33 0.01	18.30*

Level of Significance 0.05\*

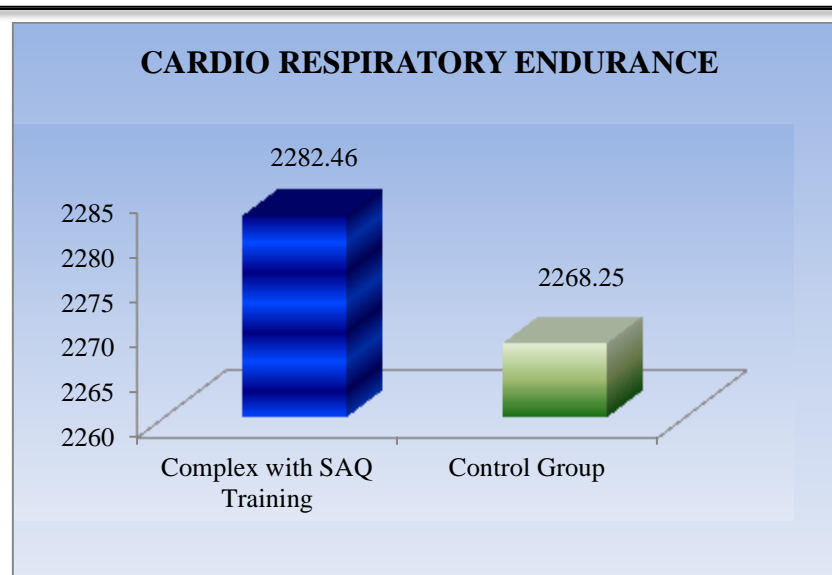
#### 4.1 RESULTS OF CARDIO RESPIRATORY ENDURANCE (in meters)

An examination of table-2 indicated that the pre test means Complex with SAQ Training and control groups were 2267 and 2267.35 and. The F-ratio for the pre-test was 0.11 and the table F-ratio was 3.75 Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 1 and 28.

The post-test means of the Complex with SAQ Training and control groups were 2282, and 2268. The acquired F-ratio

for the post-test was 38.26 and the table F-ratio was 3.75. Therefore the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 1 and 28.

The adjusted post-test means of the Complex with SAQ Training and control groups were 2282.46 and 2268.25. The acquired F-ratio for the adjusted post-test means was 102.55 and the table F-ratio was 3.78. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 1 and 27.



**Fig-1: Adjusted mean values of cardio respiratory endurance of complex with SAQ training group and control group**

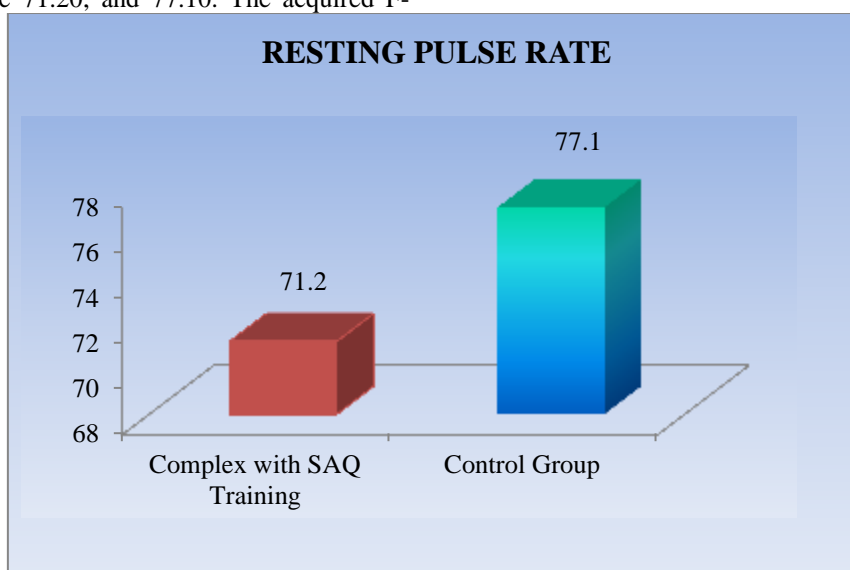
#### 4.2 RESULTS OF RESTING PULSE RATE (Beats per Minute)

An examination of table-2 indicated that the pre test means Complex with SAQ Training and control groups were 77.23 and 77.20 and. The F-ratio for the pre-test was 0.74 and the table F-ratio was 3.75 Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 1 and 28.

The post-test means of the Complex with SAQ Training and control groups were 71.20, and 77.10. The acquired F-

ratio for the post-test was 20.04 and the table F-ratio was 3.75. Therefore the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 1 and 28.

The adjusted post-test means of the Complex with SAQ Training and control groups were 71.27 and 77.14. The acquired F-ratio for the adjusted post-test means was 18.30 and the table F-ratio was 3.78. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 1 and 27.



**Fig-2: Adjusted mean values of resting pulse rate of complex with SAQ training group and control group**

#### 5. DISCUSSION ON FINDINGS

The result of the study indicates that the experimental group namely complex with SAQ training group had shown significant improvement in cardio respiratory endurance and resting pulse rate among volleyball players. The control group volleyball players had not shown significant changes in any of the cardio respiratory endurance and resting pulse rate. The analysis of the study indicates that the complex with SAQ

training group (had shown significant level difference in cardio respiratory endurance and resting pulse rate among volleyball players.

It is conditional from the literature and from the result of the present study. That systematically designed training develops dependent variables are very importance quilts for better performance in almost all sports and games. Hence it is concluded that systematically designed training



may be programmes of all the discipline in order to achieve maximum given due recognition and implemented properly in the training performance. These findings are in accordance with the findings of **Abdul Halik (2021), Krishnamoorthi (2021), Senthil Kumaran (2021), Mavis (2013) and Gayen (2013)**.

## 6. CONCLUSIONS

From the analysis of the data, the following conclusions were drawn.

1. The volleyball players of control group had not shown significant changes in any of the cardio respiratory endurance and resting pulse rate.
2. The complex with SAQ training group shown significant improvement in cardio respiratory endurance and resting pulse rate among volleyball players.
3. There volleyball players who had undergone eight weeks of complex with SAQ training showed significant improvement in cardio respiratory endurance and resting pulse rate when compared with control group.

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