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## Effect of complex training on anxiety and resting pulse rate among inter collegiate women players

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### Abstract

The purpose of the study was to find out the effect of complex training on anxiety and resting pulse rate among intercollegiate women players. Thirty inter collegiate women players (N = 30) from Sri Sarada college of physical education for women were randomly selected as subjects. Their age ranged from 18 to 25 years. The selected subjects were divided into two equal groups (N-15) Group-I was subjected with complex training 3days/per week in the evening session for eight weeks. Group- II acted as control group who did not participate in any special training and underwent their regular activities and academic curriculum. Anxiety was measure by using the Taylor's manifest anxiety scale and resting pulse rate was measured by counting the pulse rate per minute. The collected data were analyzed by applying analysis of covariance (ANCOVA). The level of significance was fixed at 0.05. The result of the study indicated that complex and contrast training considerably increased anxiety and resting pulse rate when compared to control group.

**Keywords:** complex training, anxiety, resting pulse rate

### Introduction

Complex training is a workout comprising of a resistance exercise followed by a matched plyometric exercises. E.g. squats followed by squat jumps. Bench press followed by plyometric press up it is postulated that the resistance exercise will have a performance enhancing effect on the plyometric activity resulting in increased power output, increased performance outcome and enhanced efficiency of the (SSC) behavior.

Plyometric exercises are based on the understanding that a concentric (shortening) muscular contraction in much stronger and it immediately follows an eccentric (lengthening) contraction of the same muscle. The advantage of plyometric is that comprises jumping and throwing movement that involves a stretch-shortening-cycle (SSC). Plyometric training exaggerates the stretch-shortening-cycle using activities for jumping, hopping and bounding. A plyometric contraction involves first a rapid than an explosive muscle shortening movement (contract phase), which enables the muscles to work together in doing the particular motion.

Resistance training sometimes called weight training or strength training. It is a specialized method of conditioning designed to increase muscle strength, muscle endurance and muscle power, strengthening one's muscles through resistance training offers many benefits and makes it easier to do one's daily routine. This training can be done in several ways with resistance machines, free-weights (dumbbells and barbells), rubber tubing, or your own body weight as in doing push-ups, squats or abdominal crunches.

Complex training involves performing sets of weight training exercises before sets of related plyometric exercises. E.g. three sets of 10 half squats, before three sets of 10 jump squats. Such combinations of sets are known as 'complexes'.

Anxiety is subjective feelings that are unpleasant. It may be defined as an easiness caused as a result of fear of misfortune or danger. It is also used to describe the combination of intensity of behavior and direction of effort or emotion, according to frost (1993) anxiety is uneasiness and feeling of foreboding often found when a person is about to embark on hazardous venture and is accompanied by a strong desire to excel.

Pulse rate is nothing but heartbeat and the number of time heartbeats per minute. Pulse rate is wave of increased pressure, which is felt at the arteries when blood is pumped out of the heart.

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## Materials and Methods

For the purpose of the study thirty (N=30) intercollegiate women players from Sri Sarada college of physical education were randomly selected as subjects. Their age ranged from 18 to 25 years. The selected subjects were equally (N=15) divided into two equal groups, in which group- I underwent complex training 3days/per week in the evening session for eight weeks. Group- II acted as control group who did not participate in any special training and underwent their regular activities along with academic curriculum. The dependent variables selected for this study was anxiety and resting pulse rate. Anxiety was measure by using the Taylor's manifest anxiety scale and resting pulse rate was measured by counting

the pulse rate per minute. The collected data were analyzed by applying analysis of covariance (ANCOVA). The level of significance was fixed at 0.05. The result of the study indicated that complex and contrast training considerably increased anxiety and resting pulse rate when compared to control group.

## Analysis of data

The experimental design of this study was random group design. Adjusted posttest means of experimental and control groups were tested for significance by applying ANCOVA. In all the cases to test the significance 0.05 level of confidence was used.

**Table 1:** Ancova between complex training group and control group on anxiety by

Anxiety	Complex Training Group	Control Group	SOV	Sum of Squares	Df	Mean square	F
Pre-Test Mean	16.53	16.93	BG	3.378	1	1.689	1.887
			WG	37.60	28	0.895	
Post-Test Mean	14.50	17.30	BG	93.64	1	46.822	26.963*
			WG	72.93	28	1.737	
Adj. Post- Test Mean	14.551	16.883	BG	54.599	1	27.299	47.416*
			WG	23.605	27	0.576	

\*Significant at .05 level of Confidence. (The table value required for significance at .05 level of confidence with df 1 and 28 and 27 were 4.20 and 4.21 respectively)

The table-1 shows that the pre-test mean values on anxiety of complex training group, and control group are 16.53 & 16.93 respectively. The obtained "F" ratio of 1.887 for pre test scores is lesser than the table value of 4.20 for df 1 and 21 required for significant at .05 level of confidence. The post-test mean values on anxiety of complex training group, control group are 14.50, 17.30 & 26.57 respectively. The obtained "F" ratio of 26.963\* for post test scores is greater than the table value of 4.20 for df 1 and 4.21 required for significant at .05 level of confidence. The adjusted post-test

mean values on anxiety of complex training group, and control group are 14.55 & 16.88, respectively. The obtained "F" ratio of 47.416\* for adjusted posttest scores is greater than the table value of 4.20 for df 1 and 4.21 required for significant at .05 level of confidence.

The result of the study indicated that there was a significant decrease on anxiety of intercollegiate women players due to eight weeks of complex training when compared to control group.

**Table 2:** Ancova between complex training group and control group on resting pulse rate

Resting Pulse Rate	Complex Training Group	Control Group	SOV	Sum of Squares	Df	Mean Square	F
Pre-Test Mean	83.40	83.00	BG	0.59	1	0.59	0.231
			WG	31.64	28	1.13	
Post-Test Mean	81.53	83.53	BG	17.66	1	17.66	3.479*
			WG	63.04	28	0.96	
Adj. Post –Test Mean	81.36	83.70	BG	55.28	1	19.40	8.323*
			WG	5.4	27	0.20	

\*significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 1 and 28 and 27 were 4.20 and 4.21 respectively)

The table-2 shows that the pre-test mean values on aresting pulse rate of complex training group, and control group are 83.40,83.00. Respectively. The obtained "F" ratio of 0.231 for pre test scores is lesser than the table value of 4.20 for df 1 and 21 required for significant at .05 level of confidence. The post-test means values on resting pulse rate of complex training group, control group are 81.53 & 83.53 respectively. The obtained "F" ratio of 3.479\* for post test scores is greater than the table value of 4.20 for df 1 and 4.21 required for significant at .05 level of confidence. The adjusted post-test mean values on resting pulse rate of complex training group and control group are 81.36 & 83.70 respectively. The obtained "F" ratio of 8.323\* for adjusted posttest scores is greater than the table value of 4.20 for df 1 and 4.21 required for significant at .05 level of confidence.

The result of the study indicated that there was a significant difference on resting pulse rate of intercollegiate women players due to eight weeks of complex training when

compared to control group

## Discussion on findings

The results of the study indicated that there was a significant improvement on anxiety and resting pulse rate due to complex training for eight weeks when compared to control group among intercollegiate women players. The following researchers supporting the present study there was a significant decrease in anxiety after different intensities of resistance training. Mevhibe akandere and alitekin found that there was a significant decrease in anxiety after the physical exercise. (*focht and koltyn*).

## Conclusion

It was concluded from the analysis of the data that the eight weeks of complex training was significantly decreased in the anxiety and resting pulse rate of intercollegiate women players.

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