



## **EFFECT OF SPECIFIC STRENGTH TRAINING ON SELECTED PHYSIOLOGICAL PARAMETERS AMONG COLLEGE MEN NETBALL PLAYERS**

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### **Abstract:**

The purpose of the study was designed to examine the effect of specific strength training on resting pulse rate and breath holding time among college men Netball players. For the purpose of the study, thirty college men Netball players from the affiliated colleges under Krishna University, Krishna District, Andhra Pradesh State, India were selected as subjects. They were divided into two equal groups. Each group consisted of fifteen subjects. Group I underwent specific strength training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables, namely resting pulse rate and breath holding time were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely resting pulse rate and breath holding time by using radial pulse and holding the breath for time at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered appropriate. The results of the study showed that there was a significant difference between specific strength training group and control group on resting pulse rate and breath holding time. And also it was found that there was a significant improvement on selected criterion variables such as resting pulse rate and breath holding time due to specific strength training.

**Key Words:** Specific Strength Training, Resting Pulse Rate, Breath Holding Time, College Men Netball Players

### **Introduction:**

Specific strength training can have various effects on resting pulse rate and breath-holding time, depending on several factors including the type of strength training, intensity, duration, individual fitness level, and genetic predisposition. Engaging in specific strength training exercises can lead to improvements in cardiovascular health and efficiency. As your heart becomes stronger, it can pump blood more efficiently, which may result in a lower resting pulse rate over time. However, during the actual strength training session, your heart rate will likely increase due to the physical exertion. It's common for heart rate to elevate during exercise as the body works harder to meet the demands of increased activity. This increase in heart rate during training sessions is normal and expected.

Strength training can enhance respiratory muscle strength and efficiency. As you engage in strength training exercises, particularly those involving the core and chest muscles, your respiratory muscles also get a workout. Over time, this can lead to improved respiratory muscle strength and endurance, potentially resulting in an increase in breath-holding time. Some specific strength training exercises may also incorporate breath control techniques, such as breath holding during certain phases of the movement. This can also contribute to an increase in breath-holding time as you become more adept at controlling your breath. It's important to note that individual responses to strength training can vary widely. Factors such as age, overall health, training history, and genetic factors can influence how your body responds to specific types of training. Additionally, it's essential to ensure proper form and technique during strength training exercises to minimize the risk of injury and maximize effectiveness.

### **Methodology:**

The purpose of the study was designed to examine the effect of specific strength training on resting pulse rate and breath holding time among college men Netball players. For the purpose of the study, thirty college men Netball players from the affiliated colleges under Krishna University, Krishna District, Andhra Pradesh State, India were selected as subjects. They were divided into two equal groups. Each group consisted of fifteen subjects. Group I underwent specific strength training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables, namely resting pulse rate and breath holding time were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely resting pulse rate and breath holding time by using radial pulse and holding the breath for time at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant

difference if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered appropriate.

**Analysis of the Data:**

**Resting Pulse Rate:**

The analysis of covariance on resting pulse rate of the pre and post test scores of specific strength training group and control group have been analyzed and presented in table 1.

Table 1: Analysis of Covariance of the Data on Resting Pulse Rate of Pre and Post Tests Scores of Specific Strength Training and Control Groups

Test	Specific Strength Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	72.53	72.07	Between	1.63	1	1.63	1.85
S.D.	0.72	1.14	Within	24.67	28	0.88	
Post Test							
Mean	69.60	71.40	Between	24.30	1	24.30	11.83*
S.D.	1.06	0.95	Within	57.50	28	2.05	
Adjusted Post Test							
Mean	69.44	71.56	Between	31.55	1	31.55	39.15*
			Within	21.76	27	0.81	

\* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 1 shows that the adjusted post-test means of specific strength training group and control group are 69.44 and 71.56 respectively. The obtained "F" ratio of 39.15 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on resting pulse rate.

The results of the study indicated that there was a significant difference between the adjusted post-test means of specific strength training group and control group on resting pulse rate.

**Breath Holding Time:**

The analysis of covariance on breath holding time of the pre and post test scores of specific strength training group and control group have been analyzed and presented in table 2.

Table 2: Analysis of Covariance of the Data on Breath Holding Time of Pre and Post Tests Scores of Specific Strength Training and Control Groups

Test	Specific Strength Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	43.40	42.93	Between	1.63	1	1.63	1.25
S.D.	1.20	0.96	Within	36.53	28	1.30	
Post Test							
Mean	48.13	43.20	Between	182.53	1	182.53	24.49*
S.D.	1.00	0.91	Within	208.67	28	7.45	
Adjusted Post Test							
Mean	48.04	43.29	Between	161.94	1	161.94	213.72*
			Within	20.46	27	0.76	

\* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 2 shows that the adjusted post-test means of specific strength training group and control group are 48.04 and 43.29 respectively. The obtained "F" ratio of 213.72 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on breath holding time.

The results of the study indicated that there was a significant difference between the adjusted post-test means of specific strength training group and control group on breath holding time.

**Conclusions:**

- There was a significant difference between specific strength training group and control group on resting pulse rate and breath holding time.
- And also it was found that there was a significant change on selected criterion variables such as resting pulse rate and breath holding time due to specific strength training.

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