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EFFICACY OF SPECIFIC TRAINING PROGRAMMEON FORCED VITAL CAPACITY AND FORCED EXPIRATORY VOLUME OF ROPE MALLAKHAMBPLAYERS OF MUMBAI

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Abstract- The ***purpose of the study*** was to determine the effect of Specific Training Programme on Forced Vital Capacity and Forced Expiratory Volume of Rope Mallakhamb Players Aged 12 To 18 Years. The review of literature does not indicate any studies to evaluate the utility of Specific Training for the development of Forced Vital Capacity and Forced Expiratory Volumesof Rope Mallakhamb Players. ***Methodology and Design*****:** A sample of Sixty (n=60) Rope Mallakhamb players age ranged from 12-18 years was identified as subjects from MallakahambSangh Andheri area of Greater Mumbai. Further they were randomly divided into two equal groups i.e. experimental and control group with equal number of subjects. Experimental group is Specific Training Group (n=30) and Control group is Non Specific Training Group (n=30). The design of the study was Non-equivalent Control Group Design. The experimental subjects, along with day to day activity underwent through Specific Training programme for six days in a week except holiday. ***Materials and Method*****:** At the baseline and after training intervention the Dependent variable i.e. Forced Vital Capacity and Forced Expiratory Volume test data were used for assessment. ***Statistical Analysis Used*****:** Data were analyzed by using One Way ANCOVA test. ***Results*****:** The results revealed that effect of Specific training programme helped to enhanceForced Vital Capacity and Forced Expiratory Volume of Rope Mallakhamb Players aged 12 to 18 years.

Keywords: Rope Mallakhamb, Specific Training, Forced Vital Capacity, Forced Expiratory Volume.

I. INTRODUCTION

The art like Mallakhamb was one of the art which passing it from one generation to another generation in India. Rope Mallakhamb is the closest to the legendary Indian rope tricks which requires alertness, focus and balance. Rope mallakhamb is a competitive game which required good physiological condition and fitness to perform the set of elements against the gravitational force gracefully. Good physiological Condition helps the player to enhance the performance on rope.**(Gaikwad & Satam, 2006)**

Physiological fitness can be defined as fitness relating to the physical aspects of the human body. Physiological health means biological processes that are influenced by physical exercise and activism in the prevention of disease. As the components physical fitness increase, physiological health also increases. Physiological Variables contains the Forced Vital Capacity and Forced Expiratory Volume of lungs.

Forced expiratory volume (FEV) measures how much air a person can exhale during a forced breath. The amount of air exhaled may be measured during the first (FEV1), second (FEV2), and/or third seconds (FEV3) of the forced breath.

Forced vital capacity (FVC) is the total amount of air exhaled during the FEV test.Forced expiratory volume and forced vital capacity are lung function tests that are measured during spirometry. Forced expiratory volume is the most important measurement of lung function. **(Staff, 2019)**

To improve Forced Vital Capacity and Forced Expiratory Volume the specific training programme had been developed. Specific Training is a Superset Weight Trainingprogrammewith combination of Station, Set and Circuit Training. The standard form of superset training involves combining two moves, where player do a set of the first exercise which includes Agonist muscle and then go straight into a set of the second exercise which includes Antagonist muscles. Combination of Station, Set and Circuit Training is effective method for maximum and explosive strength Many Athletes also use a training system called super setting**. (Earle, 2000)**.

Researcher has found that there were more studies has done in various sports by giving them Specific training to improve their physiological condition, fitness level and performance. But Rope Mallakhamb is

untouchable in this. Hence, the researcher has thought it is appropriate to undertake the present study. The purpose of the study was to study the Efficacy of Specific Training Programme on Forced Vital Capacity and Forced Expiratory Volumeof Rope Mallakhamb Players Aged 12 To 18 Years.

Objectives of the Study:

- To compare the adjusted Mean Scores of Forced Vital Capacity of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Vital Capacity as Covariate.

- To compare the adjusted Mean Scores of Forced Expiratory Volume of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Expiratory Volume as Covariate.

Hypothesis of the Study:

The hypothesis sought to be tested are as follows:

H01: There is no significant difference in the adjusted Mean Scores of Forced Vital Capacity of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Vital Capacity as Covariate.

H02: There is no significant difference in the adjusted Mean Scores of Forced Expiratory Volume of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Expiratory Volumes Covariate.

II. METHODOLOGY

Design Of The Study

For this experimental study Non-Equivalent Control Group Design was used. The subjects in the experiment was divided into two groups one experimental group and one control group; each group consisting of 30 subjects. Experimental group was given Specific Training Programme for the period of 12 weeks.

Selection Of Sample

Sixty (n=60) Rope Mallakhamb players age ranged from 12-18 years was identified as subjects from Mallakahamb Sangh Andheri area of Greater Mumbai.

Experimental group (Specific Training Group) : n=30

Control group (Non Specific Training Group) : n=30

Research Design: (*Non-equivalent groups design*)

The design of the study was '*Non-equivalent Control Group Design*'. The design of the experiment had been planned in three phase's viz., Phase – I: Pre-test, Phase – II: Training or Treatment, and Phase – III: Post-test. The subjects in the experiment were divided into two groups one Specific Training Group i.e. (Experimental Group) and one Non Specific Training Group i.e. (Control Group); each group consisted of 30 subjects.Specific Training Group i.e. (Experimental Group) was given Specific Training programme for the period of 12 weeks, 6 days in a week i.e Monday to Saturday except on holiday, in the evening session for 1 hour.

Selected variables:

A. Dependent Variables

1. Forced Vital Capacity
2. Forced Expiratory Volume

B. Independent Variables

Specific Training programme is Superset training which is combination of Station training, Set Training and Circuite Training.

Tools/ Instruments

The subjects in both the groups, the Specific Training Group (Experimental Group) and one Non-Specific Training Group (Controlgroup) were assessed with the help of selected standard tests before (Pre-test) and after (Post-test) the treatment or training programme. The criterion measures chosen to collect data to test items of Physiological Variables.

Sr. No.	Dependent Variable	Test	Criterion Measures
1.	Forced Vital Capacity (FVC) and	Air Smart Spirometer	Liter
2.	Forced Expiratory Volume (FEV1)		

Treatment
The following Specific training has given for 12 weeks training.

A. Upper Body Training

Chest Press	Tricep overhead Extension
Latpull Down	Wrist Curl
Dumbbells Fly	Dumbbell Hamer Curl
Bent Over Row	Triceps Kick Back
Shoulder side raise with Dumbbells	Seated Dumbbell Presses
Front Raise with Dumbbells	Barbell Shrugs
Dumbbell Bicep Curl	Abdominal Crunches

B. Lower Body Training

Leg Curl	Hyper Extension
Leg Extension	Calf Raise
Squats	Cardio
Lunges	

Statistics:
Since, there were two groups for this experimental study viz. Specific Training Group and Control group, wherein the researcher has decided to compare the adjusted mean scores of Forced Vital Capacity and Forced Expiratory Volume by taking Pre and Post Test of Specific Training Group and Control Group in order to see the efficacy of experimental treatment. One way ANCOVA was appropriately used for the data analysis.

III. Result and Discussion:

1. Treatment wise comparison of adjusted Mean Scores of Forced Vital Capacity by taking Pre-Forced Vital Capacity as Covariate

The first objective was to compare the adjusted Mean Scores of Forced Vital Capacity of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Vital Capacity as Covariate. The data were analyzed with the help of One Way ANCOVA and results are given in Table 1.

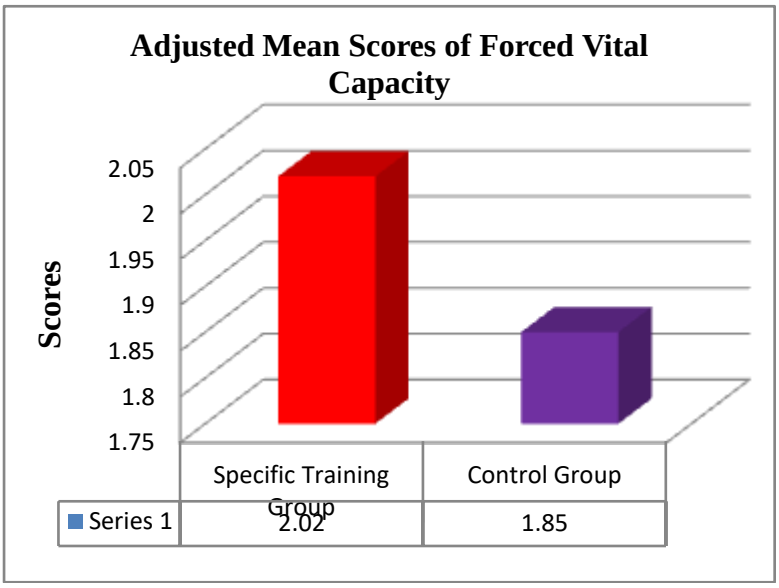
TABLE 1: Summary of One Way ANCOVA of Forced Vital Capacity by taking Pre-Forced Vital Capacity as Covariate

Source of Variance	Df	SSy.x	MSSy.x	Fy.x	Remark
Group	1	0.44	0.44	153.51	p<0.01
Error	57	0.17	0.003		
Total	59				

From Table 1 it can be seen that the adjusted F-value is 153.51 which is significant at 0.01 level with df=1/57 when Pre-Forced Vital Capacity was taken as covariate. It shows that the adjusted Mean Scores of Forced Vital Capacity of Rope Mallakhamb Players of Specific Training Group and Control Group differ significantly when Pre-Forced Vital Capacity was taken as Covariate. Thus, the Null Hypothesis that there is no significant

difference in the adjusted Mean Scores of Forced Vital Capacity of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Vital Capacity as Covariate is rejected. Further the adjusted mean score of Forced Vital Capacity of Specific Training Group is 2.02 which is significantly higher than that of Control Group where adjusted mean score of Forced Vital Capacity is 1.85. It may, therefore, be said that Specific Training Group was found to be effective in improving Forced Vital Capacity of Rope Mallakhamb Players than Control Group where Pre-Forced Vital Capacity was taken as covariate.

FIGURE 1: Treatment wise Comparison of Adjusted Mean Scores of Forced Vital Capacity



2. Treatment wise comparison of adjusted Mean Scores of Forced Expiratory Volume by taking Pre-Forced Expiratory Volume as Covariate

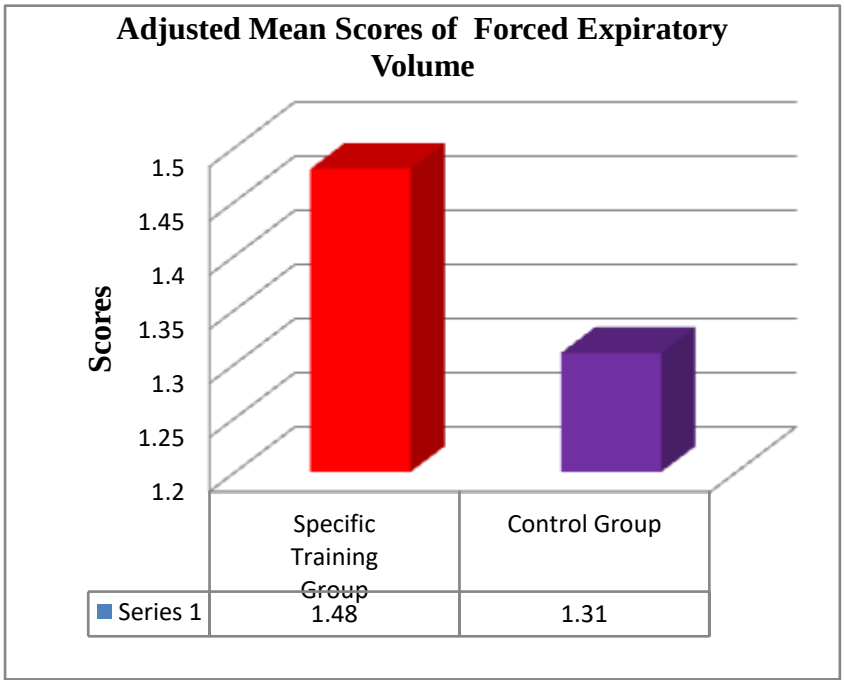
The Second objective was to compare the adjusted Mean Scores of Forced Expiratory Volume of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Expiratory Volume as Covariate. The data were analyzed with the help of One Way ANCOVA and results are given in Table 2.

TABLE 2: Summary of One Way ANCOVA of Forced Expiratory Volume by taking Pre-Forced Expiratory Volume as Covariate

Source of Variance	Df	SSy.x	MSSy.x	Fy.x	Remark
Group	1	0.44	0.44	152.81	p<0.01
Error	57	0.17	0.003		
Total	59				

From Table 2 it can be seen that the adjusted F-value is 152.81 which is significant at 0.01 level with df=1/57 when Pre-Forced Expiratory Volume was taken as covariate. It shows that the adjusted Mean Scores of Forced Expiratory Volume of Rope Mallakhamb Players of Specific Training Group and Control Group differ significantly when Pre-Forced Expiratory Volume was taken as Covariate. Thus, the Null Hypothesis that there is no significant difference in the adjusted Mean Scores of Forced Expiratory Volume of Rope Mallakhamb Players of Specific Training Group and Control Group by taking Pre-Forced Expiratory Volume as Covariate is rejected. Further the adjusted mean score of Forced Expiratory Volume of Specific Training Group is 1.48 which is significantly higher than that of Control Group where adjusted mean score of Forced Expiratory Volume is 1.31. It may, therefore, be said that Specific Training Group was found to be effective in improving Forced Expiratory Volume of Rope Mallakhamb Players than Control Group where Pre-Forced Expiratory Volume was taken as covariate.

FIGURE 2: Treatment wise Comparison of Adjusted Mean Scores of Forced Expiratory Volume



IV. CONCLUSION

The above result helps to conclude that the Specific Training was found useful to enhance the Forced Vital Capacity and Forced Expiratory Volume of Rope Mallakhamb Players aged 12 to 18 years.

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