

**Effect of Aerobic Exercises on Reaction Time of Kho Kho Players of
Social Welfare Residential Degree Colleges for Women in Telangana State**

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Abstract:

The Purpose of the Study is to find out Effect of Aerobic Exercises on Reaction Time of Kho Kho Players of social welfare Residential degree Colleges for women in Telangana State between the age group of 17 to 22 Years. The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=45) were randomly assigned to three equal groups of Fifteen college women Kho-Kho players in each. The groups were assigned as experimental group I – (step aerobic exercises), Experimental Group II (floor aerobic exercises) and control group respectively. Pre tests were conducted for all the 45 subjects on selected reaction time Test. After the experimental period of twelve weeks post-test were conducted and the scores were recorded with Reaction time Test. It was concluded that 12 weeks step aerobics training significantly improved discriminatory reaction time of women kho-kho players. Key Words, Aerobic Exercises, Reaction time, Kho Kho Players

INTRODUCTION:

Sports training aims at improving sports performance through physical, physiological, psychological, social intellectual and moral aspects thus contributing to development of all-round personality of the sports person.

Aerobic exercise refers to exercise that involves or improve oxygen consumption by the body. Aerobic means with oxygen and refers to the use of oxygen in the body's metabolic or energy generating process. Benefits of aerobic exercise include the ability to utilize more oxygen during exercise, a lower heart rate at rest, the reduction of less lactic acid, greater endurance.

Kho-Kho is a traditional Indian sport that dates back to ancient India. It is the second-most popular traditional tag game in the Indian subcontinent after kabaddi. Kho-Kho is played on a rectangular court with a central lane connecting two poles which are at either end of the court. During the game, nine players from the chasing team (attacking team) are on the field, with eight of them sitting (crouched) in the central lane, while three runners from the defending team run around the court and try to avoid being touched.

“Reaction time is one of the factors of great significance in competition especially in team games. Different forms of reaction time may dominate one's ability to perform according to situation demanding quick response and immediate action.” (Hebb, 1958)

Thomas Gallagher and Persia (1981) conducted a study on the “reaction time and anticipation time effect of development. The investigation used 15 male and 15 female subjects at each of five age levels, 7,9,11,13 and 20 years. Each subject was given 40 trials for both reaction time and anticipation time. The results indicated that the age increased reaction time decreased with male having more rapid reaction time than females. The younger age group differed from the older groups on anticipation performance reaction time was significantly correlated with anticipation time. Apparently neither young males nor young females have a good motor plan in memory to control anticipation time performance. Beginning about 10-11 years of age better motor plans are developed in children's memory system. Leading to less reliance on rapid reaction time for good anticipation time performance and thus the correlation between reaction time and anticipation time performance is not present

Purpose of Research:

The Purpose of the Study is to find out Effect of Aerobic Exercises on Reaction Time of Kho Kho Players of social welfare Residential degree Colleges for women in Telangana State between the age group of 17 to 22 Years

Methodology:

. The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=45) were randomly assigned to three equal groups of Fifteen college women Kho-Kho players in each. The groups were assigned as experimental group I – (step aerobic exercises), Experimental Group II (floor aerobic exercises) and control group respectively. Pre tests were conducted for all the 45 subjects on selected reaction time Test. After the experimental period of twelve weeks post-test were conducted and the scores were recorded with Reaction Time Test. The subjects were given respective training to the subjects five days a week Monday to Wednesday except and Fridays from 6.30 to 7.30 a.m. The difference between initial and final scores on reaction time and movement time was considered as the effect of respective experimental treatments. To test statistical significance of the differences in means of selected variables, ANCOVA was used. In all cases 0.05 level was fixed to test the hypothesis.

Simple Reaction Time Test

The subject was asked to keep his hand between the switch without touching the hand key. Necessary instructions were given to the subjects and they were asked to respond to the visual stimuli(green). When he observed the green light, he was asked to press the hand key with his preferred hand to switch off the light.

Few trials were given to the subjects to understand the test. The investigator give the signal 'ready' to the subject and alter an interval of one or two seconds, the investigator pressed the key which made the green light to burn. Soon after seeing the light, the subject was asked to press the hand key to make the light go off. The counter would run from the time that light was made on till the time that the light was made on till the time that the light switched off, which measured the reaction of the subject to 1/100th of the second directly. Ten trials were given and the average was calculated to measure the simple reaction time of the player and that was recorded.

Results and Discussion:

:The obtained data on the pre test scores on variable simple reaction time, prior to aerobics training and step aerobics training among women Kho-Kho players were subjected statistical analysis using 't' test is presented in Table I.

Table I : 't' RATIO COMPARISONS ON SIMPLE REACTION TIME FOR PRE-TEST SCORES

Group	Mean	MD	SD	SDM	t'
Aerobic	0.256	0.010	0.034	0.009	1.201
Step aerobics	0.246		0.034		
Group	Mean	MD	SD	SDM	t'
Aerobic	0.256	0.009	0.034	0.008	1.112
Control	0.247		0.027		
Group	Mean	MD	SD	SDM	t'
Step aerobics	0.246	-0.002	0.034	0.008	-0.219
Control	0.247		0.027		

Not Significant.

The initial scores compared between treatment groups and control groups proved that there was no significant differences on means of simple reaction time as the obtained ‘t’ values were less than the required ‘t’ value. The obtained data (post test scores) on the variable simple reaction time to find out the effect of aerobics training and step aerobics training among women Kho-Kho players were subjected statistical analysis using ‘t’ test and presented in Table II.

Table II:

‘t’ RATIO COMPARISONS ON SIMPLE REACTION TIME FOR FINAL TEST SCORES

Group	Mean	MD	SD	SDM	t'
Aerobic	0.229		0.037		
Step aerobic	0.218	0.011	0.032	0.009	1.223
Group	Mean	MD	SD	SDM	t'
Aerobic	0.229		0.037		
Control	0.262	-0.033	0.085	0.017	-1.919*
Group	Mean	MD	SD	SDM	t'
Step aerobic	0.218		0.032		
Control	0.262	-0.043	0.085	0.017	-2.627*

* Significant

The post experimental period scores on variable, simple reaction time was presented in Table II. As can be seen there was no significance difference between aerobics training and step aerobics training on simple reaction time. However, comparing with the control group, both training effects contributed for the beneficially altering simple reaction time among women Kho-Kho players.

The pre-test and post mean comparison on variable simple reaction time, among the three groups were presented in Table III.

Table III:

‘t’ RATIO COMPARISONS ON SIMPLE REACTION TIME TO DETERMINE TRAINING EFFECTS

DUE TO AEROBIC TRAINING				
Test	Mean	MD	SD	t'
Pre	0.256	-0.027	0.021	-7.021*
Post	0.229			
DUE TO STEP AEROBIC TRAINING				
Pre	0.246	-0.027	0.009	-16.53*
Post	0.218			
ON CONTROL GROUP				
Pre	0.247	0.014	0.072	1.090
Post	0.262			

*** Significant**

As can be seen from the results presented in Table III, both the treatment groups, namely, aerobics training group and step aerobics training group significantly altered simple reaction time after the experimental periods, while, it was found that the changes in control group was not significant.

Conclusion:

It was concluded that 12 weeks floor aerobic and step aerobics training significantly improved choice reaction time of women kho-kho players compared to control group. However, comparison between the treatment groups proved that there was no significant difference between the experimental treatments on choice reaction time. It was concluded that 12 weeks step aerobics training significantly improved discriminatory reaction time of women kho-kho players

Recommendations:

The results of this study proved that floor aerobics training and step aerobics training significantly altered selected variable's simple reaction time, choice reaction time, discriminatory reaction time and movement time of degree college women kho-kho players. Efforts may be taken to include floor aerobics and step aerobics training in the training schedule of the players, which would improve performances of the kho-kho players.

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