



ISSN: 2456-0057

IJPNPE 2021; 6(1): 432-434

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Received: 27-01-2021

Accepted: 10-03-2021

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Effect of fartlek training and core muscle training on selected physical fitness and physiological variables among men kho-kho players

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Abstract

The purpose of this study was to find out the “Effect of fartlek training and core muscle training on physical fitness and physiological variables among college level men kho-kho players”. In this chapter research design, selection of subject, selection of variables, test administration procedures collection of data and statistical technique are described in detailed. The purpose of this study was to investigate the “Effect of Fartlek Training and Core Muscle Training on Selected Physical Fitness and Physiological Variables among Men Kho-Kho Players”. To achieve this purpose, thirty men kho-kho players were selected from Mother Teresa College of Physical Education, Mettusalai, Pudukkottai, Tamil Nadu. They were selected as subjects at randomly. The ages of the subjects were ranged from 18 to 25 years only. The subjects selected were medically examined by a qualified Doctor/ physician and certified that they were selected training programme. The subjects selected were randomly assigned into three groups of ten each such as two experimental groups and a control group. The group I underwent Fartlek training with core muscle training, group II underwent Fartlek training for the duration of six weeks with three days per week in addition to the regular schedule of the college circulated group III acted as a control group and they were asked to refrain from any special training except their leisure time pursuit as college students. A written consent was obtained from the subjects.

Keywords: Muscle training, Kho-Kho Players, physical fitness, entertaining, skilful physical activity

Introduction

A sport is an organized, competitive, entertaining and skilful physical activity requiring commitment, strategy and fair play in which a winner can be defined by objective means. It is governed by a set of rules or customs. In sports, the key factors are the physical capabilities and skills of the competitor when determining the outcome (winning or losing). Physical activity involves the movement of people, animals and/or a variety of objects such as balls and machines or equipment. In contrast, games such as card games and board games, though these could be called mind sports and some are recognized as Olympic sports, require primarily mental skills and only mental-physical involvement. Non-competitive activities, for example as jogging or playing catch are usually classified as forms of recreation.

Resting heart rate

The resting pulse rate was calculated by the number of heartbeats in one minute when a player was in resting condition. “Ten minutes before taking the heart rate, the subjects were asked to lie down and rest themselves. The radial pulse was taken by placing three fingers on the radial artery on the thumb side of the wrist”. The heartbeat was counted for 30 seconds and multiplied by two for the heart rate per minute.

VO₂ Max (Harvard step test)

The client steps up onto, and back down from the step at a rate of 30 completed steps per minute (one second up, one second down) for 5 minutes or until exhaustion. Exhaustion is defined as when the client cannot maintain the stepping rate for 15 continuous seconds.

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The client immediately sits down upon completion of the test, and the total number of their heartbeats is counted from 1 to 1½ minutes after finishing and from 2 to 2½ minutes after finishing and finally from 3 to 3½ minutes after finishing. The client’s heartbeats are counted through feeling the client’s pulse at their wrist.

Methodology

The purpose of this study was to investigate the “Effect of Fartlek Training and Core Muscle Training on Selected Physical Fitness and Physiological Variables among men Kho-Kho Players”. To achieve this purpose, thirty men kho-kho players were selected from Mother Teresa College of Physical Education, Mettusalai, Pudukkottai, Tamil Nadu. They were selected as subjects randomly. The ages of the subjects were ranged from 18 to 25 years only. The subjects selected were medically examined by a qualified Doctor/physician and certified that they were selected training programme. The subjects selected were randomly assigned

into three groups of ten each such as two experimental groups and a control group. The group I underwent Fartlek training with core muscle training, group II underwent Fartlek training for the duration of six weeks with three days per week in addition to the regular schedule of the college circulated group III acted as a control group and they were asked to refrain from any special training except their leisure time pursuit as college students. A written consent was obtained from the subjects.

Result

To test the significance of “F” values a level of significance 0.05 level was chosen for the required table value for the degrees of freedom. The data collected before and after the training period on strength, core muscle strength, muscular endurance, cardiovascular endurance, respiratory rate, resting heart rate, VO₂ Max, and breath-holding time for the experimental group have been analyzed.

Table 1: Analysis of covariance on pre and post-test and adjusted post-test on different groups of resting heart rate (Scores in Numbers)

Test	Exp. Grp-1	Exp. Grp-2	Control Group	Source of Variance	Sum of Square	DF	Means Square	F-Ratio
Pre Test	39.00	38.70	38.80	Between	0.46	2	0.23	0.21
				Within	29.7	27	1.10	
Post Test	35.50	35.70	36.40	Between	41.86	2	20.93	11.89*
				Within	74.50	27	1.75	
Adjusted d Post Test	35.50	35.69	38.09	Between	41.77	2	20.88	11.43*

*Significant at 0.05 level of confidence

The table values required for significance at 0.05 level of confidence for 2 and 27 and 2 and 26 are 3.35 and 3.37 respectively

Table-1 shows the analyzed data on resting heart rate. The pre-test means of resting heart rate were 39.00 for Fartlek

training with the core muscle training group, 38.70 for the core muscle training group and 38.80 for the control group. The obtained “F” ratio of 0.21 was lesser than the table F-ratio 3.35. Hence the pre-test was not significant at 0.05 level of confidence for the degrees of freedom 2 and 27.

Table 2: Scheffe’s post hoc test mean differences in resting heart rate among three groups

Experimental Group-1	Experimental Group-2	Control Group	Mean Difference	Confidential Interval Value
35.5	35.69	--	0.19	1.56
35.5	--	38.09	2.59*	
--	35.69	38.09	2.40*	

* Significant at 0.05 level of confidence.

Table 2 shows the Scheffe’s post-hoc test results. The ordered adjusted final mean difference for resting heart rate of fartlek training with core muscle training group and core muscle training group and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between fartlek training with core muscle training group and core muscle training group were 0.19 and it was found to be lesser than confidential interval value of 0.95, hence fartlek training with core muscle training

group and core muscle training group were equal in improving the cardiovascular endurance. The fartlek training with core muscle training group and control group, core muscle training group and control group were 2.59 and 2.40 respectively and it was seen to be greater than the confidential interval value of 1.35. Hence all the training groups were better than the control group.

The mean values of resting heart rate are shown graphically in Table 3.

Table 3: Analysis of covariance on pre and post-test and adjusted post-test on different groups of Vo₂ max (Scores in Numbers)

Test	Exp. Group-1	Exp. Group-2	Ctrl Group	Source of Variance	Sum of Square	Degrees of freedom	Means Square	F-ratio
Pre Test	31.00	30.10	30.30	Between	4.46	2	2.23	1.02
				Within	59	27	2.18	
Post Test	38.60	35.40	31.00	Between	291.20	2	145.60	46.35*
				Within	84.80	27	3.14	
Adjusted Post Test	38.20	35.67	31.12	Between	250.56	2	125.28	61.94*
				Within	52.58	26	2.02	

*Significant at 0.05 level of confidence

The table values required for significance at 0.05 level of confidence for 2 and 27 and 2 and 26 are 3.35 and 3.37 respectively.

Table-3 shows the analyzed data on Vo₂ max. The pre-test means of Vo₂ max were 31.00 for Fartlek training with the core muscle training group, 30.10 for the core muscle training

group and 30.30 for control group. The obtained “F” ratio of 1.02 was lesser than the table F-ratio 3.35.

Hence the pre-test was not significant at 0.05 level of confidence for the degrees of freedom 2 and 27.

Table 4: Scheffe’s post hoc test mean differences on Vo₂ max among three groups

Experimental Group-1	Experimental Group-2	Control Group	Mean Difference	Confidential Interval Value
38.20	35.67	--	2.53*	1.65
38.20	--	31.12	7.08*	
--	35.67	31.12	4.55*	

* Significant at 0.05 level of confidence.

Table 4 shows the Scheffe’s post-hoc test results. The ordered adjusted final mean difference for Vo₂ max of fartlek training with core muscle training group and core muscle training group and control group were tested for significance at 0.05 level of confidence against confidential interval value.

The mean differences between fartlek training with core muscle training group and core muscle training group were 2.53, the fartlek training with core muscle training group and control group, core muscle training group and control group were 7.08 and 4.55 respectively and it was seen to be greater than the confidential interval value of 0.13. Hence all the training groups were better than the control group and fartlek training with the core muscle training group is better than the core muscle strength training group. The mean values of Vo₂ max are shown graphically in Table 4.

Conclusion

Based on the results of the present study the following conclusions have been men

1. Results on testing the differences in pre-test mean between control group and experimental groups, no difference was found on variables used in the study namely strength, core muscle strength, muscular endurance, cardiovascular endurance, respiratory rate, resting heart rate, vo₂ max, breath holding time.
2. On testing the post-test means between control group and experimental groups, a significant mean difference was found in the variables used in the study.
3. The significant results derived from testing the adjusted post-test means confirms the efficacy of training program used in the study positively.

Recommendation

In light of the experience gained from the present study, a few suggestions are made for future study

1. The same study may be conducted on college-level female students.
2. The same study may be conducted on school-level female students.
3. The same study may be conducted on school-level Male students.
4. The same study may be conducted on other games like football.

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