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Familiarizing sports in a recreative way: reassessing effectiveness on physiological parameter among physically constraint high school boys

Manjunatha NV and Dr. PC Krishnaswamy

Abstract

The purpose the current study was to find out the playing sports in a recreative way: effectiveness on physiological parameter among physically constraint high school boys. The study was 75 physically constraint high school boys were selected randomly from private high school of Bangalore north district, Karnataka, India. The age of the subjects ranged between 13 to 17 years. (Physically constraint school boys are who did not involve in any physical activities and not participate in any intramural sports and inter school sports and games competition during school physical education programme). The selected were divided into five groups (N=15) Experimental group Kabaddi, Kho-Kho, Volleyball, Football and Control groups for the training period of 12 weeks. The physiological parameter such as such resting heart rate post-test ('F' value is 20.594 and 'p' value is 0.000) and breath holding capacity post-test ('F' value is 5.653 and 'p' value is 0.001) The analysis of covariance (ANOVA) Duncan's post hoc-test was applied and the level of significant was set at the 0.05 level of confidence. The result indicated that experimental groups (Kabaddi, Kho-Kho, Volleyball, Football and Control group) were significantly improved compared to pre-test to post-test. It was indicated that the recreative way of playing Kabaddi, Kho-Kho, Volleyball and Football groups had significantly improved the resting heart rate and breath holding capacity respectively. The study suggested that results would provide a scientific base and guidance to the Physical Educationists, Coaches and design the training program for Physically Constraint High School Boys.

Keywords: Physiological, physically constraint, resting heart rate and breath holding capacity

Introduction

Today's Children are tomorrow's leaders and citizens of the Nation. Children are the greatest resources in the world. Investing in development of healthy children is an investment for the future of a Nation. Physical Education and Recreational activities are national building activities. Recreational games are essential for any individual familiarizing themselves to achieve sustainable, health-related physical fitness and psycho-physiological developments, have healthy life for all the age groups. Modern day students follow unhealthy lifestyle habits and use electronic gadget, mass media, cell phones, video games, the internet, along with unhealthy eating and inactivity that lead to becoming obese and developing hypokinetic diseases. Our children also suffer from the hampering influence in the school and college life with too much of intellectual work, the stress, and strains of test examination etc.

Sports have a valuable positive effect in the life of the individual quite apart from the physical benefit school sports are useful not only because of their influence in developing beautiful and healthy bodies but because they also train the charter and evolve a higher standard of life generally. Nearly always they teach us to respect our bodies. Competitive sports and athletics indicate the strenuous competition which we will have to undergo when we face the realities of life.

Statement of the problem

The main purpose of this study was find out familiarizing sports in a recreative way: reassessing effectiveness on physiological parameter among physically constraint high school boys.

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Objective of the study

The objective of this study was to determine the effectiveness of health related physical fitness parameters such as resting heart rate and breath holding capacity among physically constraint high school boys.

Statement of Hypothesis

It was hypothesized that 12 weeks of playing sports in a recreative way of Kabaddi, kh-kho, volleyball, football training will have significant improvement on resting heart rate and breath holding capacity among physically constraint high school boys.

Methodology

The subjects (n=75) were randomly assigned to five equal groups of 15 each physically constraint high school boys in their age between 13-17 years. The groups were assigned as

experimental groups I, II, III, IV and control group. per-test post-test (initial) scores were conducted for all the subjects on health related physical fitness, such as, resting heart rate and breath holding capacity done for a period of 12 weeks. The post-test scores showed good improved compared in per-test data. The analysis of covariance (ANOVA) was used to determine the significance of the means for each variable. Duncan’s multiple range test (DMRT) post hoc-test was made using the treatment given the best in all the groups ‘F’ value was significant. In all cases 0.05 level and 0.01 level was fixed to test the hypothesis.

Results and Discussion

Analysis of the treatment effectiveness on kabaddi, kho-kho, volleyball, football and control groups selected criterion parameters were presented in Table-1 to Table-4

Table 1: Analysis mean, standard deviation, ‘t’ value of resting heart rate on between Experimental and control group.

| Group -N | Subjects | Mean ± SD | | Mean ± SD df | ‘t’ value | ‘p’ value |
|------------|----------|------------|------------|--------------|---------------------|-----------|
| | | Pre -test | Post-test | | | |
| Kabaddi | 15 | 79.4±8.7 | 116.7±8.7 | 37.3±12.05 | 11.998* | 0.001 |
| Kho-Kho | 15 | 93.4±12.6 | 115.8±9.5 | 22.4±14.3 | 6.047* | 0.001 |
| Volleyball | 15 | 92.4±11.2 | 111.1±6.3 | 1.4±11.2 | 0.482 ^{NS} | 0.637 |
| Football | 15 | 103.1±15.7 | 117.1±13.9 | 14.0±7.9 | 6.862* | 0.001 |
| Control | 15 | 120.8±15.8 | 119.6±10.4 | 1.2±16.9 | 0.274 ^{NS} | 0.788 |

^{NS}Not Significant; * Significant at 0.05 level (df=28 is 2.04)

Table-1 showed the mean, standard deviation, ‘t’ value ‘p’ value is 79.4±8.7, 93.4±12.6, 92.4±11.2, 103.1±15.7, and 120.8±15.8 for pre and 116.7±8.7, 115.8±9.5, 111.1±6.3, 117.1±13.9, and 119.6±10.4 for post respectively. Kabaddi (t-

value is 11.998 and p-value is 0.001) kho-kho (t-value is 6.047 and p-value is 0.001) and football groups (t-value is 6.862 and p-value is 0.001) resting heart rate (Psychological Variable) are significant at 0.05 level of significance.

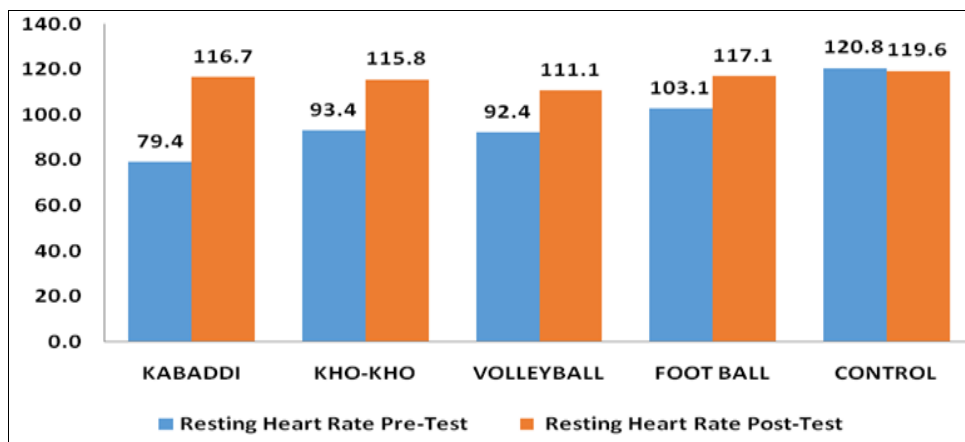


Fig 1: Bar chart for resting heart rate per and post-test for between the groups.

Since significant ‘t’ ratio was obtained, the results were further subjected to one-way ANOVA analysis using and results presented in Table-2.

Table 1: one-way ANOVA significant difference of resting heart rate between groups

| Sources of Variance | Sum of Squares | Degree of Freedom | Mean Square | ‘F’ Value | Sig. |
|---------------------|----------------|-------------------|-------------|-----------|-------|
| Between the Groups | 14203.280 | 4 | 3550.820 | 20.594 | 0.000 |
| Within the Groups | 12069.467 | 70 | 172.421 | | |
| Total | 26272.747 | 74 | | | |

*Significant at 0.05 level with (df 4 =74 is 2.50) ‘F’ value is 20.590.

mean sum of squares between the groups 14203.280 within the groups 12069.467, the total 26272.747, ‘F’ value is 20.594 and mean square between the groups 3550.820 within the groups 172.421 (df 4=74) required for significant at 0.05

level. Duncan’s post hoc-test resting heart rate Kabaddi group is alpha 0.05. 117.1667.

Table 3: Analysis mean, standard deviation, ‘t’ value of breath holding capacity on between Experimental and control group.

| Group-N | Subjects | Mean ± SD | | Mean ± SD df | ‘t’ value | ‘p’ value |
|------------|----------|-----------|-----------|--------------|---------------------|-----------|
| | | Pre -test | Post-test | | | |
| Kabaddi | 15 | 43.9±15.4 | 49.7±15.0 | 5.8±8.8 | 2.538* | 0.024 |
| Kho-Kho | 15 | 27.9±10.7 | 34.3±15.3 | 6.4±8.3 | 2.960* | 0.010 |
| Volleyball | 15 | 31.5±13.6 | 34.0±14.5 | 2.4±3.2 | 2.961* | 0.010 |
| Football | 15 | 35.1±13.5 | 39.3±14.5 | 4.2±9.7 | 1.676 ^{NS} | 0.116 |
| Control | 15 | 23.8±12.4 | 25.2±13.4 | 1.3±2.7 | 1.883 ^{NS} | 0.081 |

^{NS}Not Significant; * Significant at 0.05 level (df=28 is 2.04)

Table-1 showed the mean, standard deviation, ‘t’ value ‘p’ value is 43.9±15.4, 27.9±10.7, 31.5±13.6, 35.1±13.5, and 23.8±12.4 for pre and 49.7±15.0, 34.3±15.3, 34.0±14.5, 39.3±14.5, and 25.2±13.4 for post respectively. Kabaddi (t-

value is 2.538 and p-value is 0.024) kho-kho (t-value is 2.960 and p-value is 0.010) and volleyball (t-value is 2.961 and p-value is 0.010) breath holding capacity (Psychological Variable) significant at 0.05 level of significance.

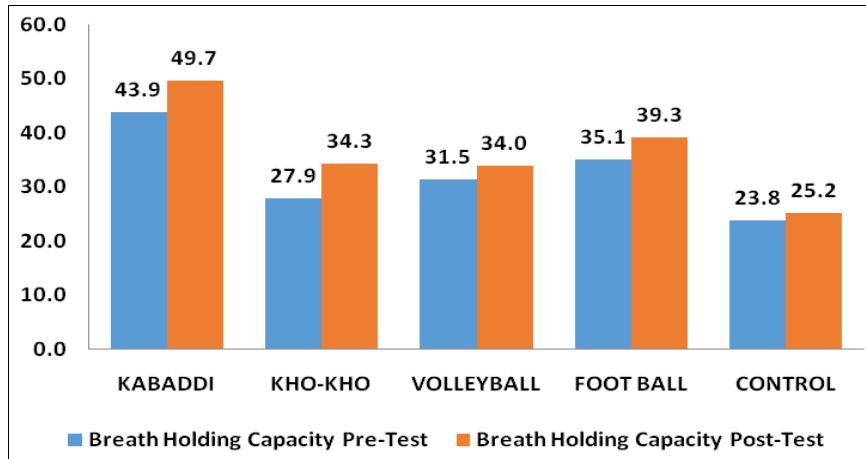


Fig 2: Bar chart for breath holding capacity per and post-test for between the groups

Since significant ‘t’ ratio was obtained, the results were further subjected to one-way ANOVA analysis using and results presented in Table-2

Table 3: One-way ANOVA significant difference of breath holding capacity on between groups.

| Sources of Variance | Sum of Squares | Degree of Freedom | Mean Square | ‘F’ Value | Sig. |
|---------------------|----------------|-------------------|-------------|-----------|-------|
| Between the Groups | 4821.147 | 4 | 1205.287 | 5.653 | 0.001 |
| Within the Groups | 4923.600 | 70 | 213.194 | | |
| Total | 19744.747 | 74 | | | |

*Significant at 0.05 level with (df 4 and 74 is 2.50) ‘F’ value is 5.653.

Mean sum of squares between the groups 4821.147 and within the groups 4923.600 and the total. 19744.747 and mean square between the groups, 1205.287 and within the groups 213.194 ‘F’ value is 5.653 with (df 4=74) required for significant at 0.05 level. Physically constraint high school boys.

Duncan’s Multiple range test (DMRT) post hoc-test breath holding capacity Kabaddi group is alpha at 0.05. 49.7333.

Conclusion

It was concluded that playing sports in a recreation way like kabaddi, kho-kho, volleyball, and football training groups were significantly improved physiological parameter such as resting heart rate and breath holding capacity of physically constraint high school boys. The current study would provide a scientific base and more benefit for future generation who did not involve for participate regular physical activates during physical education programme and keep students interested and motivated to continue practicing and applying them to play the games in the recreational way. The present study would provide a scientists and physical educationists to the coaches, sports trainers, physical education teachers to design physical education curriculum for the health related

physical fitness and physiological health awareness persons. This study suggested that regular practice of playing sports in a recreation way like kabaddi, kho-kho, volleyball and football it can improve physiological such a resting heart rate and breath holding capacity.

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