



EFFECT OF AEROBIC EXERCISES ON FLEXIBILITY AMONG KABADDI PLAYERS

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Abstract:

The purpose of the study was to investigate the effect of aerobic exercises on flexibility among kabaddi players. For the present study the 30 male kabaddi players from Mannaniya College of Arts and Science, Thiruvananthapuram, Kerala were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group 'A' underwent aerobic exercises only, group 'B' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying paired 't' test. The level of significance was set at 0.05. It was observed that the aerobic exercises have significantly improved the flexibility of kabaddi players.

Key Words: Aerobic Exercises, Kabaddi Players.

Introduction:

Aerobics is a form of physical activity that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness, flexibility, muscular strength, and cardiovascular fitness. It is usually performed to music and may be practiced in a group although it can be done solo and without musical equipment. With the goal of preventing illness and promoting physical fitness practitioners perform various routines comprising a number of different dance like exercise. Aerobics is a vigorous physical activity that can provide an inexpensive and practical workout for most people. Aerobic fitness helps to promote the cardio- respiratory system from disease and it promotes physical, mental, emotional and spiritual development. Aerobic program can be started at any age and the intensity of the program can also be suited to meet the larger needs of the individual.

Aerobic exercise is physical exercise of relatively low intensity that depends primarily on the aerobic energy generating process. Aerobic literally refers to the use of oxygen to adequately energy demands during exercise via aerobic metabolism. Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time. The intensity should be between 60 and 85% of maximum heart rate. Aerobic exercise means the exercise where all body parts/muscles are supplied with enough oxygen with the increased heart rate. Aerobic exercises include brisk walking, jogging, swimming, cross country, skiing, hopping, and skipping. By doing aerobics, the whole body is used and major muscle groups including legs, trunk and arms get involved. In aerobic exercise the heart rate increases substantially, but never reaches its maximum level. The heart is always able to deliver sufficient oxygen-rich blood to muscles so that they can derive energy from fat and glycogen aerobically. Aerobic exercises builds stamina for sports and it also is the most important form of exercise for health, since it increases the efficiency of heart, circulation and muscles. Aerobic exercise is the keystone of fitness by doing aerobics it increases the capillary network in the body. Aerobics is a good way to decrease our percentage of body fat and to attain the other metabolic benefits of fitness. Aerobics is also a very good way to develop musculo skeletal fitness while building strength, flexibility and coordination (Asai & Rane, 2011).

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Reviews:

Osman et al. (2017) determined the effects of 12 weeks aerobic exercise and weight-lifting plus aerobic exercise on blood pressure, blood serum lipids and lipoproteins of sedentary females. Thirty seven sedentary females (Aerobic group mean age: 44.66 years, Weight-Lifting + Aerobic group mean age: 40.80 years) participated in this study. Before initiate the exercise their blood samples, peripheral measurements and thickness of skinfolds were taken. The subjects participated in aerobics group (n = 21) and weight-lifting plus aerobics group (n = 16) 3 times in a week through one hour. The intensity of exercise was increased gradually and their heart rates were raised up to 130-140 rates per-minute and of the tension. Two way ANOVA was used

in this study. There were no significant difference between two different type of exercise groups ($p>0.05$) first group (aerobic); HDL-C (High Density Lipoprotein-Cholesterol) 18.12%, second group (weight-lifting plus aerobic) %28.23, there were a significant increase among them ($p<0.01$). Total cholesterol decrease 13.97% in group of aerobic exercise and it decreases 7.13% in group of weight-lifting plus aerobic. Triglyceride decreases 31.74% in group of aerobic exercise; it decreases 19.53% in group of weight-lifting plus aerobic exercise. Level of LDL-C was decreased 28.11% in group of aerobic exercise, 21.46% in group of weight-lifting plus aerobic. When we consider exercise types, the only flats of type is on triglyceride and APO B, ($p<0.05$), there were effects of exercise duration is on HDL-C, LDL-C AND Total cholesterol ($p<0.01$). There were effects of type and duration of exercise on TC, TG, HDL-C, LDL-C, APO A1, and APO B ($P<0.01$). In this study, regular aerobic and weight-lifting plus aerobic exercises have been shown to reduce the risk of cardiovascular disease in sedentary women and a significant improvement in systolic and diastolic blood pressures as well as reduction of cholesterol, triglyceride, and of LDL-C. Level of HDL-C was increased in both of exercise groups.

Rajkumar & Savitri (2017) examined the effect of aerobic exercise training on haematological variables among college women's. For the present study 30 college women's from Sri B.M. Patil PU College Bijapur. were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent aerobic exercise training and Group 'B' underwent no training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of aerobic exercise training programme. The level of significance was set at 0.05. The findings of the present study have strongly indicates that aerobic exercise training of eight weeks has significant effect on selected haematological variables i.e., RBC and WBC of college women's. Hence the hypothesis earlier set that aerobic exercise training programme would have been significant effect on selected aerobic exercise training variables in light of the same the hypothesis is accepted. Significant effect of aerobic exercise training was found on RBC and WBC.

Siva Sangari (2017) the aerobic and zumba training is a dance fitness training that incorporates some of the basic principles of interval, resistances, plyometric training to maximize caloric output and improve cardiovascular endurance. Now a days aerobic and zumba becoming a popular mode of exercise especially among women due to its dance steps and mind relaxing catchy music background. This study intend to prove twelve weeks of aerobic and zumba training will shows impact on cardiovascular endurance among middle aged women which was held in step up fitness center. To achieve the purpose of the study thirty subjects were selected and divided into two equal group namely zumba training (ZT) and aerobic training (AT). Their age ranged between (30-40) and subjects were asked to do training for one hour for five days in a row as for the outcome 12-minutes cooper run and walk test was used to measure cardiovascular endurance. ANCOVA was used to find out the significant differences between the groups. The 0.05 level of confidence was fixed as the level of significance, which was considered as an appropriate. The result of the study revealed that there was a significant difference in cardiorespiratory endurance in zumba and aerobic training group.

Subradeepan (2017) investigated the effect of continuous running on endurance of men kabaddi players. To achieve the purpose of this study, thirty men kabaddi players selected from the Department of Physical Education and Sports Sciences, Annamalai University, Tamilnadu, India. The age, height and weight of the subjects ranged from 19 to 21 years, 155 to 169 centimetres and 58 to 68 kilograms respectively. They were divided into two groups; each group consisted of fifteen subjects. Group-I underwent continuous running and group-II acted as control who does not participate in any training programme. The data collected from the two groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). The experimental group had significant improvement on endurance when comparing to the control group.

Yating & Danyan (2017) dyslipidemia is the risk of cardiovascular disease, and their relationship is clear. Lowering serum cholesterol can reduce the risk of coronary heart disease. At present, the main treatment is taking medicine, however, drug treatment has its limitations. Exercise not only has a positive effect on individuals with dyslipidemia, but can also help improve lipids profile. This review is intending to provide information on the effects of exercise training on both traditional lipids, for example, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, triglycerides and new lipids and lipoproteins such as non-high-density lipoprotein cholesterol, and postprandial lipoprotein. The mechanisms of aerobic exercise on lipids and lipoproteins are also briefly described.

Zahoor & Karthikeyan (2017) found out the impact of moderate and high intensity aerobic exercise on selected biomotor performance of college men football players. To achieve purpose of this study, 45 football players were selected from Government Boys Degree College Baramulla, State Jammu and Kashmir, India were selected as subjects at random, the age group of the subjects ranged between 17 to 22 years. The subjects were divided into three equal groups of 15 each. Group-I underwent moderate aerobic intensity training, group-II underwent high aerobic intensity training and group-III acted as control subjects, which didn't participate in any special training apart from their regular activities. The following bio motor variables namely balance and

coordination performance was selected as criterion variables. All the subjects of three groups were tested on selected dependent variables at prior to and immediately after the training programme. The ANCOVA (analysis of co variance) was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance which was considered as an appropriate. The results of the study revealed that there was a significant improvement on selected biomotor variables such as balance and coordination for moderate aerobic intensity training group and high aerobic intensity training group as compared to control group among college men football players.

Ozhan Bavl (2016) investigated the effects of eight weeks of step aerobic exercises on static balance, flexibility and selected basketball skills in young basketball players. A total of 20 basketball players (average age 16.1 ± 0.7 years and average sporting age 4.1 ± 0.7 years) voluntarily joined the study. Participants were randomly divided into two groups (experiment n:10 and control n:10). All participants attended basketball training 3 days per week but the experiment group also had step aerobic dance practice 2 days per week. Before and after the study static balance, flexibility and selected basketball techniques were evaluated. SPSS statistical program used for analysis. Repeated measures Anova was used to compare the pre-test and post-test measurements of the groups. The differences between pre-test and post-test measurements in the two groups were examined with the independent t-test. $P < 0.05$ is considered statistically significant in the interpretation of our results. After eight weeks of training, both two groups' static balance and flexibility performances were significantly changed. But only the experiment group had significant improvement in the basketball skill test. The experiment group was also statistically changed in terms of all parameters compared to the control group. According to the results of this study it is possible to say that to improve basketball skills by improving balance and flexibility performance, eight weeks of step aerobic exercise is a useful training model for young basketball players.

Vivek et al. (2016) myocardial Infarction is the leading cause of global mortality. The prevalence rate is 30 million in India. Researchers have found that step aerobic exercise is more effective than other exercises in reducing body fat & blood pressure. This study was designed to examine the effects of moderate intensity step aerobics on heart rate, blood pressure, triglycerides, High density lipoprotein & Low density lipoprotein on a patient with acute Myocardial Infarction. A 55 years old male diagnosed with acute anterior wall Myocardial Infarction was selected for the study based on risk stratification schema two months post discharge from hospital. The exercise session consisted of a 3 phase exercise program 1) a warm-up (10 min of dance aerobics); 2) aerobic exercise training (20 min of step aerobics); 3) a cool-down (10 min of breathing and flexibility exercises) total 40 minutes duration and included three sessions per week. Exercise intensity was controlled by monitoring targeted heart rate. Measurements of Heart rate, Blood pressure were recorded before, at 5 min & 40 min post intervention. Triglycerides, HDL & LDL levels were measured at baseline and at 8th week post intervention. It shows variations in systolic blood pressure and heart rate at baseline and after 8 weeks. No difference in diastolic blood pressure. Significant difference between high density lipoprotein, low density lipoprotein and triglycerides level was observed at the end of 8 weeks. Our findings showed that step aerobics significantly improved heart rate, systolic Blood Pressure and experienced an increase in HDL. This type of currently 'popularised' low-cost step aerobic exercise has an important role in the prevention and reducing the morbidity of cardiovascular diseases.

Anek et al. (2015) developed an aerobic step combined with resistance training exercise program, and to compare the effects of A) aerobic step exercise training (STE), B) resistance aerobic exercise training (RES), C) a combined aerobic step with resistance exercise training (COM) on the health-related fitness, balance, and biochemical bone markers. Sixty participants were working female volunteers at the age of 35-45. They were divided into 4 groups by simple random sampling method. Fifteen of the participants were in the STE group, 14 in the RES group, 15 in the COM group, and 16 in the control group (CON). The STE, RES and COM exercise training programs were designed to yield the same intensity and achieve the same range of heart rate during each stage of the program. During the training, music was used to set the tempo of the workouts. At the 8th week, it was found that resting heart rate and systolic blood pressure significantly-increased only in the STE and COM groups. After 16 weeks, the experiment results showed the significant improvement in the COM and STE groups of exercise training for β -CrossLaps, PINP NMID Osteocalcin and bone formation (PINP/ β -CrossLaps $\times 0.31$) but not in the RES group. For balance ability, the COM group showed significantly greater change than the RES group after the training intervention ($p < 0.05$). It can thus be concluded that the STE and COM training were effective in improving bone formation (PINP/ β -CrossLaps $\times 0.31$) but not in the RES group. For balance ability, the COM group showed more significant change than the RES group. Therefore, this is not only a good exercise choice for the working-age people but also it can help reduce the risks of osteoporosis and falling in women in particular.

Methodology:

The purpose of the study was to investigate the effect of aerobic exercises on flexibility among kabaddi players. For the present study the 30 male kabaddi players from Mannaniya College of Arts and Science, Thiruvananthapuram, Kerala were selected at random and their age ranged from 18 to 25 years. For the present

study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group ‘A’ underwent aerobic exercises only, group ‘B’ have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying paired ‘t’ test. The level of significance was set at 0.05.

Results:

Table 1: Computation of T-Ratio between the Pre Test and Post Test on Flexibility of Experimental Group

GROUP	MEAN	MD	SD	ΣDM	T-RATIO
Pre Test	35.05	4.72	0.65	0.16	28.10*
Post Test	39.77				

It was observed that the mean value for pre test was 35.05 and post test was 39.77. The mean difference between the pre test and post test was 4.72. The standard deviation was 0.65. The standard error of the different between the means was 0.16. The obtained ‘t’ ratio was 28.10. The table value of ‘t’ ratio was 2.14. The obtained t-ratio was greater than the table value. Hence, the obtained ‘t’ ratio was significant at 0.05 level of confidence.

Figure 1: Bar Diagram Showing the Mean Values of Pre and Post Test on Flexibility of Experimental Group

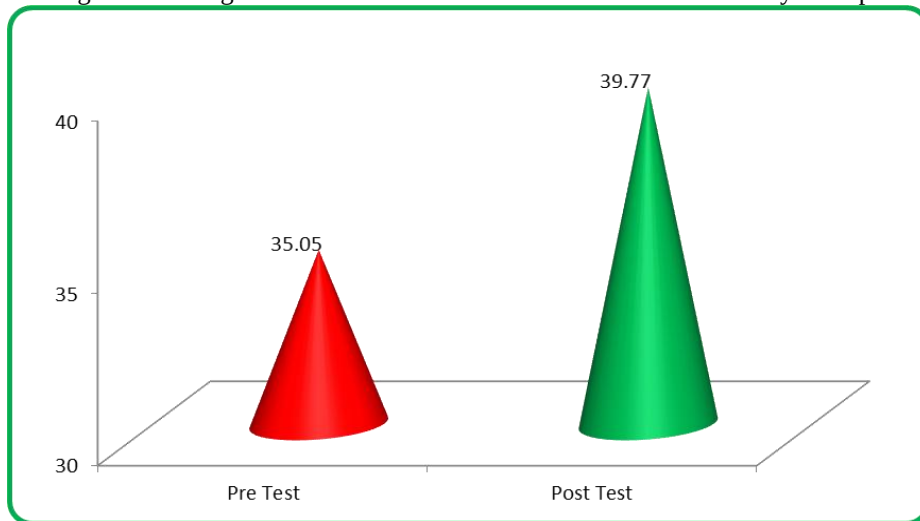
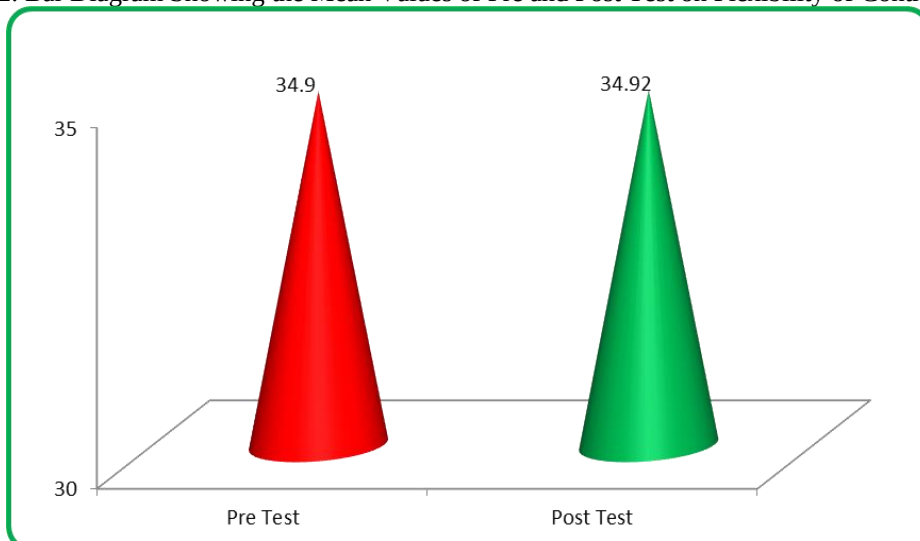


Table 2: Computation of t-Ratio between the Pre Test and Post Test on Flexibility of Control Group

GROUP	MEAN	MD	SD	DM	T-RATIO
Pre Test	34.90	0.02	0.77	0.19	0.10
Post Test	34.92				

It was observed that the mean value for pre test was 34.90 and post test was 34.92. The mean difference between the pre test and post test was 0.02. The standard deviation was 0.77. The standard error of the different between the means was 0.19. The obtained ‘t’ ratio was 0.10. The table value of ‘t’ ratio was 2.14. The obtained t-ratio was lesser than the table value. Hence, the obtained ‘t’ ratio was insignificant at 0.05 level of confidence.

Figure 2: Bar Diagram Showing the Mean Values of Pre and Post Test on Flexibility of Control Group



Conclusion:

It was observed that the aerobic exercises have significantly improved the flexibility of kabaddi players.

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