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EFFECTS OF CIRCUIT TRAINING ON FLEXIBILITY OF KABADDI PLAYERS

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Abstract
R. E. Morgan and G. T. Anderson developed circuit training at the University of Leeds in England in 1953. (Sorani, 1966). The term circuit refers to some cautiously decided physical activities organized consecutively. In the authentic format, 9 to 12 stations comprised the circuit. This quantity may additionally range in keeping with the layout of this system. every player action from one station to the next with little (15 to 30 seconds) or no rest, appearing a 15 to 45, 2nd exercise of 8 to 20 repetitions at every station (the use of the resistance of about 40% to 60% of one-repetition most). The program may be completed with exercising machines, hand-held weights, elastic resistance, calisthenics, or any combination. Kabaddi is a game of pace, power, approach, and, most significantly, lung power. The purpose of present study was to scrutinize the Effects of Circuit Training on Flexibility of Kabaddi Players. For achieving the purpose of the study, data was collected on 40 Kabaddi players from Bangalore University, Bangalore of Karnataka State. The subjects were selected randomly. The subjects were purposively divided into two groups: Experimental Group (N2=10) and Controlled Group (N1=20). The Circuit training programme was carried out alternative days only which may be considered as the delimitation of the study. The following two different type of training program will be given Pus-ups, Back Extensions, Squats Jump, Bicycle Kicks, Sit-ups, Burfee, Forward Lunges and One Leg Squat. To compare the effect of Circuit exercises on Flexibility of Kabaddi players, mean, standard deviation and t-test were employed with the help of statistical package of SPSS. To test the hypothesis the significance level was set at 0.05 percent. It was found that the Circuit training is an effective means for improving the Flexibility and no significant improvement in the case of a control group may be a reflection of inactivity, Circuit Training.

Keywords: Circuit Training, Flexibility and Kabaddi Players.

Introduction

Circuit training is a method of conditioning combining resistance training and intense aerobics exercise (D. Kumar, Dhull, et al., 2023; NARA et al., n.d.; Nara, Kumar, Rathee, & Kumar, 2022). It is intended to be simple to follow and concentrate on building both muscular endurance and energy. A whole list of the recommended sports activities inside the program makes up a "circuit" for exercising (Deepak Kumar, 2023; Deepak & Yadav, 2016; NARA et al., 2022).

Once one circuit is complete, one begins the main exercise a second time for any further circuits in circuit training; physical activity periods have generally been brief, with quick transitions to the next exercise (Deepak et al., 2022; D. Kumar & Dhull, 2023; Nara, Kumar, Rathee, & Phogat, 2022).

A great approach to increasing flexibility, strength, and endurance is circuit training contains 6 to ten electricity sporting activities that might be finished one exercise after some other. Every exercise is accomplished for a precise range of repetitions or for a fixed time earlier than moving directly to the following workout (D. Kumar, Nara, et al., 2023).

The physical games inside each circuit are separated by using a short relaxation period and every circuit is separated using a longer relaxation length.

The full variety of circuits finished in the course of a training session may additionally vary from two to 6 relying on your training age (amateur, intermediate or advanced) and goal. Circuit training is an evolving exercise application that was evolved using R.E. Morgan and G.T. Anderson in 1953 at the college of Leeds in England. Weight training is a topnotch method for boosting stamina and endurance (Dhull, 2017; Kasnia & Dhull, 2022; D. Kumar & Dhull, 2023).

In general, flexibility means the various movements around the joints of the skeletal body. Flexibility is not a normal physical condition but it is defined in every area of the body. If a person is overly flexible, it does not mean that he or she will have good knee position or hip flexion. It is also possible for one shoulder joint to have more flexibility than the opposite. To stay physically healthy, a person needs to be in a position to keep flexible joints and take care of the flexibility of his body. Body flexibility factor allows a person to experience the release of body fat. Selected - Joint movement that requires less activity and you have more heat, intolerance from small changes caused by injury.

The logic is the ability to make a large number of movements within the joints while mimicking work done at natural speeds. Flexibility is the most important relief that helps to move the body parts easily; it takes less time and energy to work. Muscle stiffness reduces tension and provides greater length.

Flexibility refers the range of movement of a joint of a player. It plays an important role in the preparation of athletes by developing range of movements to allow technical development and assisting in the prevention of injury (Hare et.al, 1982). No matter what conditioning regimen one uses, be sure to utilize these basketball stretch exercises to loosen muscles and prevent injury. Stretching is very important for an athlete to be successful; the muscles must be able to go through a wide range of motions. Any good stretching program will improve the range of motion of the joint, players should definitely stretch their major muscles such as quadriceps, hamstring, gastronomies, deltoid etc., and it is equally importance to stretch the li other muscles also. A committed basketball player should stretch a minimum of 10 to 15 minutes per session, two or three times per day, 7 days per week. One should stretch to the point of moderate tension and hold for a minimum of 10 seconds then relax for 3 to 5 seconds and repeat. Spend additional time on muscles that are chronically tight. One should perform two or three sets per stretching exercise (Britten ham, 1996)

Flexibility is significant in performing sports skills and also in physical medicine such as rehabilitation, general health and fitness, example, flexibility exercises are important for relief of dysmenorrheal, general neuromuscular tensions and low back pains (Baechle, 1994). Inadequate flexibility leads to errors in movement execution. Because of its effect on technique it assumes importance for tactical skills. Optimum level elasticity, stretch ability and suppleness of muscles and ligaments help in absorbing the shocks and external forces tending to cause an injury. (Singh, 1991)

Statement of the Problem: The purpose of the study is to find the **“Effects of Circuit Training on Flexibility of Kabaddi Players".**

Hypothesis

On the basis of available literature, concern with supervisor and scholar's own understanding it was hypothesized that there might be significant effect of Circuit Training on Flexibility of inter collegiate Kabaddi Players.

Method and Procedure: Selection of the subject For the purpose of the study 40 Kabaddi players from Bangalore University, Bangalore of Karnataka State was selected randomly.

Collection of Data

Pre-test was taken before the implementation of training programme after 8 week training programme post-test was constructed. There were two groups i.e. experimental and controlled. 20 subjects were participating in each group. The treatment was received by experimental group only.

Selection of Test

Flexibility

Sit and Reach Test

Purpose: The purpose of the test was to measure the Flexibility of the subjects.

Equipment: Sit and Reach Box

Procedure

This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible. Ensure that the hands remain at the same level, not one reaching further forward than the other. After some practice reaches, the subject reaches out and holds that position for at one-two seconds while the distance is recorded. Make sure there are no jerky movements.

Scoring: The measurement was recorded in Centimeter

Training Protocol

The subjects in the experimental group practiced Circuit Training protocol for 8 days in a week except Sunday for eight weeks. The training protocol lasts for approximately 60 minutes including warming up and cooling down exercises. The Circuit Training protocols consist of practice of Circuit Training at various Exercises. The training sessions were scheduled in the morning from 7:00 AM to 8:00 AM and performed at men Bangalore University, Play Ground.

Statistical Analysis

After the collection of relevant data, it was processed and analyzed with descriptive statistics. To compare the subjects mean, standard deviation and t-test was employed with the help of statistical package of SPSS. The significance level was set at 0.05 percent.

Result and Finding

The analysis of dependent's'-test on the data obtained from the experimental and control group for Flexibility is analyzed and presented in Table 1 respectively.

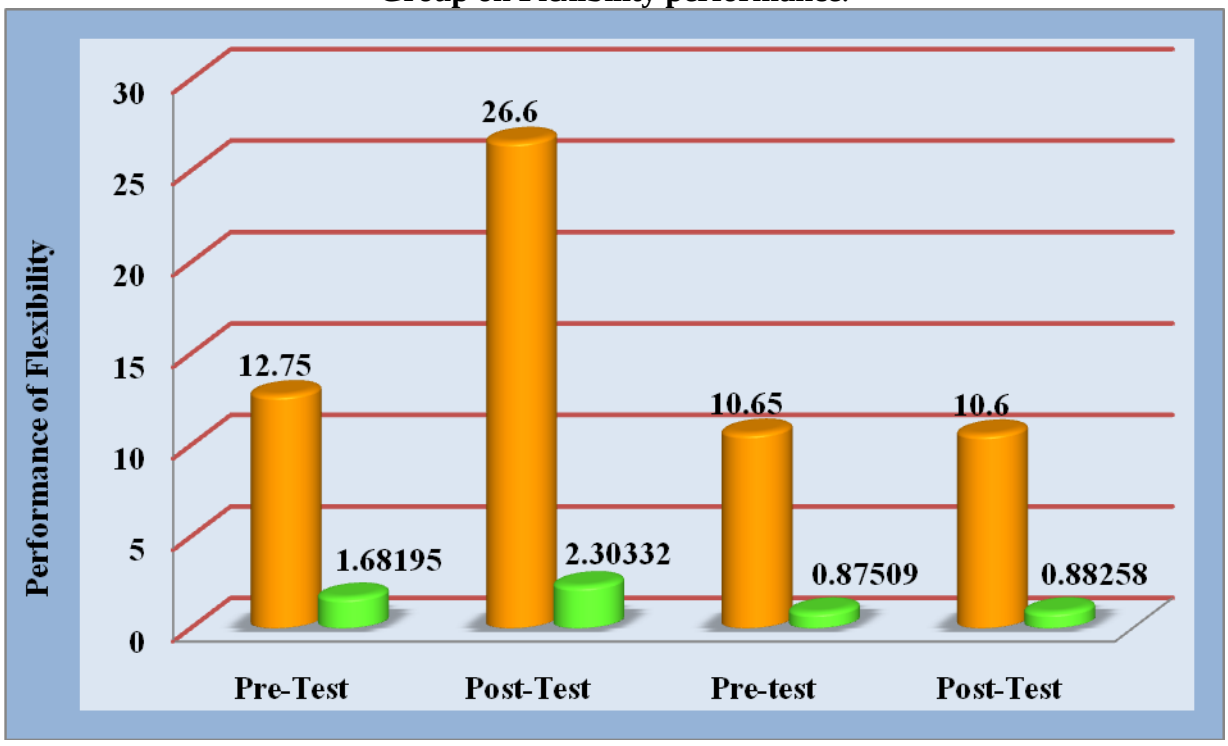
Table1: Pair wise, N, Mean, SD, and t-value of Circuit Training to Experimental and Control group during Pre-test and Post-test on the Flexibility of Kabaddi Players.

Group	N	Test	Mean	SD	t-Value	P-Value
Experimental Group	**20**	**Pre-Test**	12.7500	1.68195	-18.695	**.000***
		Post-Test	26.6000	2.30332		
Control Group	**20**	**Pre-test**	10.6500	.87509	1.000	**.330**
		Post-Test	10.6000	.88258		

From the table 1, it is evident that the obtained t value -18.695 which are significant at 0.05. Level, with df =19. As the value is greater than tabulate t value 2.18.

Table-1 shows the result about the comparison of Flexibility among Circuit Training experimental and control groups obese women. The mean of 20 pre and post-test of Circuit experimental group are 12.7500 and 26.6000 with SD of 1.68195 and 2.30332 respectively. Table1 also reveals that there is the significant difference in the experimental pre-test and post-test observations on the Flexibility of male Kabaddi players as the obtained t-value of the experimental group on Flexibility is 12.7500 and p-value is more than 0.05 level of significance. Whereas in the case of control group Mean and SD on Flexibility are not found to be significant at 0.05 level of significance, as they obtained t-value is control group .330 and p-value is greater than 0.05 level of significance. The pre-test and post-test mean scores of experimental and control groups for Flexibility are graphically presented in figure 1.

Figure No.1.The Pre-test and Post–test for Circuit Training Experimental Group and Control Group on Flexibility performance.



The above figure 1. Indicates that the post test values of Experimental group significantly improved the performance of Flexibility and also the post-test values of Flexibility were more than the pre test values due to eight weeks of Circuit Training. The Control group pre- test and post- test performance of Flexibility shows no improvement.

Discussion

The raw data was computed and analysis of data showed that the Circuit training improved significantly in the Flexibility abilities of experimental group. The reason for better performance in experimental group may be continues participation in training and the load which was experienced by the subjects in the training programme was adequate to produce significant development in the Sit and Reach test. In case of control group it may be due to their non-participation in the training programme. Circuit training is used as the latest methodology for developing the Sit and Reach test abilities. The activities which activate the stretch reflex mechanism affect the body power and come under the category of Circuit training.

Discussion of Hypothesis

On the basis of the above findings, it is obvious that the treatment contributed to the development of Flexibility. Hence, the hypothesis framed for the study is accepted.

Conclusion

Eight weeks of Circuit training has shown significant improvement on Flexibility among Kabaddi players.

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