



ISSN: 2456-0057
IJPNPE 2018; 3(1): 964-966
© 2018 IJPNPE
www.journalofsports.com
Received: 01-12-2017
Accepted: 08-01-2018

Dr. Bupesh S Moorthy
Associate Professor, Department
of Physical Education,
Annamalai University,
Chidambaram, Tamil Nadu,
India

Vikranth CK
Research Scholar, Department of
Physical Education, Annamalai
University, Chidambaram, Tamil
Nadu, India

Correspondence
Dr. Bupesh S Moorthy
Associate Professor, Department
of Physical Education,
Annamalai University,
Chidambaram, Tamil Nadu,
India

Effect of step aerobic training on agility among college men hockey players

Dr. Bupesh S Moorthy and Vikranth CK

Abstract

Aim of the study was designed to determine the effect of step aerobic training on agility among college men hockey players. To attain the purpose, thirty men hockey players were selected from Department of Physical Education, Annamalai University, Chidambaram, Tamil Nadu. Their age ranged from 18 to 21 years. The subjects were assigned into two groups of fifteen each (N=15). Group-I underwent step aerobic training, and Group-II acted as control. The dependent variable selected for this study was agility and it was assessed by Shuttle run test (Seconds). All the subjects were tested prior to and immediately after the training for the selected variable. The pre and post-test scores were statistically examined by the dependent 't' test and analysis of co-variance (ANCOVA). The level of significance was fixed at 0.05 level. The result of the study showed that there was a significant difference in the experimental group namely step aerobic training in enhancing the performance of agility. In the control group the obtained 't' value on agility failed to reach significant level.

Keywords: Agility, step aerobic & hockey players

Introduction

Aerobics is any system of sustained exercise designed to increase the amount of oxygen in the blood and strengthen the heart and lungs.

Aerobics is one of the most popular and widely accepted way of physical exercise which stimulates and strengthens the heart and lungs and hence leads to increased consumption of oxygen. This helps in the stress management and weight control. Aerobic exercises hold enormous benefits such as encouraging cardiovascular and muscular fitness and increase in flexibility. Some of the aerobic exercises benefits includes becoming slim and flexible, physical structure with healthier heart, lowering cholesterol and improving sleep patterns. Aerobic exercises which is also called as fat burning exercises, cardiovascular exercise or cardio work is an exercise based on oxygen which can be maintained up for prolonged period of time. Aerobics being a heart-lung based exercise is considered more beneficial to the people with conditions like heart disease, diabetes, obesity, arthritis, anxiety and premenstrual syndrome.

The American College of Sports Medicine (ACSM) defines aerobic exercise as "any activity that uses large muscle groups which can be maintained continuously, and is rhythmic in nature". It is a type of exercise that overloads the heart and lungs and causes them to work harder than at rest. Cooper, (1985) [3].

Step aerobic was innovated by 'Gin Miller', circa 1989. It is a variation of traditional aerobics with the addition of a specially designed platform upon which one can step on and off during the workout, which would be more intense than walking but less intense than running. The step aerobics was developed by Gin Miller while she was recovering from a knee injury, a trend that took the aerobics industry by storm. This extremely popular style involves stepping up and down from a platform 15 to 30 centimeters (6 to 12 inches) high while performing different step combinations. (Donatelle, 2005) [4].

Agility is the ability to maintain a stable position and change the direction quickly without loss of balance, body control or speed Alricsson *et al.*, (2001) [1].

Agility is the ability to change the direction and also to change the position of the body quickly, effectively, and consciously, and requires the integrity of motion skills by using a

combination of balance, coordination, speed, reflex, strength, endurance, and stamina (Hsiu-Ching *et al.*, (2012) ^[5].

Methodology

The purpose of the study was to determine the effect of step aerobic training on agility among college men hockey players. To assist the study, thirty (30) hockey players from Department of Physical Education, Annamalai University, Chidambaram, Tamil Nadu, India were selected as subjects at random and their age ranged from 18 to 21 years. The subjects were separated into two equal groups. Group-I performed step aerobic training, and group-II acted as control group. Agility was assessed by shuttle run test. The pre and

post- tests data were collected on selected criterion variables prior to and immediately after the training program. The pre and post-test scores were statistically examined by the dependent ‘t’ test and analysis of co-variance (ANCOVA). The level of significance was fixed at 0.05 level.

Analysis of Agility

The descriptive analysis shows mean, percentage of improvement and ‘T’-ratio of the collected data on agility (shuttle run) of pre and post- tests scores of step aerobic training and control groups have been analyzed and presented in Table 1.

Table 1: Descriptive Statistical Analysis on Agility

Variable	Groups	Pre-test Mean	Post-test Mean	MD	% Change	T-ratio
Agility	Step Aerobics Training Group	12.26	11.20	1.06	8.64	6.95*
	Control Group	12.33	12.26	0.07	0.56	1.00

*Significant at 0.05 level. (Table value required for significance at .05 level for ‘t’-test with df 14 is 2.14)

Table 1 shows that the pre-test mean value of step aerobic training and control groups are 12.26 and 12.33 respectively and the post-test means are 11.20 and 12.26 respectively. The obtained dependent t-ratio values between the pre and post-test means of step aerobic training and control groups are 6.95 and 1.00 respectively. The table value required for significant difference with df 14 at 0.05 level is 2.14. Since, the obtained

‘t’ ratio value of step aerobic training group was greater than the table value, it was understood that step aerobic training group had significantly improved agility. However, the control group has not improved significantly. The ‘obtained t’ value is less than the table value, as they were not subjected to any specific training.

Table-2: Analysis of Covariance on Agility of Step Aerobic Training Group and Control Group

Adjusted Post Test Mean		Source of Variance	Sum of Squares	df	MS	f-ratio
Step Aerobic Training Group	Control Group	Between Group	7.52	1	7.52	34.93*
11.23	12.23	Within Group	5.81	27	0.21	

*Significant, table value, Table Value of 1 & 27 is 4.21

Table-2 indicates that the adjusted post-test mean values of 11.23 and 12.23 on agility. The obtained f-ratio of 34.93 for adjusted post-test mean is greater than the table value 4.21 with df 1 and 27 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference existing between the adjusted post-test mean of step aerobic training and control groups on agility. The changes in agility of step aerobic training and control groups are presented in Figure-1.

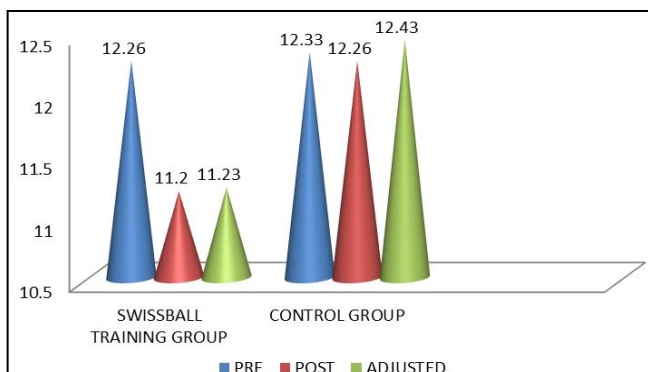


Fig 1: Mean values of pre-test, post-test and adjusted post-test on agility of step aerobic training and control groups

Discussion on Findings

The intent of this study was to investigate the effect of step aerobic training with respect to the orientation on agility. The results of the study proved that the hockey players had significantly improved on agility due to the effect of step

aerobic training when compared to the control group. The finding of the study substantiates the previous study of Sukumar, (2017) ^[8] who conducted a study to find out the effect of plyometric exercises on agility of netball players. Based on the result it was revealed that plyometric exercises improves agility of netball players. Sporis *et al.*, (2010) ^[7] study also is in line with the findings that plyometric training effects on agility (training of acceleration, deceleration and quick change of the direction of movement) on athletes of power performance. Chandrakumar and Ramesh (2015) ^[2] conducted a study to find out the effect of ladder drill and SAQ training on speed and agility among badminton players. Based on the result of their study it was revealed that ladder drill and SAQ training has significantly improved the speed and agility among badminton players. Kumar, (2016) ^[6] conducted a study to find out the effect of land plyometric and sand plyometric training on selected physical and physiological variables among hockey players. Based on the result of their study it was revealed that land plyometric and sand plyometric training has significantly improved speed, agility and cardio respiratory endurance among hockey players.

Conclusions

1. There was significant improvement on agility due to the effect of step aerobic training among college men hockey players.
2. However the control group had not shown any significant improvement on agility among college men hockey players.

sReferences

1. Alricsson M, Harms-Ringdahl K, Werner S. Reliability of sports related functional tests with emphasis on speed and agility in young athletes. *Scandinavian Journal of Medicine and Science in Sports*. 2001;11(4):229-32.
2. Chandrakumar N, Ramesh C. Effect of ladder drill and SAQ training on speed and agility among sports club badminton players. *International Journal of Applied Research*. 2015;1(12):527-529.
3. Cooper KH. *Aerobics Program For Total Well-Being: Exercise, Diet, And Emotional Balance*. New York: Bantam Books; c1985.
4. Donatelle, Rebecca J. *Health: The Basis*, Pearson Education, Inc., Francisco; c2005.
5. Hsiu-Ching L, Yee-Pay W. Strength and Agility Training in Adolescents with Down syndrome: A Randomized Controlled Trial, *Research In Developmental Disabilities*, 2012 Nov 1;33(6):2236-44.
6. Kumar CS. Effect of land plyometric and sand plyometric training on selected physical and physiological variables among hockey players. *International Journal of Physical Education, Sports and Health*. 2016;3(3):540-544.
7. Sporis G, Milanovic L, Jukic I, Omrcen D, Molinuevo JS. The effect of agility training on athletic powerperformance. *Kinesiology*. 2010;2(42):65-72.
8. Sukumar B. Effect of plyometric exercises on agility among the netball players. *International Journal of physical Education, Sports and Health*, 2017;4(1):277-279.