



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2019; 4(2): 90-93

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www.theyogicjournal.com

Received: 25-05-2018

Accepted: 27-06-2018

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## Performance of badminton players after the 6 weeks of agility training under the age group of 12 years

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### Abstract

This pilot study investigated the effects of 6-week Agility training on badminton players under the age group of 12 years. Twenty badminton players (Boys Only) from Gurukhul Sports academy, Bangalore whose ages ranged from 11 to 12 years were included in the study. The subjects were randomly divided in to two groups of 10 subjects in each: 1) Training group I (Agility Training) and a controlled group. The training groups performed 4 days a week for 6 consecutive weeks. Agility was assessed using a 'T' shape test, Zig-zag tests, and skill performance assessed using anaerobic field test and short service test, and game performance were assessed through the coach rated basis. All the subjects performed the test before and after the training program. Data were analysed using dependent mean value and in-dependent mean value. A confidence level of .05 was considered significant. The results presented that the Agility and game performance of the subjects significantly improved in the training group. Significance was not found in the controlled group. There were also statistically significant differences identified between the 2 groups after training program. The training group had higher Agility compared to the controlled group. This study provides support to the fact that 6-week Agility training can be effective training program to improve the Agility in badminton players.

**Keywords:** Agility, training, male badminton players, 6 week

### Introduction

Badminton is a popular sport in India. It is the second most played sports in India after Cricket. The world's second fastest racket sport. Badminton's debut as an Olympic Game has manifestly boosted interest internationally. Badminton is a game in which you struggle hard to get stamina better than a football player hands stronger than a volleyball smasher, core strength more than a basketball player, wrist stronger than a squash player & agility higher than a table tennis player. It is one of the fastest game and no one can easily get into the game to higher position. Continuous back and forth bends improve spine strength, side changes of legs benefits for toes, heels and thighs. Warm and cool down, side changes of legs is also beneficial for toes and thighs. Warm up and cool down of the game makes your body breathe from each part, sweating and breathing improves blood circulation. There is no evidence of any research being don on this game, hence this study.

### The Statement of the problem

The purpose of the study is to find out the "performance of badminton player after the 6 weeks of agility training" with the help of selected fitness programme or training, skill test and game performance.

### The Significance of the study

The study has wide application in Physical fitness testing program.

The study may help to know the ability of player.

The study may help to compare the performance of different age groups during training period. The study can reveal the changes in performance in relation to the physical fitness level of the players.

The study may help the coach plan for specific training models to train and obtain better performance.

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The study may help to make appropriate coaching programmes planned for different age groups.

The study may help to find out the effects of the short term or long term trainings programmes.

### Hypothesis

1. It was hypothesised that there would be greater amount of changes in the performance after the 6 weeks of specified skill training.
2. It was hypothesised that there would be greater amount of difference in the game performance levels.
3. It further hypothesised that the Agility training of 12year age group after 6 weeks of agility training have greater influence on the skills and performance of the players.

### Methodology

The study will be conducted on experimental basis on the badminton player to know their level and performance and skill through 6 weeks designed training, through pre-test and post-test method.

In this chapter the procedure adopted for the selection of subjects, selection of variables, tester reliability, instrument reliability, training schedule, reliability of data, test administration and statistical technique for the analysing the data has been described.

### Selection of Subjects

The purpose of the study was to find out the effects of six weeks' agility training on selected variables and parameters among the badminton players. 10 players/ children were selected as subjected who playing for ranking badminton tournaments of under the age group of 12 years who training in Gurukhul Sports Academy, Karnataka India. The selected subjects were divided in to two groups of 10 subjects in each groups. Group one acted as experimental group I (Agility training) group and group two acted as controlled group. Group one underwent Agility training, group two underwent routine physical exercise for six weeks.

### Selection of variables

The research scholar reviewed the various scientific literatures pertaining to the strength training and agility training on selected variables from books, journals, periodicals and research papers. For this study the following variables were chosen Agility, Skills, Game performance.

The experimental group underwent training for six weeks. The data was collected before and after the training period for analysis. A pilot study was carried out to assess the initial capacity of the subjects in order to fix the training load. For this purpose, 20 students were selected and divided into two groups, Agility training, and controlled group. The intensity of the training was decided according to the age group of the players. The method for agility training consist of calculating the ability of the badminton player to move quickly and easily. Based on the response of the subjects in the pilot study, the training for the experimental group were constructed, however the individual difference was not considered, while constructing the training programmes the basic principles of training (progression, overload and specificity) were followed.

**Selection of tests:** Based on the availability of the instruments feasibility and also based on the review, the selected variables were tested by using standardized test items and the following test items were selected for the study.

Tests Selection

Sl. No	Variables	Test Items
1.	“T” Shape test	Cones, Stopwatch, Tape
2.	Zig Zag test	Cones, Stopwatch, Measurement Tape
3.	Short service test	Chalk, 6mtr Rope, Tape
4.	4 Point anaerobic field test	Cones, Tape, stopwatch. Badminton court
5.	Game performance	Coach rated (For 10 point)

### Orientation to the subjects

The researcher gave instruction to the subject about the experimental and testing methods and out the efforts required and testing methods and procedures, so that there was no confusion about the efforts required on their part. In order to get full co-operation from the subjects, they were oriented as follows. The method of performing the test items were explained and demonstrated to the subjects. The method of agility, skills variables, game performance were explained to the subjects, to ensure proper understanding and effective cooperation, so as to obtain reliable data from the tests.

**Experimental design:** The twenty subject were randomly assigned to two equal group of 10 badminton player in the age group of 12 years. The group were designed to as Agility training and control group respectively. Pre-test data was collected for all the 20 subjects on selected variables. Agility training was given to Agility training group for four days in a week for six weeks and controlled group left on their own. The post-tests were conducted on the dependent variables after a period of six weeks of Agility training.

**Analysis of Data:** The statistical analysis on significance of the mean gains or losses made in the scores in the performance variables, skill performance variables and game performance of badminton players of Agility training are presented.

### Results of Individualized Treatment Effects

The result of individualized effects of Agility training (AG) and Control group (CG) on performance variables of agility, endurance, and skill performance ability, and overall playing ability are presented below.

**Hypothesis:** It was hypothesized that Agility training group would significantly improve the performance variables of agility, skill performance of short service ability, fore hand clear ability, back hand clear ability, hand movement and wrist movement ability, from baseline to post-test above hypothesis the collected data were analysed by using paired sample ‘t’ test between the pre and post-test mean on performance variables and skill performance of male badminton players. The analysed data are presented in the below table.

**Table 1:** Shows Significance of Mean Gains / Losses between Pre and Post-Test of Agility training Group (Atg) on Selected Performance Variables, Skill Performance and Game Performance of Badminton Playeers under the Age Group of 12 Years.

Variables	Pre Test Mean± SD	Post Test Mean± SD	M. D	Std. Error Mean	't'-Value	Df	Sig
<b>Performance Variables</b>							
Agility 'T' shape test (in seconds)	16.03±0.358	13.837±0.508	2.193	.09932	22.080	9	.000
Agility Zig-Zag test (in seconds)	10.17±0.41072	7.848±0.48575	2.322	.05972	38.883	9	.000
<b>Skill Performance Variables</b>							
Anaerobic Field Test(in seconds)	12.846±0.7628	10.69±0.63657	2.156	0.1131	19.051	9	.000
Short service test(in points)	5.5±0.71	12.5±1.354	7.0	.29814	23.479	9	.000
<b>Game Performance Test</b>							
Game performance	2.70±.82327	8.40±.51640	5.70	.15275	37.315	9	.000

\* Significant at 0.05 level, Table value-2.262

Table-1 shows the mean value from pre to post-test in the performance and skill performance variables were: 2.193Secs and 2.322sec(Agility), 2.156sec and 7.00 points (Skill performance), 5.70 (Game performance) Overall playing ability test. Badminton game performance of the players was measured out of ten points by a panel of three qualified coaches during actual competition and the average of three scores was considered as game performance of the badminton players.

Table also shows the obtained 't' values of pre to post-test mean differences on performance, skill performance and game performance variables were: 22.080sec,

38.88sec(Agility), 19.051 points, 23.479 in seconds (Skill performance), 37.315 coach rated points (Game performance) Overall playing ability test.

The obtained 't' values were tested at 0.05 level of significance. Since the calculated 't' values were greater than the table 't' value at 0.05 level for degrees of freedom 9. Null hypothesis was rejected at 0.05 levels of significance and formulated research hypothesis was accepted. Thus it was concluded that six weeks of agility training program showed significant improvement in Agility, skills and overall playing ability (Game performance), as the study the above remark can be given at 95% confidence.

**Table 2:** Significance of Mean Gains / Losses between Pre and Post-Test of Controled Group (Cg) on Selected Performacne Variables, Skill Performance and Game Performance of Badminton Playeers under the Age Group of 12 Years.

Variables	Pre Test Mean± SD	Post Test Mean± SD	M.D	Std. Error Mean	't'-Value	Df	Sig
<b>Performance Variables</b>							
Agility 'T' shape test	14.46±1.12	14.44±1.09	0.02	.043	.526	9	.612
Agility Zig-Zag test	13.33±1.01	13.41±.912	0.08	.137	-0.577	9	.578
<b>Skill Performance Variables</b>							
Anaerobic Field Test	11.17±0.758	11.39±0.663	-0.22	.1611	-1.321	9	.219
Short service test(in points)	4.6±1.3499	4.6±0.96609	0.00	.47140	0.0	9	1.00
<b>Game Performance Test</b>							
Game performance	1.7±0.67495	1.6±0.5164	0.10	.23333	.429	9	.678

\* Significant at 0.05 level, Table value-2.262

Table-2 shows the mean value from pre to post-test in the performance and skill performance variables were: 0.02secand 0.08sec (Agility), 0.22sec and 0.0 points (Skill performance), 0.10 (Game performance) Overall playing ability test. Badminton game performance of the players was measured out of ten points by a panel of three qualified coaches during actual competition and the average of three scores was considered as game performance of the badminton players.

Table also shows the obtained 't' values of pre to post-test mean differences on performance, skill performance and game performance variables were:0.52sec, -0.577sec (Agility),-1.321sec, 0.0 in points (Skill performance), 0.429 coach rated points (Game performance) Overall playing ability test.

The obtained 't' values were tested at 0.05 level of significance. Since the calculated 't' values were lesser than the table 't' value at 0.05 level for degrees of freedom 9. Null hypothesis was rejected at 0.05 levels of significance and formulated research hypothesis was accepted. Thus it was concluded that six weeks of controlled group program showed no significant improvement in agility, skills and overall playing ability (Game performance), as the study the above remark can be given at 95% confidence.

## Result

After 6 weeks of agility training the training group showed

significance improvement in all the variables while those in the controlled group unchanged. When comparing post-test result between the training group and the controlled group, it was found that Agility training group and game performance in the training group were significantly greater than those in the controlled group.

## Discussion

The purpose of this study was to demonstrate the efforts of short term Agility training on badminton player of age group of under-12 years of badminton players who is playing for state ranking tournaments. The result in this study showed that 6 weeks of Agility training could significantly improve the game performance in the badminton players. These findings support several previous studies which have suggested that Agility training can enhance badminton ability.

## Suggestions

1. The proposed Agility training program should be a part of the physical preparation for badminton players because of its significant effectiveness in improving the skill of the Badminton players.
2. The present study was a pilot study so significant differences in leg muscle power were found and quick movement of Forward, lateral and backward movement were found. A research should include more volunteers which may result in a better sample and possibly a

significant difference in game performance between the training groups and controlled group.

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