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EFFECT OF SPEED, AGILITY AND QUICK NESS DRILLS ON THE PERFORMANCE OF FOREHAND DRIVE OF TENNIS PLAYERS

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ABSTRACT :

The study was conducted to investigate the effect of speed agility quickness drills on the performance of forehand drive (Power and Placement) of tennis players. The study was confined to 40 National and State ranked male Tennis players with the age range from fourteen to eighteen years from Hyderabad, Telangana, India. Selected students were tested on their forehand drive by "Tennis for Boys and Girls Skills Test Manual" by American Alliance for Health, Physical Education, Recreation and Dance, prior and after the 70 days of speed, agility and quickness training. In order to investigate the effect of speed agility quickness drills on the performance of forehand drive of tennis players, paired T test was applied. The level of significance was set at 0.05.The results of the study indicated that there was a significant improvement in forehand drive due to the SAQ (speed, agility and quickness) training.

KEYWORDS : *SAQ Training, Forehand Drive, Tennis, Speed Agility and Quickness Training.*

INTRODUCTION

Speed, Agility and quickness are important components for tennis athletes to develop their playing ability. Tennis is basically aerobic sport because it uses the phosphagen and lactic acid systems together about 70% of the time. A tennis player runs an average of 3 meters per shot and a total of 8 to 12 meters in pursuit of 1 point. Tennis players who are not capable of moving fast will have difficulty reaching well placed shots. Tennis movements can be divided into 3 directions: forward, which occurs 47% of the time; sideways which occurs 48% of the time and backward, which occurs 5% of the time. Quick lateral movement is the key when one must react immediately and change direction. Linear movement refers to running forward or backward such as from the baseline to the net. To be sport specific speed, agility and quickness training for tennis players should be performed over short distance and focus on the development of both linear and lateral speed. Agility refers to the ability to move or change direction quickly and easily. By working on ability and improving balance and coordination, tennis players will be able to move faster and change direction more quickly while maintaining control. Quickness is essential for changing direction and is considered a multi planar or multidirectional skill that combines acceleration, explosiveness, and reactiveness. In the world of sports, the ability to effectively accelerate, decelerate and change direction is very important in many sports, the most successful athletes are the most explosive and efficient movers. Speed is defined as the distance travelled per unit of time while multidimensional speed can be defined as a series of complex movements in the shortest time possible. More particularly, it's the ability to change direction or orientation of the body based on internal and external information without significant loss of speed. To some extent, it can be argued that an individual's ability to develop speed is largely predetermined. The dominant influences on speed include inherited traits, childhood movement experiences and exposure to training. However, it is possible to optimize an athlete's

multidimensional speed agility and quickness with a well-structured training program.

Agility can be defined by the ability to explosively start, decelerate, change direction, and accelerate again quickly while maintaining body control and minimizing a reduction in speed. Agility and quickness in terms of sports performance, refers to an athlete's ability to change direction quickly and appropriately while maintaining maximal speed, balance, and power. Agility can also refer to how well athlete changes directions laterally. More specifically Quickness is the overall integration of speed, agility, and balance that allows the athlete to cover ground efficiently on the court. An integration of the selected plyometrics/ballistics, speed ladder drills, and agility drills in this section will aid in improving an athlete's level of quickness. In Tennis speed, the ability to get point A to point B rapidly, is also important in tennis, being fast allows a player to get to more balls and set up with more time to prepare. To some degree, speed is genetically determined; players with more fast-twitch muscle fibers will generally be able to generate more force and will be faster. However, all players can improve speed by performing exercises and drills designed to build speed. In tennis, the faster you can get to the ball, the more time you will have to set for next shot. To improve speed, players must develop the ability to accelerate and slow down. To enhance these abilities, players should improve reaction speed, Contraction speed of the muscles, frequency of body movements which will help out the players in various situation like, when a player tries to make quick first steps, when a player performs movement patterns and changes of direction at high speed, when a player decelerates over a few steps to set themselves optimally to make ball contact and when a player hits powerful shots on the serve and from the baseline.

PURPOSE OF THE STUDY

To study effectiveness of specific S.A.Q. drills on the Performance of Forehand Drive of Tennis Players and to suggest effective training program for tennis players and coaches.

PROCEDURE AND METHODOLOGY

Selection of Subjects

For the present study 40 State and National ranked tennis players (Boys) ranging the age between 14 to 18 yrs, were randomly selected from Hyderabad, Telangana, India. Subjects participated voluntarily in the program.

Administration of Training Program

The training for experimental groups and Active controlled was administrated at sreenidhi Sports Academy, Hyderabad. Each experimental session was of 40-50 minutes duration. The training commenced with one week of general physical conditioning for the experimental groups, so that the subjects were ready physically and mentally to take on specific load administrated to them for the purpose of the study. After one week of conditioning the training was administrated to the experimental groups which included speed agility quickness training drills for three days (alternate) in a week. A week schedule was repeated to the proceeding week and the load was adjusted progressively. The principles adopted for the adjustment of load is as follows:

1-The load intensity was kept low to moderate in first and second week and increased progressively in proceeding week moderate to high.

2-The frequency of training was thrice in a week.

3- The density was adjusted according to intensity because it is inversely related to intensity.

4-The repetition and sets were increased progressively

5-The duration of training was forty to forty five minutes for each experimental day.

6-The duration of warm-up and cooling down practice were kept fixed at ten to fifteen minutes and five to ten minutes respectively.

7-Control group was not allowed to take part in the specific experimental training program expect they had daily general warming up and had their normal sporting activities.

CRITERION MEASURES

Forehand drive (Power and Placement) was assessed by Tennis for Boys and Girls Skills Test Manual by American Alliance for Health, Physical Education, Recreation and Dance.

STATISTICAL PROCEDURE

In order to investigate the effects of speed-agility-quickness training on the performance forehand drive of tennis players, paired T test was applied. The level of significance was set at 0.05.

RESULTS

Findings

DIFFERENCE BETWEEN PRE TEST AND POST TEST OF FOREHAND DRIVE OF SPEED-AGILITY-QUICKNESS EXPERIMENTAL GROUP

Table-1
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	POST TEST	45.7500	20	4.48242	1.00230
	PRE TEST	42.1000	20	4.55262	1.01800

It is clear from table-1 that the pre-test mean value of the forehand drive of SAQE GROUP are 42.10 ± 4.55 post-test mean value of the forehand drive of SAQ GROUP are 45.75 ± 4.48 respectively. The Std. Error Mean of pre-test and post-test are 1.09 and 1.00. The obtained t value of 16.52 is higher than the required table value of 2.09 at a = 0.05 for the df of 19. It is inferred that there is statistically significant difference between pre-test and post-test of forehand drive.

Table-2
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	POST TEST & PRE TEST	20	.976	.000

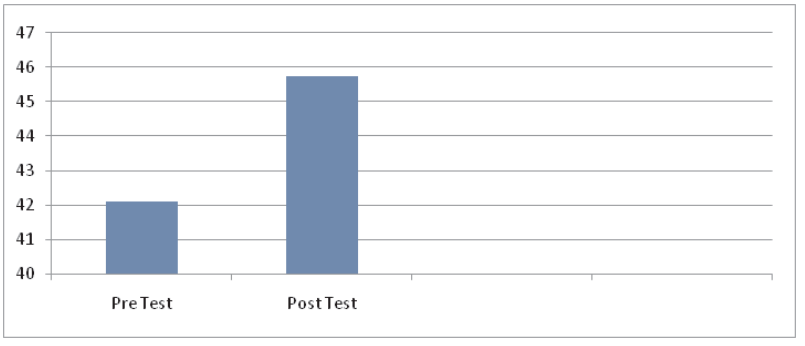
Table-2 indicates the calculated values of product moment correlation of pre-test and post-test for forehand drive selected for the purpose of the study. Further, it is evident from the table that the significant relationship between pre-test and post-test for forehand drive.

Table-3
Paired Samples Test

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 POST TEST – PRE TEST	3.65000	.98809	.22094	3.18756	4.11244	16.520	19	.000

Table-3 indicates that t (19) = 4.11, p < 0.0005. Due to the means of the pre-test and post test and the

direction of the t-value, there was a statistically significant improvement in forehand drive. Where the following pre-test and post-test of forehand drive are 42.10 ± 4.55 and 45.75 ± 4.48 ($p < 0.0005$); an improvement of 1.09.± 1.00.



GRAPHICAL REPRESENTATION OF PRE TEST AND POST TEST MEANS OF FOREHAND DRIVE OF SPEED-AGILITY-QUICKNESS EXPERIMENTAL GROUP

DIFFERENCE BETWEEN POST TEST OF FOREHAND DRIVE OF SPEED-AGILITY-QUICKNESS EXPERIMENTAL GROUP AND POST TEST OF ACTIVE CONTROL GROUP (PAIRED T TEST)

Table-4

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SAQE POST TEST	45.7500	20	4.48242	1.00230
	AC POST TEST	42.4500	20	4.90408	1.09659

Table-4 indicates that the post-test mean value of the forehand drive of SAQE GROUP are 45.75 ± 4.48 post-test mean value of the forehand drive of AC GROUP are 42.45 ± 4.90 respectively. The Std. Error Mean of SAQE post-test and AC post-test are 1.00 and 1.10. The obtained t value of 2.66 is higher than the required table value of 2.09 at a = 0.05 for the df of 19. It is inferred that there is statistically significant difference between SAQE post-test and AC post-test of forehand drive.

Table-5

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	SAQE POST TEST & AC POST TEST	20	.312	.181

Table-5 indicates the calculated values of product moment correlation of SAQE post-test and AC post-test for forehand drive selected for the purpose of the study. Further, it is evident from the table that the significant relationship between SAQE post-test and AC post-test for forehand drive.

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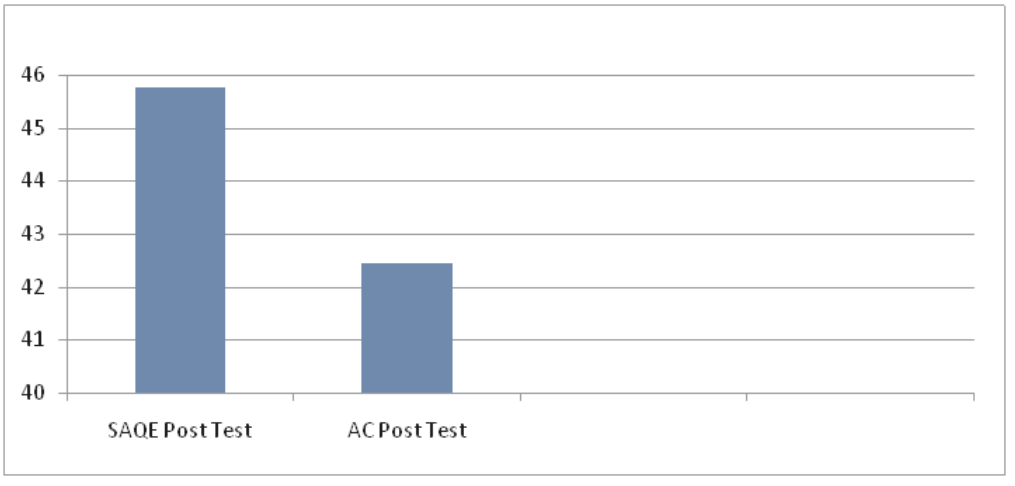
Table-6
Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	SAQE POST TEST – AC POST TEST	3.30000	5.51648	1.23352	.71821	5.88179	2.675	19	.015

Table-6 indicates that t (19) = 5.88, p < 0.0005. Due to the means of the SAQE post-test and AC post test and the direction of the t-value, there was a statistically significant improvement in forehand drive skill test of SAQE group. Where the following SAQE post-test and AC post test of forehand drive skill test are 45.75 ± 4.48 and 42.45 ± 4.90 (p < 0.0005); an improvement of 1.00.± 1.09.Which clearly shows a great improvement in forehand drive skill of SAQE group in comparison of AC group.



GRAPHICAL REPRESENTATION OF POST TEST OF FOREHAND DRIVE OF SPEED-AGILITY-QUICKNESS EXPERIMENTAL GROUP AND POST TEST OF ACTIVE CONTROL GROUP MEANS

DISCUSSION OF FINDING

After the comparison among the means of the pre test and post test of SAQE group and the comparison among the post test of SAQE group and the post test of active control group, it is very clear that the experimental group (SAQE) improved the performance of forehand drive of tennis players significantly in comparison to the active control group (AC). The reasons for improvement were due to the application of Speed-agility-quickness training on the treatment groups.

CONCLUSION

- Speed-agility-quickness training has a significant positive effect on the performance of forehand drive of tennis players.
- Quickness training for tennis players is an effective method to improve playing ability of tennis players.

APPENDIX

Appendix-A

RAW SCORE OF THE FOREHAND SKILTEST OF TENNIS PLAYRS FOR SPEED-AGILITY-QUICKNESS EXPERIMNTAL GROUP			
SL. NO.	**AGE (Yr)**	**PRE TEST** (Score)	**POST TEST** (Score)
1	14	42	45
2	17	35	38
3	15	34	37
4	16	45	48
5	18	48	51
6	15	45	48
7	14	37	39
8	14	38	42
9	16	43	47
10	15	46	49
11	16	41	46
12	17	44	49
13	17	46	50
14	18	38	43
15	15	37	41
16	14	45	48
17	16	39	44
18	18	50	52
19	17	47	51
20	15	42	47
SUM		**842**	**915**
M		**42.1**	**47.5**
SD		**4.55262**	**4.482422**

Appendix-B

RAW SCORE OF THE FOREHAND SKIL TEST OF TENNIS PLAYRS FOR ACTTIVE CONTROL GROUP			
SL. NO.	**AGE (Yr)**	**PRE TEST** (Score)	**POST TEST** (Score)
1	17	47	48
2	18	43	44
3	14	35	35
4	15	37	37
5	16	45	46
6	15	46	47
7	14	38	38
8	14	39	40
9	15	43	42
10	14	45	46
11	17	38	39
12	14	36	36
13	18	35	36
14	15	48	47
15	16	45	45
16	14	49	46
17	18	37	35
18	14	48	47
19	15	50	49
20	16	47	46
SUM		**851**	**849**
M		**42.55**	**42.45**
SD		**5.124503**	**4.90408**

Sum-Summation, M-Mean, SD-Standard Deviation

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