



Comparative Effect of Yogic, Physical and Combined Exercise on Basketball Shooting Skill of School Level Players

KEYWORDS

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ABSTRACT

Basketball is more often a game of nimble and quick bursts of speed from side to side fluent forward movement on player surface. Yoga contributes to take care of one's attention, motivation, anxiety concentration, neuromuscular efficiency, balance, coordination etc. The purpose of the present study was to compare the various 12 weeks training program for the basketball shooting skill development. For this purpose 80 male student were selected from DPS Rajnagar, Ghaziabad. All students were equally divided into three experimental ('A' Yogic, 'B' Exercise, 'C' Combined) and one Control 'D' group. Each group having 20 students. The basketball shooting skill was analyzed by Johnson basketball ability test. The analysis of covariance was applied on pre and post gathered data. The results of the study revealed that combined program was most effective for improving the basketball shooting skill followed by yogic and exercise program.

Introduction

The basketball game is known for skillful, speedy and powerful actions. A competition performance is no longer occurring at random as a result of chance alone in the games. Basketball is a game where full speed is seldom achieved by a player and in fact very infrequently warranted. The player must always be ready to stop and change direction quickly and this suggests that a compromise must be reached between the use of out-right speed and use of controlled speed so that he can drop quickly and change the direction on demand. Basketball player is most effective when he can start quickly and move with controlled speed to a given spot on the floor. Therefore, Basketball is more often a game of nimble and quick bursts of speed from side to side fluent forward movement on player surface.

Basketball is probably the leading ball game in the world. Over the year this versatile game has been established as an important game due to its physical and educational values as well as to its tremendous dynamics. All-round exercises serve as the main means for the general physical preparation. Therefore, it is first of all, necessary for the basketball player to master the basic techniques of general and exercises which are suitable for the development of physical abilities. Shooting is an important skill required in most of the games event in Basketball. The shooting skill, like other of Basketball, requires more powerful concentration. In an international Basketball competition, almost all teams are of similar physical caliber, but team which comprises of good shooters always wins.

The human body is similar to a machine. If mistreated and not properly maintained, the machines will malfunction and cease to run efficiently. Our bodies are similar, in proper maintenance fosters deterioration of the numerous physiological systems within the body. It is vital issue now to discuss that physiologists have expressed that physical exercise improves and promotes the efficiency of the whole organism and is essential for the proper functioning and maintenance of all the systems of the body. A balanced programme of physical fitness is profound importance to the life of an individual. There is scientific evi-

dence that neglect of regular activity mainly during adolescence cannot be fully compensated later on in life.

The scientific nature of the yogic practices was first revealed when late swami Kuvalyanada started his scientific research in the field of yoga 1924. These research findings could remove the mystical sheath over it. He showed pleasant posture produces mental equilibrium and prevents fickleness of mind. Asanas are not merely gymnastic exercise: they are posture.

The experiments on Yoga in relation to neuro-psychophysiological aspects also revealed that. Yoga contributes to take care of one's attention, motivation, anxiety concentration, neuromuscular efficiency, balance, coordination etc. (Bera et al., 1990; Gore, 1987; Kulkarni & bhogal, 1991; Sahsi, 1988; Vinod et al., 1991) that require for better shooting performance in Basketball. Like Yoga, Sufism also considers similar contents, but the usefulness of this content in area of sports has not been verified till-date.

The exercises aimed at increasing strength and endurance in the innermost muscles by gradually repeating complete sets of movements which simultaneously created natural coordination among muscles and body organs, unlike Yoga which was meant to achieve the same objectives with the body kept motionless and at rest (Menacho, 2010).

Skill in any game is pre-requisite to the performance of an individual. It becomes highly impossible for any player to achieve levels of any game without having a concrete base of skill. A highly skillful player utilizing all his personality during the game situation further applies tactical skills to overcome adverse situations. In other words, skills may become a detrimental factor for sports performance.

Further, basketball requires tremendous endurance, speed, agility, and power (Siegler et al., 2003). Therefore, it seems clear that there is need to develop a programme which will minimize the injuries and achieve performance skills in basketball. Consequently, game performance can be influenced by different training ap-

proaches and that no literature is available to report these training modalities. Thus, the purpose of this study was to identify the effect of six weeks yoga, exercise and combined program on basic skill development of school children from 12 to 14 years.

Procedure:

Selection of subjects

For the purpose of this study Eighty (N = 80) male Basketball (n=40) and volleyball (n=20) students age ranged between 12 to 17 years were selected randomly from D.P.S. Rajnager, Ghaziabad U.P. for this study. The age of the subjects was considered from the scholar register. All the subjects were the intermediate players of basketball and volleyball and practice regularly and voluntarily agreed to extend full co-operation and efforts for successful competition of investigation. The researcher himself expounded the details and importance of this research to the participating subjects.

Inclusion and Exclusion Criteria The criteria for inclusion and exclusion of the subject were as follows:

- The subjects who are expected to remain present till the experimental trials are finished were incorporated in this study.
- The players suffering from known *serious health problem*, as ruled out by the physician, were excluded.
- The subjects who agreed to restrict themselves into yogic diet during the tenure of the experiment were included.
- Final selection of the subjects will be done as per the suggestion of the basketball and volleyball coach.

The subjects were divided in three groups, Experimental groups 'A', 'B', and Control Group 'C' of 20 subjects each. In each groups 10 basketball and 10 volleyball players were included. The groups were randomly assigned to act as controlled group and experimental groups as suggested by Robert and James (1969).

Reliability of data

The reliability of data was established following the instrument reliability and tester competency.

Instrument Reliability

The entire instruments were available in laboratory of OPJS University, Rajasthan. The estimation of hematological variables was done with the help of a bio-chemist and trained lab technicians in registered pathology. And the instruments such as haemocytometer, auto-analyzer, Stethoscope, stop watch etc. of high quality their reliability was confirmed by the authorized manufacturer and result shows excellent accuracy. The testing procedure was started only after established the instrument reliability.

Basketball Skill Test

The Johnson basketball ability test was developed by the L. Williams Johnson in 1934 for High school boys. The reliability and validity this test was found by developer .89 and .88 respectively. Investigator also used this test to analyze of basketball playing ability of the student. The three items were included under basketball playing ability. Brief description of the items on the Johnson basketball playing ability test follows.

Field Goal Speed Test:

Starting close under the basket in any position he desires, the subjects throws as many baskets as he can in thirty

seconds. One point is given for each success basket made.

Basketball Throw for Accuracy:

The target, as shown in **figure** is a series of rectangles of various sizes, arranged one inside another of the other. The target is either marked or hung on the wall with the length of rectangles in a horizontal position, the bottom 14 inches from the floor, the subject has ten trials, from a distance of 40 feet, using either baseball or hook pass.

Scoring: 3 points for inner rectangles and line, 2 points for middle rectangles and line and 1 point for outer rectangle and line.

Dribble (Zigzag Dribble):

Four hurdles are placed in a line 6 feet apart, with a distance of 12 feet from the starting line to the first hurdle. Points 1 to 10 are noted at each zigzag end of hurdle include starting line start from first hurdle. The subject start from one end of starting line (which is 6 feet long), dribble around the hurdle in zigzag way and back to another end of starting line

Scoring: The number of zones passed in 30 seconds is score for dribble.

Final Score: the three tests are scored as a battery by adding the three obtained scores. The total score range was 16-68 with median at 42.

EXPERIMENTAL DESIGN

Eighty (80) male student of D.P.S. Ghaziabad were divided in four groups of 20 each. The first two groups namely 'A' and 'B' and 'C' were selected for specially designed Exercise and yogic practices and combined exercise respectively and the fourth control group 'D' was not be assign any activity. The age of the subjects ranges 12-17 years. The purpose of the study will be clearly explained to the subjects. All the subjects were intermediate to basketball and volleyball activity, the extra classes for training were provided to novice subjects. The data for skill of basketball were collected prior and post training programme of three months during the program players were not allowed to play basketball. They only allowed to do specially designed activities.

Procedure Experiments

The experiment were conduct for a period of three months, excluding the periods taken for collecting the data.

Yogic Practices program:

The experimental group 'A' performed certain suggested yogic practices by yoga experts. Such as Sarvangasana, Matsyasana, Halasana, Bhujangasana, Salabhasana etc. The total duration of yogic practices was 45 minutes and 5day/week.

Physical Activities Program:

The experimental group 'B' was performed expert suggested and specially designed exercises, they were perform in repetition method. The total time duration was set 45 minutes and 5day/week.

Combined Exercise Program:

The experimental program 'C' did(specially designed exercise and yogic practices) program combined up to the 80 minutes per day. By this group specially designed activity performs first and yogic activity perform later.

Statistical procedure:

To established the effects of the yogic practices exercise and combined (yogic practices and exercise) on selected basketball skills, the data were examined by applying analysis of co-variance. The level of significance chosen was 0.05 present.

Analysis of data

Table – 1

Analysis of Covariance of the Means of three experimental groups and the control group in basketball shooting skill

Basketball Shooting									
	Groups				Sum of Square		D.F.	Mean Square	F. Ratio
	Yoga	Exercise	Combined	Control					
Pre Test	6.9	6.65	7	7.15	B	2.65	3	0.883333	0.450862
					W	148.9	76	1.959211	
Post Test	12.35	11.5	13.2	8.85	B	212.65	3	70.88333	25.49519
					W	211.3	76	2.780263	
Adjusted Post Test Means	12.044	8.37	12.21	6.89	B	214.34	3	71.44518	25.95426
					W	209.21	75	2.752735	

*Significant at 0.05 level [Tab.-F at (3,76)_{0.05} = 2.74]

[Tab.-F at (3,75)_{0.05} = 2.74]

W= With in sets

B= Between the sets

The analysis of covariance of basketball shooting skill indicated that the resultant F – ratio of 0.450862 was not significant in case of the pre – test means indicating that initial means difference among the groups were not significant. The post test means of the entire four groups yielded an F ratio of 25.49 which was significant at 0.05 level. The difference between the adjusted final means of four groups was significant as the obtained F ratio was 25.95 greater than tabulated F ratio being 2.74. Since the difference between the adjusted final means of the four groups is found significant, the LSD test was applied to find out which of the difference between paired adjusted final means were greater. Difference between the paired adjusted final mean are shown in table – 2.

Table – 2

Adjusted mean scores on Basketball Shooting Skill during post testing in different groups					
Yoga Group	Exercise Group	Combined Group	Control Group	Mean difference	Critical Mean
12.35	11.5			0.85	1.038837
12.35		13.2		0.85	1.038837
12.35			8.85	3.5*	1.038837
	11.5	13.2		1.7*	1.038837
	11.5		8.85	2.65*	1.038837
		13.2	8.85	4.35*	1.038837

*Significant at 0.05 level

The above table reveals that the differences in the means of yoga and control, Exercise and Control, Combined and control and Exercise and Control groups were found to be significant. But Yoga and Exercise, Yoga and Combined groups were not statistically significant 0.05 level of confidence. Since our hypothesis were accepted thus we are able to conclude that combined programme was most affect full for developing basketball shooting skill followed by Yoga and exercise program.



Figure – 1

Discussion of results

The basketball shooting skill could be developed through practicing yoga and exercise combined along with the practicing the basketball. The yogic practices might be improved basketball shooting skill but not like as combined exercise whereas the only exercise for improving basketball shooting is last option with following program. Yoga and exercise combined program provide sufficient endurance and concentration for make shooting accurately and frequently.

Desai (1978) examined the effect of asanas on skill development in Basketball. It was seen that practicing asanas with proper techniques after skill practice improves the efficiency of learning shooting skill and dribbling in Basketball where as passing skills are not influence. It advanced the learning by about two weeks in all the basic skills, except in speed pass and jump and reach.

Ezhilarasi and Amsanatarajan(2014) studied on the effect of yogic practices and aerobic exercises on muscular strength among women Basketball players. In their study they were concluded that aerobic exercises was considered better than yogic practices group, and control group in improving of muscular strength of basketball players.

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