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A comparative study of physical fitness variables among hand ball players at different levels

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Abstract
The purpose of this study was to explore the impacts of selected physical variable among hand-ball players. To conduct this study fifty school level girls were selected as a sample. 25Hand-ball players were selected as subject from zonal and 25 women hand ball players from district level. The subjects were informed about the nature of the study before the training or test. Their age ranged in between 16 to 19 years. The subjects were divided in two groups' namely experimental group and control group. The experimental group was subjected to general and specific warming, sometime game practice training at morning session for six weeks. Speed, strength; speed endurance was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed by using paired "t" test. The level of significant was set at 0.05.The result of the present study showed that the physical training has significant improvement on speed, strength, speed endurance of hand-ball players. The study found that the physical variable like speed, speed endurance, and strength had improved on experimental group comparison to control group.

Keywords: Physical fitness, strength, speed, speed endurance, hand-ball players

Introduction
Physical fitness is a state of health and wellbeing and more specifically, the ability to perform aspects of sports, occupations and daily activities. Physical fitness is generally achieved through proper nutrition, moderate-vigorous. Physical fitness is generally achieved through proper nutrition, moderate-vigorous physical exercises and sufficient rest along with a formal recovery plan. Regular participation on training schedule improves. All the important physical, physiological and psychological fitness components.

Hand-ball a European game. It is a team sport in which two teams of seven player each side. (six out court players and a goalkeeper) The modern set of a rules was published on 29 october 1917 in Berlin. The first international games were played under these rules for men in 1925 and for women in 1930. This game is most popular in Europe, and European countries have won all medals.

Definition of the Terms
Speed: It is the performance pre-requisite to do motor actions under given conditions (movement task, external factors, individual pre-requisites) in minimum of time (Schnabel 1987) [14].

Strength Strength is conditional ability. It is one of the important motor ability in sports. Strength is the ability to overcome to act against the maximum resistance.

Speed endurance: It is an ability to repeatedly produce high speed of movement with minimum resting period between individual repetitions. Reaction speed is an ability to react to a given stimulus as fast as possible.

Methodology
Subjects
This study was designed to compare the strength, speed, and speed endurance of Hand-ball players.

To conduct this study, 50 women Hand-ball players of Fazilka district were selected as the subjects. The age of the subject ranged between 16 to 19 years. The subjects were already informed about the study. The sample size was randomly selected from zonal and district level players. Zonal level players were assigned to as a Control group –A, district level players were assigned to as an Experimental group-B (Regular practice) of equal numbers of subject. To achieve this purpose, twenty five in control group and twenty five in experimental group.

Experimental Design

The Subjected were divided in two equal groups, A and B group 'A' acted as control and group 'B' (experimental group) was trained with general and specific warming up and some game practice. The training program was carried out five days in a week for six weeks. The collected data were subjected to statistical treatment using to 't' ratio and P value and R value to find out the significance of the means obtained.

Statement of the Problem

The present study was designed to examine the "A degree of Physical fitness variables among School level Hand Ball players at different levels"

Hypotheses of the Study

It is hypothesized that selected physical variables will improve through physical fitness training on the women Hand-ball players in district Fazilka.

Significance of the study

The present study has the following significance contribution to the field of physical education and sports. The findings of this study told about how the warming –up and regular practice will help to improve the physical fitness variable of Hand-ball women players.

Limitation of the study

1. The investigator tried to use the best available standard equipment and tools for collecting the data.
2. The ground conditions, the surface of the courts used at different places to measure the physical fitness variables varied slightly from one place to another place.

Delimitations of the study

1. The samples were taken only 50 women Hand-ball players from Fazilka district.
2. The age limit of the sample is between 16-19 years.
3. Only three physical fitness variables were taken in this study.

Physical variables and their test for the study

Standard tests were conducted to measure the selected physical fitness variables of this study. The selected variables and their tests are given below

The list of selected physical variable and their tests for their study

Sr. No.	Variable	Field Test	Units of Measurements
1.	Speed	Shuttle run	In seconds
2.	Speed endurance	600 Meter run	In minute & seconds
3.	Strength	Standing broad jump	In meter & centimeters

Preparation of physical fitness training and workout schedule

The physical fitness training was developed according to level and age group of players. Aim of sports training was to develop the performance of district level women players.

Physical fitness training programed (workout schedule) for 6 weeks

Weeks	1	2	3	4	5	6
Durations	20	20	20	40	40	50
Sets of exercise per session	2	2	2	2	2	2
Intensity of maximum (%)	40-50	40-50	40-50	40-50	40-50	40-50
Total time in minutes	34	34	34	49	49	54

Walking, jogging, running, stretching and various exercises given to all movable joints given to all warm up sessions.

Administration of tests

Shuttle run

Purpose: This test help to measure the aerobic fitness or speed ability of the players.

Equipment: Measurement tape, white powder, stop watch, two cones, whistle, pen, paper etc.

Procedure: After a few warm-up exercises the subjects are ready to perform this test. The researcher marked two parallel lines, five centimetres thick and 30 feet apart. The researcher was asked to subject take any position behind the starting line and two cones were placed behind the other line. A starter use the commands,' on your marks set' and 'go'. The time keeper stopped the watch when he crossed the starting line second time. Each subject was given two trials.and the better of two trail was recorded.

Scoring: The score is the recorded time to the nearest tenth of a second between the starting line and finishing line. The best time out of two trials was the score of the subjects recorded

Speed endurance (600m run)

Purpose: To measure endurance of players.

Equipment: Running track of 400 meters, whistle, stopwatch, marking power, pen, paper etc.

Procedure: After some general warming up exercises the subjects takes a start position behind the starting line and starter uses the commands, on your mark and go one trail was permitted. With the starting commands the subjects run 600 meters as fast as they can.

Scoring: The score was recorded in second to the nearest tenth of a second. The time begins when the command 'go' is given.

Standing Broad Jump

Purpose: To measure explosive strength of legs.

Equipment: About 20 feet ground surface with marked take - off line at any side and a measuring tape, whistle, pen paper etc.

Procedure

A take off line was drawn on the plain surface near the

landing pit. First of all researcher give demonstration. Then players perform there test. Players stand behind the take-off line with his feet several inches apart and toes just behind the line. In preparation for jumping, the subject swings the arms backward and bends the knees. The jump is accomplished by simultaneously extending the knees and by swinging the arms forward.

Scoring: Each jump was measured in meter and centimetre from the take-off point to the nearest point where any part of body touched the ground/surface. The reading of the best jump out of three trials was recorded as the final score.

Analysis and interpretation of data

To find out the effectiveness of the general or specific & some game practice on selected physical variable such as speed, speed endurance, strength of women hand ball players. Subjects are divided in equally two groups. 25 players in each group.

Speed

Table 1: Comparison of pre-test and post-test score of speed in shuttle runs among the control group and experimental group.

Group		Test	Mean	S.D	R Value	Calculated 't' value	P value
A	Control	Pre-test	6.46	0.37	0.96	2.36	0.04
		Post-test	6.44	0.38			
B	Experimental	Pre-test	6.52	0.28	0.99	20.97	0.00
		Post-test	6.39	0.27			

$p<0.01$ indicaes significant at 1% level

As the p value of the table is less than 0,05, there is significant differences between pre-test and post-test scores of speed in shuttle run among the control group, experimental group Hand-ball women players of Fazilka. From the mean value it is clear that both groups seems to take more time in their pre-test to complete shuttle run than that of pre-test which reveals that they perform better in their post-test. As the 'R' value of the table. 1 is positive, the proposed hypothesis i.e. the physical fitness training will have a positive correlation with variable –speed is accepted.

Speed endurance

Table 2: Comparison of pre-test and post-test scores of speed endurance in 600 meter run among the control group and Experimental group of Hand –ball women players

Sr, No.	Group	Test	Mean	S.D	R Value	Calculated 't' value	P value
A	Control	Pre-test	1.96	0.31	0.97	2.52	0.02
		Post-test	1.93	0.33			
B	Experimental	Pre-test	1.91	0.33	0.84	6.02	0.00
		Post-test	1.65	0.32			

$p<0.01$ indicates significant at 1% level

As the p value of the table is less than 0.05, there is significant difference between pre-test and post-test scores of speed endurance in 600 meter run among the control group, experimental group hand-ball women players of Fazilka. From the mean value it is clear that both groups seems to take more time in pre-test to complete 600 meter run than that of post-test which reveals that they perform better in their post-test. As the R value of the table.2 is positive, the proposed hypothesis i.e., the physical fitness training will have a positive correlation with variable-speed endurance is accepted.

Strength

Table 3: Comparison of pre-test and post-test scores of strength among the control and experimental group of Hand-ball women players.

Sr. No.	Group	Test	Mean	S.D	R Value	Calculated "t" value	P value
A	Control	Pre-test	236.25	18.35	0.99	14.24	0.00
		Post-test	245.25	17.84			
B	Experimental	Pre-test	244.14	19.16	0.96	27.23	0.00
		Post-test	264.40	19.10			

Significant

As the p value of the table is less than 0.005, there is significant difference between pre-test and post-test score of strength among the control group, experimental group of hand-ball women players of Fazilka district. From the mean value it is clear that both groups seems to perform better in their post-test. As the 'R' value of the table 3 is positive, the proposed hypothesis i.e., the Physical fitness training will have a positive correlation with variable –strength is accepted.

Conclusion

The finding of the study found that the physical variables like speed, speed endurance, strength had improved on experimental groups, in comparison to control group after a 6 weeks regular practice and warming up showed significant improvement in all the above physical variables.

References

1. Bawa and Debanth. Effect of 6 weeks training camp on physical ability level elite gymnasts. NTS scientific Journal Jul vol.-17.
2. Charles Horald, Clay MC. Test and measurement in Health and Physical Education (New York: F.S. Croffs and Co.); c1939, 84.

3. Fontera WR, Adams RP. Endurance exercise: Normal physiology and limitation imposed bypathological processes (part1.) The Physician and Sportsmedicine. 1986;14(2):95-104.
4. Gettman LR, Pollock ML. Circuit weight training: A critical review of its physiological benefits. The Physician and Sportsmedicine. 1981;9(3):44-60.
5. Harris KA, Holly RG. Physiological response to circuit weight training in borderline hypertensivesubjects. Medicine and Science in Sports and Exercise. 1987;19:246-252.
6. Kamlesh ML. Methodology of Research in physical education and sports, Delhi: Metropolitan Book Company.
7. Stewart KJ, Mason M, Kelemen MH. Three year participation in circuit, weight training improve muscular strength and self-efficiency in cardiac patients. Journal of Cardioplumonary Rehabilitation. 1988;8:292-296.
8. Science of Sports Training Hardayal Singh.
9. Wilmore JH, Parr RB, Ward P. Energy cost of circuit weight training. Medicine and Science; c1978.
10. http://www.brianmac.co.uk/runtest.htm
11. http://www.brianmac.co.uk/stndjump.htm
12. http://www.topendsports.com/testing/tests/longjump.htm
13. http://www.topendsports.com/testing/tests/shuttle.htm
14. Priess JR, Schnabel H, Schnabel R. The glp-1 locus and cellular interactions in early C. elegans embryos. Cell. 1987 Nov 20;51(4):601-11.