

Comparative Study on Physical Fitness among National & District Level Handball Players

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Abstract

Physical fitness is a tremendously important issue in modern life, worthy of our serious attention. Why that assertion is true and what we need to attend to will become clearer as part 3 unfolds. At the outset, let it suffice to quote a statement that is now generally agreed to in all the allied medical professions, as well as in the sport, fitness, and physical-education professions.

Every player work very hard to achieve the highest performance in sports but not every players can achieve their set goal. In this study the researcher treads to find out exactly the cause due to which players fail to achieve their goal. In this study a total of 300 players have been selected by random selection method across vidharbha region out of which 150 players are from District level and 150 are from National level.

Results of the study shows that there is a significant difference in Physical fitness level of national and district level handball players with respect to Speed, Agility, leg Muscular Power & Should Muscular Strength the researcher recommended more study on Physiological and Psychological variables of players participation in different level of tournament so that players can be benefited.

KEYWORDS: - Vidharbha region, National Level, District Level, Speed, Agility, Leg muscular power, Shoulder Strength

Introduction:

Handball (otherwise called group handball, Olympic handball, European group handball, European handball, or Borden ball) is a group activity wherein two groups of seven players every (six outfield players and a goalkeeper) pass a ball utilizing their hands with the point of tossing it into the objective of the other group. A standard match comprises of two times of 30 minutes, and the group that scores more objectives wins.

Modern handball is played on a court 40 by 20 meters (131 by 66 ft), with a goal in the center of each end. The goals are surrounded by a 6-meter zone where only the defending goalkeeper is allowed; the goals must be scored by throwing the ball from outside the zone or while "jumping" into it. The sport is usually played indoors, but outdoor variants exist in the forms of field handball and Czech handball (which were more common in the past) and beach handball (also called sand ball). The game is quite fast and includes body contact, as the

defenders try to stop the attackers from approaching the goal. Goals are scored quite frequently; teams typically score between 20 and 35 goals each.

The game was codified at the end of the 19th century in northern Europe, chiefly in Scandinavia and Germany. The modern set of rules was published in 1917 in Germany, and had several revisions since. The first international games were played under these rules for men in 1925 and for women in 1930. Men's handball was first played at the 1936 Summer Olympics in Berlin as outdoors, and the next time at the 1972 Summer Olympics in Munich as indoors, and has been an Olympics sport since. Women's team handball was added at the 1976 Summer Olympics.

The International Handball Federation was formed in 1946, and as of 2013 has 174 member federations. The sport is most popular in continental Europe, whose countries have won all medals but one in men's world championships since 1938, and all women's titles until 2013, when Brazil broke the series. The game also enjoys popularity in Far East, North Africa and Brazil.

Physical Fitness was associated with numerous health benefits. The dose-response relations observed in observational studies indicate that the more physical activity, the greater the health benefit. Results from experimental studies indicate that even modest amounts of physical activity can have health benefits in high-risk youngsters (e.g., obese). To achieve substantive health benefits, the physical activity should be of at least a moderate intensity. Vigorous intensity activities may provide even greater benefit. Aerobic-based activities had the greatest health benefit, other than for bone health, in which case high-impact weight bearing activities were required.

Over the past 40 years, there has been growing interest in the study of health benefit of regular physical activity. The 1996 publication of the Surgeon General's report (SGR) on Physical activity and health brought further legitimacy to the study of physical activity and increased attention on physical activity as a major public health problem. Although the health benefits of physical activity are now clearly established, there is still much to be learned about the nature and mechanism underlying these benefits. The high prevalence of inactivity in the population also confirms that major efforts are needed to promote the behaviors.

OBJECTIVE OF THE STUDY

Objective of the study is to find out physical Fitness of Handball Players participating in different level of tournament.

Hypotheses

There will be significant difference on Physical Fitness among National and District level handball players.

SELECTION OF Players

300 Male Handball Players was selected as subjects for present study. 150 players were selected from District Level and 150 players were

selected from National Level. All the players selected within Vidarbha region (Nagpur Division) through random sampling method.

CRITERION MEASURE

Physical Variables:

Sr.	Test Items	Elements Tested
1.	50 yard Dash	Speed
2.	Shuttle Run (10 x 4 Yards)	Agility
3.	Leg Muscular Power	Standing Broad Jump
4.	Should Muscular Strength	Pull-up

ADMINISTRATION OF THE TEST

PHYSICAL VARIABLES

1. 50 YARD DASH :

Purpose: To measure the acceleration speed of the subject.

Equipment: Stop watches, Measuring tape, clapper etc.

Description: Two lines were drawn at a distance of 50 yards on a standard 400 track and then the three subjects were asked to take a standing start behind the starting line. At the sound of the clapper the subjects were started running to the best of their abilities to cover a distance of 50 yards. The time which was taken by each subject to complete the distance was recorded with the help of a stop watch. Three trials were given with some rest in between.

Scoring: The best time out of three trials of the nearest 1/100th of a second was recorded as final score.

2. SHUTTLE RUN

Purpose: To measure the ability of running and changing of body position in speed of the subjects.

Equipment: Wooden blocks of 2x2x4 inches, stop watch, clapper and measuring tape.

Description:

Two parallel lines were marked 10 yards apart as starting and distal line. Two wooden blocks for each subject, were placed behind the distal line at the time of start. On the sound of the clapper the subjects ran to the blocks picked up one, returned back to the starting line, again ran back to the second block picked up, returned back and finished to the starting line.

Scoring: The final scores will be the best three trials to the nearest 1/100th of a second.

3. STANDING BROAD JUMP :

Purpose: To measure muscular strength of the subjects.

Equipment: Long Jump pit, measuring tape, lime powder, chalk etc.

Description: The subjects were asked to stand with feet parallel to each other behind the standing mark. Then the subject was asked to bend his knees and swing his arms & jump as far forward as possible.

Scoring: The number of cm's between the standing mark and the nearest heel on landing is recorded as the score. Three trials was given to each subject and then the score of the best trial is recorded as the final score.

4. PULL-UP:

Purpose: To measure shoulder muscular strength of the subjects.

Equipment: Horizontal Bar

Description: The bar adjusted to such height that the subject can hang free of other floor. The subject should grasp the bar with his arm palms facing away from his body (over hand grasp). The student than raise body until his reaches over the bar than lower it again to the starting position with his arm fully extended should not lift his knee of assist his pull up by kicking student must return to the hang position with the arm fully straight. You will not permit to swing or snap your way up.

Scoring: One point is awarded each time the student completes a pull-up incomplete pull-up will be not count. Only one trail is permitted.

Table No.1

Statistical Properties related to Physical Measurements of Handball Players (N=300)

Physical Variables

Variables	Mean	Median	Mode	S.D.	Skewness	Kurtosis
50 Yard Dash	7.64	7.80	8.10	0.56	0.22	0.63
Shuttle Run	10.32	10.90	12.05	1.63	0.59	0.74
Standing Broad Jump	1.94	1.90	1.90	0.31	0.43	0.89
Pull-up	8.14	8.00	5.00	3.26	0.32	0.92

After the distribution for whole 300 samples researcher was decided to analyses the data as per group i.e. national /inter university level group and district/ inter collegiate level group. The statistical properties of first group (n=150) i.e. national/inter university level group is presented in table no. 2 below. First variable i.e. physical variables the data for 150 samples, the mean of 50 yard dash is 7.29, median 7.09, mode 6.90, standard deviation 0.57, skewness 2.05 and kurtosis is 5.77. The mean of shuttle run is 8.93, median 9.19, mode 10.20, standard deviation 1.13, skewness 0.49 and kurtosis is 0.94. The mean of standing broad jump is 2.15, median 2.15, mode 2.20, standard deviation 0.25, skewness 0.70 and kurtosis is 2.02. The mean of pull up is 10.70, median 11.00, mode 10.00, standard deviation 2.54, skewness 0.86 and kurtosis is 1.97.

Comparison among National and District level handball players on 50 yard dash, Shuttle run, Standing Broad Jump & Pull ups.

	National Level (N=150)		District Level (N=150)		Md	t	Level of Significance
	Mean	SD	Mean	SD			
50 yard Dash	7.29	0.57	8.00	0.22	0.70	13.88	.01
Shuttle run	8.93	1.13	11.71	0.46	2.77	27.70	.01
Standing Broad Jump	2.15	0.25	1.72	0.18	0.43	16.84	0.01
Pull up	10.70	2.54	5.59	1.34	5.10	21.73	0.01

t value.05 = 1.96 and .01= 2.61

1. First comparison has been made among national level and district level handball players on 50 yard dash. Result found that handball players performing 50 yard dash have shown significant difference on 50 yard dash. The 't' value is 13.88 which is greater than book value. That means there is significant difference has been found beyond .01 levels.

Above mentioned result shows that national level handball players have shown more speed as compared to district level handball players. Thus the hypothesis no.1 stated in chapter 1 i.e. 'there will be significant difference among National level and district level handball players on 50 yard dash', is accepted for present study.

2. Next comparison has been made among national level and district level handball players on shuttle run. Result found that handball players performing shuttle run have shown significant difference. The 't' value is 27.70 which is greater than book value. That means there is significant difference has been found beyond .01 levels.

Above mentioned result shows that national level handball players have shown more agility (coordinative ability) as compared to district level handball players. Thus the hypothesis no.2 stated in chapter 1 i.e. 'there will be significant difference among national level and district level handball players on shuttle run', is accepted for present study.

3. Third comparison has been made by researcher among national level and district level handball players on standing broad jump. Result found that handball players performing standing broad jump have shown significant difference. The 't' value is 16.84 which is also greater than book value. That means there is significant difference has been found beyond .01 level.

Above mentioned result shows that national level handball players have shown greater explosive leg strength than district handball players. Thus the hypothesis no.3 stated in chapter 1 i.e. 'there will be significant

difference among national level and district level handball players on standing broad jump', is accepted for present study.

4. Fourth comparison has been made by researcher among national level and district level handball players on pull up. Result found that handball players performing pull up have shown significant difference. The 't' value is 21.73 which is also greater than book value. That means there is significant difference has been found beyond .01 level.

Above mentioned result shows that national level handball players have shown greater arm strength than district level handball players. Thus the hypothesis no.4 stated in chapter 1 i.e. 'there will be significant difference among national level and district level handball players on pull up', is accepted for present study.

Fig. No.1
Comparison among national level & district level handball players on 50 yard dash

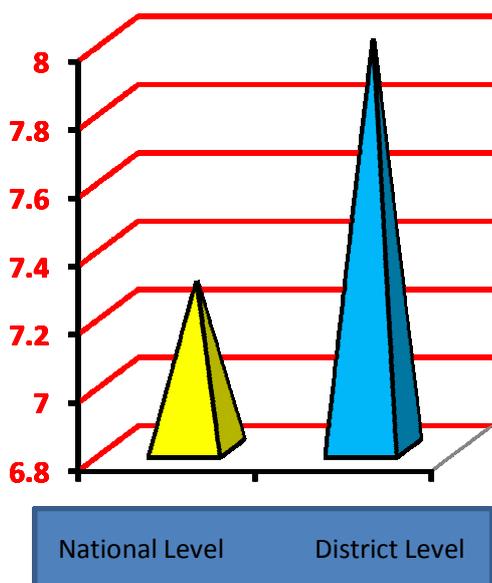


Fig. No. 2-
Comparison among national level & district level handball players on shuttle run

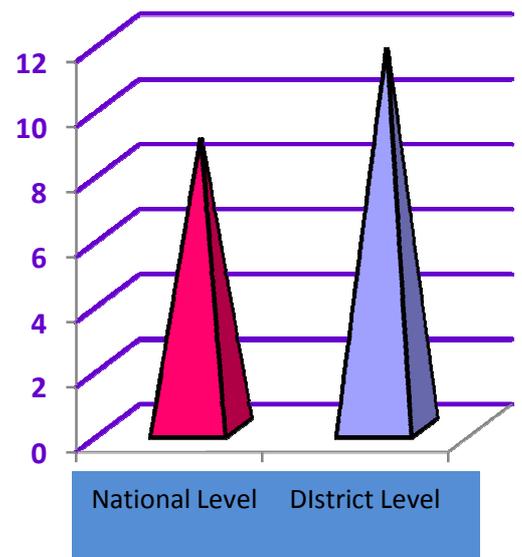


Fig. No. 3- Comparison among national level & District level handball players on standing broad jump

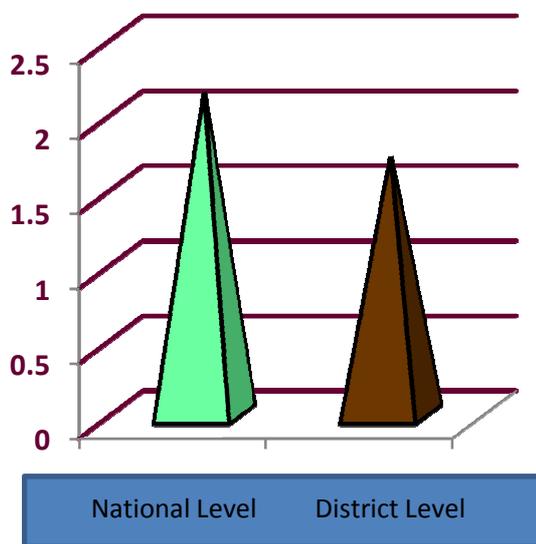
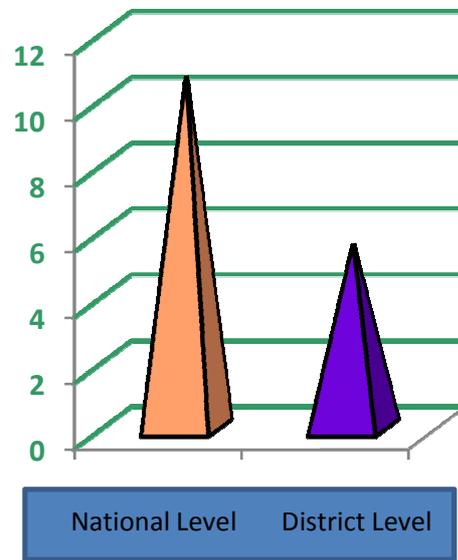


Fig. No.4- Comparison among national level & district level handball players on pull up



CONCLUSIONS

1. Handball players playing in National level have shown greater agility (coordinative ability) as compared to District level handball players.
2. Handball players playing in National level have shown greater explosive leg strength as compared to District level handball players.
3. Handball players playing in National level have shown greater arm strength as compared to District level handball players.
4. Handball players playing in National level have shown greater speed as compared to District level handball players.

RECOMMENDATIONS FOR FURTHER RESEARCH

1. This type of research study may be possible on girls and junior level players.
2. This type of study might be possible on different games like football, hockey, basketball etc.
3. Comparative study among two different sports also possible under the consideration of physical, physiological and psychological variables.
4. Researcher will able to study under physical, physiological and psychological dimensions with other different variables.
5. Comparative study among sports person- non sports person and tribal-rural and also cultural background may be possible.

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