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Evaluation of the physical fitness among handball and volleyball players of Meerut district

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Abstract

Physical fitness comprises two related concepts: general fitness a state of health and well-being, and specific fitness a task-oriented definition based on the ability to perform specific aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, and enough rest. Handball is a team sport in which two teams of seven players each (six out-court players and a goalkeeper) pass a ball using their hands with the aim of throwing it into the goal of the other team. A standard match consists of two periods of 30 minutes, and the team that scores more goals wins. Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules.

The purpose of the present study was to evaluate the difference in Physical Fitness among Handball and Volleyball Players of Meerut District. 15 Male Handball Players and 15 Male Volleyball Players between the age group of 19 Years to 21 Years of Meerut District were taken for the study. The AAPHER Youth Fitness Test consisting of 6 Items of 50 yard run, standing broad jump, pull ups, sit-ups, shuttle run and 600 yard were used for the study. It was found that Volleyball Players have good Physical Fitness compare to Handball Players. This study shows that the Volleyball Players are good in Physical fitness because they do good Physical Training More compare to Handball Players.

Keywords: Physical fitness, handball, volleyball, physical training, Meerut district etc.

Introduction

Physical fitness comprises two related concepts: general fitness (a state of health and well-being), and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through correct nutrition, exercise and enough rest. In previous years fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient. In current contexts, Physical fitness is considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases and to meet emergency situations. Physical Fitness is a level of health in which you have muscular endurance, muscular strength, flexibility, cardiovascular endurance and lean body composition. Physical fitness is achieved by the regular movement of muscles through a variety of exercises. Maintaining Physical Fitness is a life-long process and should always be part of your lifestyle. People with disabilities can also reach a measure of Physical fitness by doing exercises appropriate for their conditions.

The characteristics of physical fitness such as strength, endurance, agility, balance and flexibility are essential for physiological function and good health. Physically fit persons get the maximum satisfaction in everyday life, better physical co-ordination, mental judgement and emotional control. Physically fit persons is able to withstand fatigue for longer periods and is better equipped to tolerate physical stress.

Benefits of physical fitness

A. Improved health

i) Increased efficiency of heart and lungs ii) Reduced Cholesterol Levels iii) Increased muscle strength iv) Reduced Blood Pressure

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v) Reduced risk of major illness such as diabetes and other diseases

B. Improved sense of well being

i) More energy ii) Less stress iii) Improved quality of Sleep
iv) Improved ability cope with stress v) Increased mental activity.

The essential organic ingredients of physical fitness include strength, endurance, speed, power, flexibility, agility, co-ordination, balance and accuracy.

Handball

Team handball, also called field ball or handball, game played between two teams of 7 or 11 players who try to throw or hit an inflated ball into a goal at either end of a rectangular playing area while preventing their opponents from doing so. It is unrelated to the two- or four- player games, in which a small hard ball is hit against one or more walls.

A game consists of two 30-minute halves with an intermission, and players wear no protective equipment. The ball is moved by passing, dribbling, or hitting it with any part of the body above the knee. In handball, only the goalkeeper may kick the ball. Running more than three steps with the ball and holding it longer than three seconds are illegal.

Attacking players must take their shots at goal from outside an arc marked on the playing surface, within which only the defending goalkeeper may play. Free throws (usually passes to a team-mate) are awarded for minor violations of rules and taken from the spot of the violation or from a line a short distance outside the goal area, or circle. Penalty throws at goal are awarded for more serious infractions and are taken from a penalty mark just outside the circle and directly in front of the goal.

The two principal forms of team handball differ in number of players and dimensions of the field. The ball used in both is 58–60 cm (about 23–24 inches) in circumference and weighs 425–475 grams (15–17 ounces); women and younger players use a smaller ball. For the seven-man game, usually played indoors, the court is 40 metres (131.2 feet) long and 20 metres (65.6 feet) wide, the goal cage is 2 metres (6.5 feet) high and 3 metres (9.8 feet) wide, and the goal-area line is 6 metres (19.7 feet) from the centre of the goal. For the 11-man game, usually played outdoors, the playing area is 90–110 metres (295–360 feet) long and 55–65 metres (180–213 feet) wide, the goal is 2.44 metres (8 feet) high and 7.32 metres (24 feet) wide, and the goal circle is 13 metres (43 feet) from the goal.

Handball in its present form developed in Europe in the 1920s from earlier games. The game, in its 11man outdoor version, first appeared at the Olympics in 1936. It was subsequently dropped from the Olympics but returned as the 7-man indoor game in 1972. Women's team handball became an Olympic sport in 1976. The Fédération Internationale de Handball is the world governing body.

Team size

Handball is played between two teams of 7 members from each side, including a goal keeper. The goal keeper defends the goal while other six field player attempt to score goals by putting ball into the opposition's goal post. There are many professional handball teams participating in several national and international tournaments that are organised by various organisational bodies over the world.

Participating countries

Handball has been a popular game all over the globe. Even

though it originated in non-Asian countries, it has tremendous popularity in Asian countries. A number of federation has been formed which are conducting handball tournaments at higher level. It was introduced in Asia at the Asian Games of 1982 held at New Delhi. In Asian games, various countries like Japan, China, India, Saudi Arab, Kuwait, Qatar and South Korea participate in Handball, the competition being held once in every four years.

Handball is quite popular in countries such as Germany, Sweden, Berlin, Denmark, Iceland etc. International handball federation (IHF) has been organising various championship tournament for both men's and women's category. IHF is conducting these tournaments since 1946. Slowly, after the game's inception, indoor handball evolved and got popular in Scandinavian countries. Since then, it is being played in both indoor and outdoor condition.

Handball is being played on a rectangular court in either indoor fashion or on an outdoor grassy field. The game is played between two teams of seven members each. Each team are free to choose the side of the court they wish to play first and the referee decides which team will start the game by tossing process. Like other teams, players can be substituted in place of players on the field according to the rules and regulation governed by IHF.

Court design of handball

Handball is played on a rectangular court having dimension of 40mts by 20mts with a goal centre at each side. It has a centre line which equally divides the field into two identical rectangles. In each half of the court there is a goal surrounded by a semi-circular line known as the d-line. The region enclosed by d-line is known as d-zone or crease, where only goal keeper is permitted. Hence a player has to attempt to score goals from outside the d-zone without touching the d-line. Another dashed curve line of 9mts diameter indicates free throw line.

Dimensions of a handball field

- A handball player must be acquainted with the dimension of various regions of the handball court and the ball used. Basically a handball field is a rectangular shaped area having dimensions as below.
- Width and breadth of the handball court is 40mts in length and 20mts in width.
- The goal post is 2mts in height and 3mts in width.
- A 6mts line known as d-line separates the goal keeper from rest of the players who are not allowed to cross the line.
- A mark is provided at a distance of 7mts from the goal post from which penalty shots are taken in case any foul occurs during the handball match.
- A player starts the play from a 9mts dashed line in case being fouled inside the opponent's line. It is also known as free throw line.
- A centre line is also provided which marks the start of the game. It also acts as the reference line of resumption of game after half time. After scoring of goal, game is resumed from that mid line.
- Substitution line are marked on the side line of handball through which player must leave the court whenever a substitution is made.
- Ball size of a handball game varies depending upon whether it is being played under men's category or women's category. Dimension of ball for both category are as follows -

- Men's - Weight of ball ranges from 425gm to 475gm and circumference is from 56 to 60 cm.
- Women's - Weight of ball is between 325gm to 375gm and circumference is 54 to 56cm.

In Handball, a player uses different equipment which are needed while playing the game. An audience can see the use of the following equipment when game is on. As the game is played in various forms, equipment used by player also varies accordingly.

Ball

Ball used in handball is similar to the volley ball or the balls that are used in football, but nowadays a special type of ball has been made which is tailor-made for easy carrying and passing from hand to hand.

Goal centre

In handball, a goal centre is provided at each end of the court, which is 2mts tall and 3mts wide. The goal centre and the crossbar must be of the same material. Mostly, it is made of aluminium. The colour on both the goal centres must be the same.

Each goal centre must have a net and it must be fastened in such a way that a ball thrown into does not pass the goal.

Volleyball

Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964. In India it was in the year 1952 that the first national championship was held at Chennai.

In 1895, William G. Morgan invented a new game called "Mintonette". However, when an observer named Alfred Halstead saw the game being played, he noticed the volleying action used to get the ball over the net, so he decided to change the name to "volleyball".

Morgan wanted to create a skilled activity, which required more players, less space, and less exertion than basketball. The first net was a "rope" and the first ball was a basketball air bladder. Until 1960, men and women played with different rules. Now the rules are the same except for the height of the net, the men's net is higher.

A player cannot hit the ball twice. A point is gained when a team plays the ball in the opposition's court and the ball is not defended, therefore it lands within the court. The ball must be served (hit) from outside the court, otherwise it will be regarded as a foul. The game is played in sets of 25 points (sometimes 21). The team that reaches 25 (or 21) points first, wins the set. Each game consists of 3-5 sets (or the first one to 3 in middle school). The fifth set is played to 15 points.

A player usually wears knee pads to protect their knees from becoming bruised during dives for the volleyball. In order to win the game, the winners must be ahead by 2 points or the game goes on until you win by 2 points.

The sport's governing body is the Fédération Internationale de Volleyball (FIVB). Digging is the ability to prevent the ball from touching one's court after a spike or attack, particularly a ball that is nearly touching the ground. Usually, the player is diving (throwing themselves towards the ground) to be the barrier to block the ball from hitting the court. In many aspects, this skill is similar to passing, or bumping: overhand dig and bump are also used to distinguish between defensive actions taken with fingertips or with joined arms.

Some specific techniques are more common in digging than in passing. A player may sometimes perform a "dive", i.e., throw his or her body in the air with a forward movement in an attempt to save the ball, and land on his or her chest. When the player also slides his or her hand under a ball that is almost touching the court, this is called a "pancake". The pancake is frequently used in indoor volleyball. Besides being one of the best-known sports in the world, and being a favourite to millions of people, it is in the Olympics.

Positions

The positions in volleyball are separated into 6 areas, the first being Position 1 which is the back right side on the side that you are. Position 2 is on the right side of the court closest to the net, Position 3 is in the middle of the front part of the court right beside the net, Position 4 is on the left side of the court right beside the net, Position 5 is in the back left side of the court, and Position 6 is in the middle of the back of the court.

Court

The court is 60 by 30 feet (18 by 9 m). A net is stretched tightly in the middle. The height of the net is 7 feet 4 inches (2.24 m) for middle and high schools and college women, 7, 11 feet (2.43 m) for college men.

The game

The objective of the game is to legally return the ball over the net in such a manner that the opponent's team cannot make a legal return. The main causes of illegal plays are: holding, carrying, or lifting with the palm of the hands, four touches on one side, and two consecutive touches by one player. A regulation game is played with six players on the court. They are to rotate to serve in a clockwise direction when facing the net. The server will come from the right front position, serve, then play the right back position.

Scoring

Rally scoring is used in volleyball, which means a point will be awarded to one of the two teams when a rally ends or a mistake is made. A regulation game is played to 25 points and the winners must be ahead by 2 points. A middle and high school game is played best out of three games. If the games are tied at 1-1, the 3rd game is played to 15 points and the winners must be ahead by 2 points.

Skills

Serving

May be underhand or overhand. If the serve touches the net and goes to the opponent's side, it must be played. The server is not allowed to step on or over the end line when serving. In class, the server must say the score before serving.

Float

Similar to a knuckle ball in baseball, the server stands flat footed and contacts the ball with a stiff wrist and does not swing through after contact. This causes no spin to be on the ball, allowing it to catch any air current and causes the ball to change directional course throughout the whole air course.

Top spin

This serve is executed by snapping hard on the ball during contact. This puts a forward spin on the ball, which causes it to drop faster than a float.

Jump serve

A jump serve is used to assist the server get more height. By jumping they have a better angle to put the ball down into the court, and are less likely to be underneath the ball. This can be a float or topspin ball depending on the contact, arm swing, and approach.

Pass or bump (Underarm pass)

This is a pass used when the ball approaches a player below their shoulders. You are to hold your fingers together, elbows straight, and contact the ball with the forearms with shoulders facing the net on impact. Defined as a dig when passing a hard driven hit. Also pancaking is a form of passing. This is when the player has sprawled out to the floor in a last hope type of decision for the ball to land on their hand and it pop straight up.

Set or volley: Overhead pass direct the ball to a place specifically. Hands high, flex wrist, contact the ball with the finger pads, and elbows bent. Use your legs and arms to project the ball into the air.

Hit

A hard hit ball from a height above the net, straight to the opponent's side. Contact the ball with the cupped fingers and a long arm swing.

Block

(Defensive hit) Two hands above the head, jumping with arms reaching for a ball that has been spiked. A block is used to prevent a volley from crossing the net.

Dig

Digging is the ability to prevent the ball from touching one's court after a spike or attack, particularly a ball that is nearly touching the ground.

Statement of problem

To find out the Physical fitness among Handball and Volleyball players of Meerut District.

Sample

For the present study 15 Male Handball and 15 Male Volleyball players were taken for the study of Meerut District those who have participated in different level of tournaments between the age group of 19 to 21 Years.

Tool

To measure the Physical fitness the AAPHER Youth fitness test are used for the study.

Procedure of data collection

The AAPHER Youth Fitness Test consisting of 6 items i.e., pull-ups, sit-ups, standing broad jump, shuttle run, 50 Yard Dash and 600 Yard Run/walk were used for study. Before administering the tests all the subjects were oriented to the test in procedure and the objectives of the test.

Results and Discussion

In Table 1 it was found Volleyball players are good in 50 Yard Dash, 600 Yard Run, Shuttle Run and sit-ups and Volleyball players are good in Standing Broad Jump and Pull ups.

Table 1: It was found Volleyball players are good in 50 Yard Dash, 600 Yard Run, Shuttle Run and sit-ups and Volleyball players are good in Standing Broad Jump and Pull ups

Test items	Group	N	Mean	Std. deviation	Std. error mean	t	df	Sig. (2- tailed)
50 Y	Volleyball	15	8.01	0.23	0.07			
	Handball	15	8.29	0.45	0.14	-1.80	28.00	0.09
600 Yard	Volleyball	15	1.64	0.19	0.06			
	Handball	15	1.68	0.20	0.06	-0.36	28.00	0.72
SBJ	Volleyball	15	2.15	0.11	0.04			
	Handball	15	2.24	0.05	0.02	3.62	28.00	0.00
Pull Ups	Volleyball	15	8.00	0.94	0.30			
	Handball	15	12.20	1.14	0.36	-4.71	28.00	0.00
Shuttle Run	Volleyball	15	14.10	1.20	0.37			
	Handball	15	15.48	0.56	0.17	2.53	28.00	0.02
Sit Ups	Volleyball	15	26.40	2.63	0.83			
	Handball	15	20.80	2.92	0.92	4.35	28.00	0.00

Conclusion

It is concluded that Volleyball players are having good physical fitness compare to Handball players.

Recommendations

It is recommended that Volleyball and Handball players must be given Physical fitness training in the ground to achieve the good physical fitness. Similar Studies can be conducted on females and also other sports and games

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