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A study on selected anthropometric measurements and performance of badminton players of Mangalore University

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Abstract

Peoples are starts participating in physical activity and sports without proper guidance. Every individual have their own interest, capacity, capability and potentiality. It was thus sheer chance that his choice of the sport may be suitable to his inherent capabilities and acquired potentialities. It will be one of the most important factors that can help in raising the standard of the game. This study may be helpful in selecting the players for the team game, where demand of anthropometry for screening, assessing the players, and also helpful to evolve a sound training programme on scientific basis. Anthropometric measurements are non-invasive quantitative measurements of the body. The purpose of this study is to know the "Anthropometric measurements and performance of Badminton players of Mangalore University". The study was restricted to Twenty (N=20) male Badminton players who are participated in Inter-collegiate Badminton tournament in the year 2022-23. The study was restricted to seven anthropometric variables viz., Height, Weight, Age, Palm length, Forearm length, Biceps (upper arm) length and Shoulder width. It was concluded that the average body Weight of the Badminton players of Mangalore University is 60 to 75 kgs. The average Height of the Badminton players is 160-175 cm. The average Age group of the players is between 21-23 years. The majority of players Palm length is between 18 to 18.9 inches, Elbow length is between 27-28 inches, Biceps length between 29-31 inches and the Shoulder width is between 41-43 inches. Palm length, Elbow length, Biceps length, Shoulder width are major factors and advantage for badminton players to perform well in the training period as well as competition. Height also one of the main factor to play good badminton in this present scenario.

Keywords: Anthropometric, badminton, palm length, forearm length, biceps length, shoulder width

1. Introduction

Sport pertains to any form of competitive physical activity or game that aims to use, maintain, or improve physical ability and skills while providing enjoyment to participants and, in some cases, entertainment to spectators. Sports can, through casual or organized participation, improve one's physical health. Hundreds of sports exist, from those between single contestants, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. In certain sports such as racing, many contestants may compete, simultaneously or consecutively, with one winner; in others, the contest is between two sides, each attempting to exceed the other. Some sports allow a "tie" or "draw", in which there is no single winner; others provide tie-breaking methods to ensure one winner and one loser. A number of contests may be arranged in a tournament producing a champion. Many sports leagues make an annual champion by arranging games in a regular sports season, followed in some cases by playoffs. It's no secret that physical activity is good for everyone and exercise can improve.

1. Cardiovascular health.
2. Lowers risk of heart disease, stroke, and diabetes.
3. Helps manage weight.
4. Reduced blood pressure.
5. Enhanced aerobic fitness.
6. Improved muscular strength and endurance.
7. Improved joint flexibility and range of motion.
8. Stress relief.
9. Lowers risk of certain types of cancer.

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10. Control cholesterol.
11. Ward off osteoporosis.
12. Strengthens immune system.
13. Improved sleep.
14. Mental health benefits.
15. Prolonged life.

1.1 Anthropometric measurement

Anthropometric measurements are non-invasive quantitative measurements of the body.

Anthropometry provides a valuable assessment of nutritional status in children and adults. Typically, they are used in the paediatric population to evaluate the general health status, nutritional adequacy, and the growth and developmental pattern of the child. Growth measurements and normal growth patterns are the gold standards by which clinicians assess the health and well-being of a child. Badminton is a popular sport in India. It is the second-most played sport in India after Cricket. Badminton in India is managed by the Badminton Association of India. Anthropometry is science that learning about human body construction which includes the human body developments from time to time and the dimensions of these body parts. Anthropometry measurements are the most basic and oldest thing in sport. From these measurements, we will understand the physical condition from their ideal body shape or body composition. The author a keen Badminton enthusiast was curious to learn that influence of anthropometric measurements to achieve optimum level of performance in competition hence motivated to undertake a research problem Anthropometric measurements and Performance of Badminton players of Mangalore University’.

1.2 Statement of the problem

The purpose of this study is to know the “Anthropometric measurements and performance of Badminton players of Mangalore University”.

1.3 Hypotheses

H₁: There was no significant relationship between Anthropometric variables and the skill performance of Badminton players.

1.4 Limitations

Diet of players, amount of sleep, resting in 24 hours and training period was considered as a limitation of the study. The level of physical fitness, mental status and not controlling possible use of doping is considered as another limitation.

1.5 Delimitations

The study was restricted to thirty (N=20) male Badminton players who are participated in Inter-collegiate Badminton tournament in the year 2022-23. The study was restricted to seven anthropometric variables viz., Height, Weight, Age, Palm length, Forearm length, Biceps (upper arm) length and Shoulder width.

1.6 Significance of the study

This study may be helpful in selecting the players for the team game under study, where demand of anthropometry for screening and assessing the players. This study may be helpful to evolve a sound training programme on scientific basis.

2. Reviews

A panoramic view of the reacted literature becomes necessary in order to have clear understanding about the problem and

also to get directions for the study. Sincere efforts were made by the researcher to locate the literature reacted to this study.

3. Methodology

The purpose of the present study was to investigate the selected anthropometric measurements and performance of Badminton players of Mangalore University.

3.1 Measuring height

Find a straight wall with no baseboard or unevenness to ensure accurate readings. Place the stadiometer against the wall on the floor. With one person holding the base of the height meter on the floor, raise the tape until the beginning (zero) appears in the window aligned with the red line. If necessary, use a chair or bench to reach the required height. Mark the screw hole spaces with a pencil.

3.2 Measuring weight

Used a digital scale. Placed the scale on firm flooring (such as tile or wood) rather than carpet. Have the teen remove shoes and heavy clothing, such as sweaters. Have the teen stand with both feet in the centre of the scale.

3.3 Measuring palm length

Measure from the top of your middle finger to the base of your palm. The base of your palm is the meaty part where your hand meets your wrist. Write down the measurement.

3.4 Measuring fore arm

Ensure the model of measurement is in sitting and upright position, Tighten the forearm forward. Turn the first knob on the upper arm gauges, then turn the third knob until it forms 90 degrees. Turn the second knob until the acrylic on the third knob reaches the fingertips. This measurement is known as forearm length in sitting position. So, we measured the distance between the elbow to the tip of the outer finger with the position of the upper arm straight down and forearm bent forward.

3.5 Measuring shoulder width

To measure your shoulders from arm-to-arm, an anthropometric would use big calipers to measure the breadth of your shoulders including your arms. To replicate this, stand facing a partner and use a measuring tape to get this measurement. Let your arms hang relaxed, down at your sides. Try to keep your posture as upright as possible but also still relaxed. Have the other person measure across you from the tops of your upper arms.

4. Data analysis

The purpose of the present study was to bring to know the “Study on selected anthropometric measurements and performance of Badminton players of Mangalore University”. The author conducted different types of tests and gathered data as described in Methodology. The gathered data were classified and interpreted. The same have been presented here.

Table 1: Body weight of the players

SL. No.	Weight in Kgs	No. of players
1	55-60	6
2	61-65	4
3	66-70	4
4	71-75	4
5	76-Above	2

The above Table 1 clearly indicates that body weight of the Badminton players. Here 6 players are having their body weight between 55 to 60 kgs, 4 players are 61 to 65 kgs, 4 players are 66 to 70 kgs, another 4 players are 71 to 75 kgs and only 2 players are having above 76 kgs of body weight.

Table 2: Height of the players

SL. No.	Height in centimeter	No of players
1	155-160	3
2	161-165	2
3	166-170	7
4	171-175	7
5	176-Above	1

The above Table 2 shows that height of the Badminton players, here 3 players are having height around 155 to 160 cm, 2 players are between 161 to 165 cm, 7 players are having 166 to 170 cm, 7 players are having 171 to 175 cm, and one player is having above 176 cm. The majority of players having their body Height between 166 to 175 cm. Height is one of the major factor and advantage for badminton players.

Table 3: Age group of the players

SL. No.	Age	No of players
1	18-20	3
2	21-23	12
3	24-25	5

The above Table 3 shows that Age group of the Badminton players. Here out of 20 players. 3 players are come under the age group of 18-20, 12 players are between 21-23 years, 5 players are between 24-25 years, majority of the players are between the age group of 21-23 years.

Table 4: Palm length of the players

SL. No.	Palm length in Inches	No of Players
1	16-17	2
2	17.1-17.9	1
3	18-18.9	11
4	19-19.9	5
5	20-Above	1

The above Table 4 shows that palm length of the Badminton players. Here 2 players are having 16 to 17 inches, one player is having 17.1 to 17.9 inches, 11 players are having 18 to 18.9 inches, 5 players are having 19 to 19.9 inches, and only one player is having the palm length above 20 inches. The majority of the players palm length between 18 to 18.9 inches.

Table 5: Elbow length of the players

SL. No.	Elbow length in inches	No of players
1	25-26	2
2	27-28	10
3	29-30	5
4	31-32	3

The above Table 5 shows that elbow length of the Badminton players. Here 2 players are having length around 25-26 inches, 10 players are having 27-28 inches, 5 players are having 29-30 inches and only 3 players are between 31-32 inches. The majority of players having their Elbow length between 27-28 inches.

Table 6: Biceps length of the players

SL. No.	Biceps length in inches	No of players
1	23-25	1
2	26-28	4
3	29-31	9
4	32-34	6

The above table No-6 clearly shows that Biceps length of Badminton players. Here 1 player is having Biceps length between 23-25 inches, 4 players are having 26-28 inches, 9 players are having 29-31 inches and 6 players are having 32-34 inches. The majority of the players are having their Biceps length between 29-31 inches.

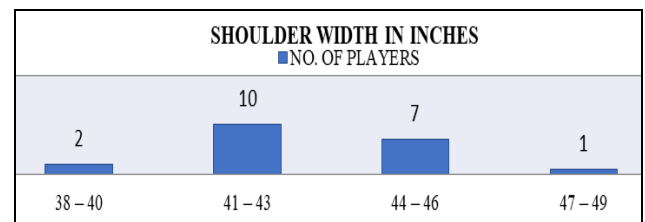


Fig 1: Shoulder width of the players

The above figure clearly shows that Shoulder width of Badminton player. Here 2 players are having their Shoulder width around 38-40 inches, 10 players are 41-43 inches, 7 players are 44-46 inches, and only one player is 47-49 inches, the majority of players having their shoulder width between 41-43 inches.

5. Conclusions

It was concluded that after the study we found that the average body Weight of the Badminton players is 60 to 75 kgs. The average Height of the players is 160-175 cm. The average age group of the players is between 21-23 years. The majority of the players palm length is between 18 to 18.9 inches and the players having their elbow length between 27-28 inches. The majority of the players are having their biceps length between 29-31 inches. The majority of players are having their shoulder width between 41-43 inches. Palm length, Elbow length, Biceps length, Shoulder width is major factor and advantage for Badminton players to perform well in the training period. Height is also one of the major factors to play Badminton game.

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