

## ANTHROPOMETRIC MEASUREMENTS ASPREDUCTRIS OF PLAYING ABILITY OF BALL-BADMINTON PLAYERS



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**Ball Badminton:** Ball-badminton is a game of Indian origin. It is popularly in the south Indian states. It is popularly as cricket there. In olden times, it was a royal game and played by the members of the royal family of the Maharajas of Tanjore in Tamil Nadu on festive occasions and other times of recreation. The game is referred in the royal manuscripts, but there is no reference to the nature or the rules of the games. It is a racquet game. Unlike badminton, Tennis or Lawn Tennis which are played with single or double players, ball-badminton is a team game with two or five players in each team.

### ANTHROPOMETRY:

Ancient Indian and Egyptian physicians used to measure human bodies for medical purpose. Hippocrates, the father of Medicine Branch first made use of anthropometry in his therapeutic method. As a branch of Physical Education, Anthropometry came into being when the American doctor and physical educator, Dr. Edward Hitchcock first measured the physique of his physical education students to evaluate their physical growth in 1861. Thus, Anthropometry was introduced to the field of Physical Education which was later on introduced in all the educational institute of U.S.A. later on.<sup>1</sup>

**Definition of Anthropometry:** Anthropometry means measurement of human body. The word Anthropometry is derived from 'anthropose' meaning-man and 'metry' meaning measurement.<sup>2</sup>

**Reviews:** In the field of Physical Education and Sports, anthropometry is very important since there is considerable effect of anthropometric composition of players and their sports performance. This been verified through research by many researchers. Female international handball players differ in some respects in their anthropometric characteristics according to their country of origin (Hassan A. A., Reilly T, Cable N.T., & Ramadan J., 2007)<sup>3</sup>., There is a significant and positive correlation between anthropometric measurements like age, weight, height, sitting height, back length, leg length, upper arm length, thigh length, calf length, leg length etc. besides many other parameters and the explosive arm strength of the volleyball players (Chouhan M.S. & Chouhan D.S., 2004)<sup>4</sup>. There is a significant and positive correlation between selected anthropometric

measurements like weight, height, leg length, arm length and breadth and the physiological parameters like speed, arm strength, power endurance, etc. with handball sports performance, (P. Gopinathan & Grace Helena, 2008)<sup>5</sup>. Different sports could constitute different effect on hand anthropometric measurements and grip strength. (CagatayBarut, Pinar Demirel and SibelKiram, 2008)<sup>6</sup>. A significant and positive correlation exists between selected anthropometric variables like general measurements, circumference, bodily diameter, and skinfolds etc. and the explosive leg strength; and the equation that is born is very much important. (Chouhan M.S. & Ramchander, 2009)<sup>7</sup>.

### **STATEMENT OF THE PROBLEM:**

In the present investigation, the research scholar has selected twelve anthropometric parameters and tried to find out their correlation with playing ability of the ball-badminton players Gondwana University, Gadchiroli.

### **SIGNIFICANCE OF THE STUDY:**

The study will help to point out the relation between anthropometric measurements and their relation to playing ability of ball badminton players. It will also help the coaches & trainers of Ball badminton in their planning of physical activities for the players so as to improve and enhance the playing ability. It will help to popularize the importance and utility of anthropometry to the game of ball badminton in the field of physical Education. It will also help in encouraging research to ball badminton and anthropometry and playing ability amongst coaches of the game to improve the playing ability of their players.

### **PURPOSE OF THE STUDY:**

The purpose of the study was to find out and study the correlation between the selected anthropometric measurements and playing ability of the ball-badminton players of Gondwana University Gadchiroli.

### **HYPOTHESIS:**

It was hypothesized that there is a correlation between the selected anthropometric measurements and playing ability of the ball-badminton players of Gondwana University, Gadchiroli.

### **LIMITATION:**

The present study was restricted to 40 boy students in the age group of 22 to 25 years studying for UG and PG students in various colleges of Gondwana University, Gadchiroli during the academic session 2014-2015. The study was restricted to Gondwana University, Gadchiroli jurisdiction only. Only twelve anthropometric variables were measured and evaluated.

### **METHODOLOGY:**

The present investigation was carried out on 40 boys-students in the age group of 22-25 years studying for UG and PG students in various college of Gondwana Universities, Gadchiroli during the session 2014-2015.

Subjects were selected by the already participated in inter collegiate ball-badminton matches and they regularly played ball-badminton. They had come to the Godwana University playground to give selection tests to participate in the 2014-2015 inter-University Ball-badminton Matches.

### PROCEDURE OF DATA COLLECTION:

#### *Anthropometric Measurement:*

**(Primary Data)** : The Primary data was collected by the research himself by taking the anthropometric measurement of the subject like body weight, body height, Chest, upper arm length, upper arm circumference, fore arm length and fore-arm circumference, calf length and circumference, thigh length and circumference, and abdominal circumference. Weight was measured by foot platform weighing machine, Height was measured with a stadiometer, and the other remaining variables were measured with a non-stretchable steel tape. It was assured before starting the measurements that all the tools are in good working condition and not damaged. The subject were given information regarding the measurements, equipment and the research and only those willing to participated were administered the measurement.

**Measurement of Playing Ability** : The Ball-badminton playing ability was measured through individual judgments and observations of the players while playing by their expert coaches and guided in the field of physical Education – High Service, simple Service, Blocking, Spin Shot, Return etc.

### ANALYSIS OF DATA AND INTERPRETATION OF THE RESULT:-

The data was analyzed with the help of statistical tools like mean, standard deviation and the correlation was drawn with the help of Pearson Product Moment Correlation method<sup>8</sup>.

**Table** = showing the correlation between select anthropometric measurements and Playing Ability of ball-badminton players of Gondwana University, Gadchiroli.

Sr. No.	Variable Correlated	Co-efficient of Correlation
01	Body weight And Playing Ability	0.08*
02	Body height And Playing Ability	-0.01*
03	Chest And Playing Ability	0.14*
04	U. Arm Length And Playing Ability	0.27*
05	U. Arm Circumference And Playing Ability	0.14*
06	Fore Arm length And Playing Ability	0.02*
07	Fore Arm Circumference And Playing Ability	0.33*
08	Thigh Length And Playing Ability	0.15*

<b>09</b>	Thigh Circumference And Playing Ability	<b>-0.004*</b>
<b>10</b>	Calf Length And Playing Ability	<b>-0.29*</b>
<b>11</b>	Calf Circumference And Playing Ability	<b>-0.02*</b>
<b>12</b>	Abdominal Circumference And Playing Ability	<b>-0.18*</b>

(\*Significant at 0.05 level

'r' 0.05 (38) = 0.325)

### DISCUSSION OF FINDINGS:

It was found out that anthropometric variables like body height, chest, thigh length and thigh circumference, calf length, calf circumference, Upper Arm Length and abdominal circumference had negative correlation with sports performance and the result was found to be insignificant; weight, Upper arm Circumference, and, Fore arm circumference, Fore Arm Length had positive correlation with sports performance and the result was found to be significant for fore arm circumference.

### CONCLUSION AND RECOMMENDATIONS:

It was concluded that anthropometric variables like body height, chest and Upper Arm Length had no significant effect on the sports performance of the ball-badminton players; whereas the anthropometric variables like body weight, Upper Circumference, Fore Arm Length and Fore Arm Circumference (0.33) had very little or insignificant correlation with the sports performance of the ball-badminton players. In that, the players with well built fore-arm circumference can play ball-badminton very well. Similar research is recommended for various games, for various age-groups and gender, sedentary and non-sedentary groups so as to get enough information and plan physical activities accordingly in the future for betterment of human beings through Physical Education.

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