

# COMPARISON OF PARTICULAR ANTHROPOMETRIC AND FITNESS VARIABLES OF BADMINTON AND HANDBALL PLAYERS, MANIPUR

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## **Abstract**

Aim of the study was to compare the particular anthropometric and fitness variables of badminton and handball players, Manipur of 60/60 male players ranged from 18 to 22 years. The data was analysed by descriptive statistics and t-test. t-test values on Weight test between anthropometric variables of badminton and handball players was significant and t-test value between fitness variables of badminton and handball players on Sit-up highlighted the significant.

**Keywords: Anthropometric, Fitness, Badminton, Handball**

## **I. INTRODUCTION**

Recognizing true talents for a particular sport is very complex process and requires good knowledge of the anthropometric and physiological characteristic that are relevant for top performance in the particular sport. Anthropometric characteristic of handball players have been suggested to be a biomarker in determining the athletic potential of an individual. In general, more successful teams are taller and have less body fat than less successful teams compared the anthropometric profile of England handball player with Asian ones from different countries.

The world of games and sports has crossed many milestones, as a result of different achievements in general and their application in the field of sport in particular. Scientific investigations into performance role attain excellence of performance in different sports. Now the sportsman have been able to give outstanding performance because of involvement of new scientifically substantiated training methods and means of execution of sports exercise such as sports techniques and tactics, improvement of sport grass, and equipment, as well as other components and condition of the system of sports training. The sports scientists and coaches are demanding full time involvement and round the year dedicated practise of sports to reach the pinnacle of their performance. The international community of sports lovers is also curiously looking for better and superb performance of sportsman and women in their respective fields.

### **1.1 Statement of the Problem**

The statement of the study was "Comparison of particular anthropometric and fitness variables of badminton and handball players".

### **1.2 Significance of the Study**

1. The result of the study may help for skill development purpose.
2. The result of the study may be useful to improve the player skill, related performance in badminton and handball players.
3. It is expected that the study may help the coaches to locate the dominant skills to be taught in the beginners.
4. The finding of this study may the knowledge with regards to the specific skill in player's performance.
5. The findings of the study would add the knowledge in the, of sport physiology, sports psychology and training method.

### **1.3 Delimitations**

1. The study was delimitation to 20 each male players of both badminton and handball players of Manipur.
2. The subjects were randomly selected from regular match practice group.

3. The age of the subjects was ranges from 18 to 22 years.
4. The study was delimited to 20 male subjects each of two groups.

#### 1.4 Limitations

1. Dietary of the subjects was unknown.
2. The player's performance was not considered for the study.
3. The family, educational and coaching background of the subject were unknown.
4. The research scholar has no control over the climatic conditions and other synchronizer or stimulus.
5. A regular practice of the Badminton and Handball activity of the subject was considered as the limitation of the study.

## II. METHODOLOGY

The present study was the detailed Methodology of research design. 60/60 male players ranged from 18 to 22 years from the Handball association and Badminton of Manipur associations were chosen. Stratified random sampling techniques was employed according to the timetable of the sample colleges, the schedule of data collection was planned in such a way that it did not disturb day-to-day routine work of the Association by administering the anthropometric measurement and fitness variables test. Statically tool used for accurate and systematic result. Descriptive analysis was obtained from Mean, Standard Deviation, t-test using SPSS Software to compare the variables to know the relationship between comparison of particular anthropometric and fitness variables of badminton and handball players.

### 2.1 Anthropometric Tests

*Standing height:* To measure height

*Weight test:* To measure weight

*Thigh girth:* To measure thigh circumference

*Calf girth:* To measure calf circumference

### 2.2 Skill Related Physical Fitness Tests

*Endurance:* It was measured through bent knees sit-ups.

*Agility:* It was measured through shuttle run (4x10m).

*Flexibility:* It was measured through bridge up test and shoulder and wrist elevation test.

*Arm strength:* It was measured through medicine ball throw.

*Leg strength:* It was measured through vertical jump.

## III. RESULTS

The comparisons of the study between particular anthropometric and fitness variables of badminton and handball players of Manipur were highlighted in the figure 1 and table 1. The mean difference of anthropometric and fitness variables of badminton and handball players of Manipur were highlighted on figure 1.

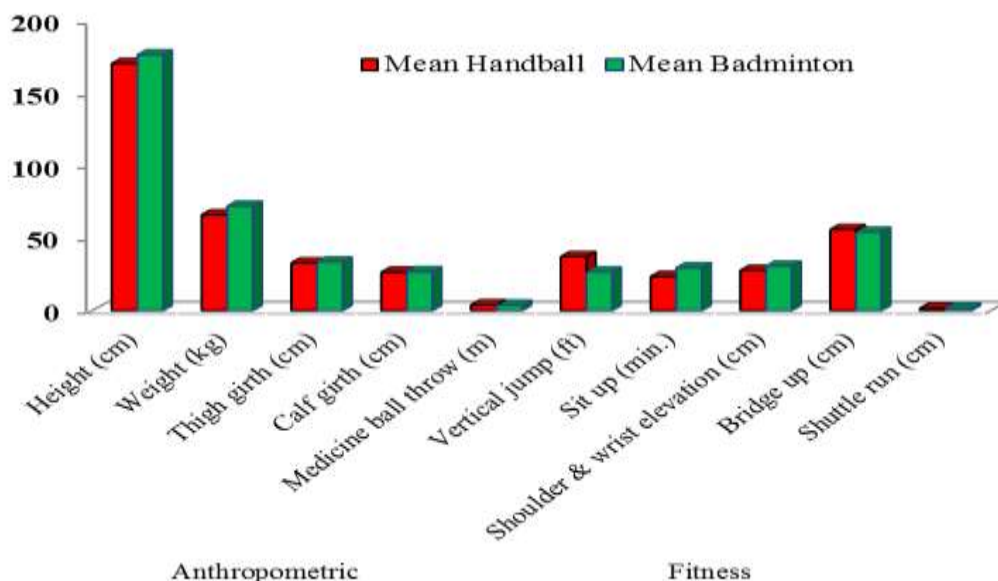
From the table 1 shown that the mean and standard deviation of anthropometric variables of badminton and handball players of Manipur on Standing height, Weight test, Thigh girth and Calf girth were  $170 \pm 4.74$  and  $175.93 \pm 2.58$ ;  $65.8 \pm 3.93$  and  $71.8 \pm 3.0$ ;  $32.73 \pm 2.36$  and  $33.4 \pm 2.03$ ;  $26.27 \pm 1.44$  and  $26.67 \pm 2.47$  respectively.

Again it highlighted the mean and standard deviation of fitness variables of badminton and handball players of Manipur on Medicine ball throw, Vertical jump, Sit-up, Shoulder & wrist elevation, Bridge up and Shuttle run were found to be  $3.81 \pm 0.18$  and  $3.67 \pm 0.17$ ;  $37.07 \pm 2.02$  and  $26.53 \pm 2.3$ ;  $23.33 \pm 4.7$  and  $29.33 \pm 1.8$ ;  $27.6 \pm 4.56$  and  $30.53 \pm 1.13$ ;  $55.73 \pm 4.61$  and  $53.87 \pm 4.17$ ;  $1.52 \pm 0.12$  and  $1.6 \pm 0.102$  respectively.

The t-test of anthropometric variables of badminton and handball players of Manipur on Standing height (0.0003), Thigh girth (0.44) and Calf girth (0.59) were less than the tabulated value at 5% level of significant. Thus there were no differences of anthropometric variables of badminton and handball players of Manipur. Whereas t-test values on Weight test (6.36), anthropometric variables of badminton and handball players was high than the calculated value and thus significant.

The t-test of fitness variables of badminton and handball players of Manipur on Medicine ball throw (0.051), Vertical jump (1.15), Shoulder & wrist elevation (0.025), Bridge up (0.254) and Shuttle run (0.064) were less than the tabulated value at 5% level of significant and resulted that there were insignificant. Whereas t-test value of fitness

variables of badminton and handball players on Sit-up (7.9) found to high than the tabulated value and highlighted the significant.



**Figure 1:** Comparison of Mean difference of particular anthropometric and fitness variables of badminton and handball players of Manipur.

**Table 1:** Comparison of particular anthropometric and fitness variables of badminton and handball players of Manipur

Players	Test Items	Mean ± standard deviation		t-test
		Handball	Badminton	
Anthropometric	Height (cm)	170 ± 4.74	175.93 ± 2.58	0.0003
	Weight (kg)	65.8 ± 3.93	71.8 ± 3.01	6.36
	Thigh girth (cm)	32.73 ± 2.36	33.4 ± 2.03	0.44
	Calf girth (cm)	26.27 ± 1.44	26.67 ± 2.47	0.59
Fitness	Medicine ball throw (m)	3.81 ± 0.18	3.67 ± 0.17	0.051
	Vertical jump (ft)	37.07 ± 2.02	26.53 ± 2.3	1.15
	Sit up (min.)	23.33 ± 4.7	29.33 ± 1.8	7.9
	Shoulder & wrist elevation (cm)	27.6 ± 4.56	30.53 ± 1.13	0.025
	Bridge up (cm)	55.73 ± 4.61	53.87 ± 4.17	0.254
	Shuttle run (cm)	1.52 ± 0.12	1.6 ± 0.102	0.064

\*Significant at 0.05 level

**IV. RECOMMENDATIONS**

On the basis of the results obtained from this study, the following recommendations are made:

1. It is recommended that the Comparative study of selected, Anthropometric & fitness variables of Badminton and Handball players, Study Program is also one of the effective evaluation mean for the sports person.
2. It is also recommended that a similar study may be repeated by selecting subjects to different age, sex and level of achievement other than those employed in the present study.
3. Similar studies may be undertaken with using separate subject activation (all games) except Badminton and Handball.
4. To make the study more authentic and valid, the study may be repeated larger samples.

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