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## Body mass index of selected games in west zone schools of Delhi: A comparative study

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### Abstract

The present study intended to investigate the body mass index in selected games of West Delhi Zone schools. The aim of the study was to find the comparison of body mass index of players of selected games. For this investigation the study includes 60 female school games players who have represented their school at zonal levels which were randomly selected as sample for the study. All samples were selected from west zone schools and the selected games for the study were Taekwondo, Judo and Baseball. The age of the subjects were ranged between 14 - 18 years. The data was analyzed by Analysis of variance (One way ANOVA) test in order to determine the difference of body mass index between selected players of different games, if there were significant difference was found than the LSD post-hoc test was used to analyze the mean difference and their significance. For testing the hypothesis the level of significance was set at 0.05. The results had shown a significant difference between various selected players in their body mass index at Zonal Level.

**Keywords:** Body Mass Index, Taekwondo, Baseball, Judo, etc.

### Introduction

Sports is a complex process and it consists of different types of activities and skills which require different motor components in different proportion and due to the scientific approach in games and sports, BMI is one of the most contributing factor in performance. The relationship between sport participation and BMI in children and adolescents is unclear, with some studies showing no association at all and others suggesting that sport is linked to lower BMI. In games and sports BMI plays a major role. BMI provides a simple numeric measure of a person's thickness or thinness, allowing health professionals to discuss weight problems more objectively with their patients. BMI was designed to be used as a simple means of classifying average sedentary (physically inactive) populations, with an average body composition. When a sportsman spend long hours in training pay off with low body fat and toned sculpted muscles, he feel pretty good about himself. That is, until he assesses his body mass index, or BMI. For athletes and fitness enthusiasts, BMI can categorize as overweight or obese, even though he is in better shape and have lower body fat than his non-athletic friends. Therefore the researcher realized to investigate this study. "A Study of Body Mass Index in Selected Games: A Comparison"

### Procedure & Methodology

#### Selection of Sample

For the study 60 female students of various West Zone Schools were randomly selected. The students belongs to selected games I.e. Taekwondo, Baseball, Judo. The age of the subjects ranging between 14 to 18 years.

#### Various Selected Games

- Taekwondo
- Baseball
- Judo

#### BMI Calculation

For measuring the body mass index we measure weight in kg by height in meter square

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**Body Mass Index =**  $\frac{\text{Weight in kg}}{\text{Height in meter square}}$

**Statistical Technique**

In order to compare the BMI of selected game players of different games, one way ANOVA was used. If significant difference were found, LSD post-hoc test was used in order to determine the mean difference and their significance. The level of significance was set at 0.05.

**Table 1:** Anova Table: Body Mass Index of Various Games Of West Zone Schools

	Sum of square	DF	square	F	Significance
Between groups	93.45	2	46.73	8.07	0.001
Within Groups	330.24	57	5.79		
Total	423.69	59			

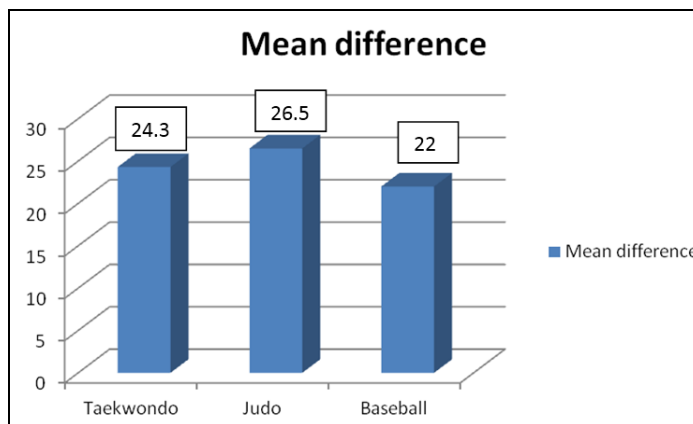
As evident from table-1 reveals that there were significant difference found in body mass index between Taekwondo, Baseball, and Judo game players. The F value in table 1 was significant as its p-value is 0.001 which is less than 0.05. Thus the null hypothesis of no difference among the means of three groups for example Taekwondo Baseball and judo might be rejected at 5 %level. Since F- Value was significant,

comparison needs to be done.

**Table 2:** Mean Difference of Body Mass Index between Different Game Players

Grouping variables		Mean difference	Std. error	Sig (P)
Taekwondo	Judo	3.09*	.78	.000
	Baseball	1.11	.78	.148
Baseball	Taekwondo	1.11	.78	.148
	Judo	1.92*	.78	.012
Judo	Taekwondo	3.09*	.78	.000
	Base ball	1.92*	.78	.012

SPSS output shown table (2) proves such comparison. It could be shown that the difference between judo and baseball was significant as the p value for the mean difference is 0.012 which was less than 0.05. Similarly, the means difference between the judo and taekwondo was also significant as the p-value for the difference was 0.00 which was also less than 0.05, however but there were no difference between the baseball and judo as p value is 0.148. The mean value clearly shows that taekwondo game players had a high body mass index in comparison to judo and baseball games players. The estimated mean value of the student's body mass index was illustrated below in



**Fig 1:** Mean difference in body mass index between Judo, taekwondo and baseball game players

**Discussion and Findings**

The significant role of judo and taekwondo was in relation to the BMI or Body composition somatotypes. As the morphological characteristics of players are of interest to the human biologist and it is therefore reasonable to expect to find in athletes demonstration of the relationship of structure and function. As physique is measured by various procedures. Surface dimension, body height and weight and dimensions of body segments are measured by body mass index. The study of body composition involves a variety of methods i.e. X ray, densitometry, hydrometry and skin fold thickness among others but they do not evaluate total body form Carter J.E Lindsey. A technique attempting the latter was described by Sheldon *et al.* (1940, 1954) who called it somatotyping. Hence the finding of the study showed that there was significant difference in the obtained value of body mass index between different games players. Body mass index of judo games players were significantly more than the other two games but there was not much significant difference was found between taekwondo and baseball games players in body mass index.

**Conclusion**

To conclude, it might be interpreted that the above result shown the significant difference among the players of Judo, Baseball and Taekwondo. It can also be concluded that judokas have the more body mass index whereas baseball players has the least body mass index value among the group. On that basis we can also say that baseball players had less fat ratio in comparison to other game players.

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