



To Assess Correlation Between Anthropometric Measurements And Dietary Habits Among State And National Players

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Abstract

The purpose of this study to assess correlation between Anthropometric measurements and dietary habits among state and National Players. The cross-sectional study was conducted at Netaji subhas institute of sports, Patiala and Punjabi University, Patiala from January to February 2019. A total number of 198 Players, 70 male Players and 29 female Players belongs to National Level and 70 male players and 29 females Players from State Level Players. Dietary habits and water consumption of the players were also assessed. The collected data was coded than calculate mean, standard deviation. The mean height of the subjects was $169.4\text{cm} \pm 3.0\text{ cm}$ and $175\text{cm} \pm 12.3\text{cm}$ for state players & national players respectively. The mean weight of the state players was $70.4\text{kg} \pm 11.9\text{kg}$ and $73.2\text{Kg} \pm 13.6\text{Kg}$ for National Players. The results about BMI show that 63% Players fall under the normal category. 84% players were under the Low category of WHR. The overall score depicts that the majority of players belong to normal BMI and low WHR as well as consume a non- vegetarian diet.

Keywords: -Body Mass Index, Waist Hip Ratio, Anthropometry, Dietary habits

Introduction

Body mass index (BMI) is a common, inexpensive and simple method to categorize individuals as underweight, normal weight, overweight, obese I and obese II. However, this method does not reflect body shape and fat distribution. Waist to hip ratio (WHR) is a more recent and accurate method to measure body fat distribution and can be used routinely. (Saeid et al., 2016) Obesity is the condition of excessive fat deposition in the body and is further classified as abdominal obesity (around the waist and trunk) or gynoid obesity (peripherally deposited fat) (Chan et al., 2003; Per, 2001; Ofei, 2005; Kelly, 2006; Martinez, 2000; Hu, 2008). Body mass index (BMI), waist to hip ratio (WHR), fat distribution, skinfold thickness, densitometry and bio-impedance are some of the methods available to measure obesity and body fat (Chan et al., 2003; Hu, 2008). BMI and waist to hip ratio are among the most popular methods to measure obesity due to their simplicity, ease of execution and low cost (Chan et al., 2003; Hu, 2008).

Body Mass Index is not only an index or measurements of general health status. BMI is a summary measure of an individual's height and weight, calculated by dividing a person's weight in kilograms by the square of their height in meters. BMI is the most commonly used measure for monitoring the prevalence of overweight and obesity in players.

Waist Hip Ratio is another way to assess abdominal fat. To calculate waist hip ratio to know about waist circumference and hip circumference. WHR is a more accurate

measure of distribution of body fat (abdominal fat) although it is less commonly used (Brown, 2009). It can be used to classify body types into two main categories: Apple and pear. Apple shaped body type is more common among men and is caused by abdominal obesity. Women usually accumulate fat around the hip and the thighs to develop a pear-shaped body type (Ashwell, 2009).

The purpose of the present study was to assess the correlation between Anthropometric measurements (Body Mass index and Waist Hip Ratio) and dietary habits among state and national level players.

Material and Methods: -

The subjects were belonging to state and national level. This study was conducted out in the Punjabi university Patiala and Netaji Subhas National Institute of Sports, Patiala. The players of state and national levels male and female were involved in the study. The data was collected of total 198 players. The data of the sample consisted of 99 State level Players and

99 national level players. Anthropometric Measurements like Height and weight were recorded with anthropometric Rod and Weighing Scale and BMI (Body mass index) and Waist Hip Ratio was calculated.

Statistical analysis: -

The complete questionnaires were numerically coded and frequency was calculated using the Statistical procedure. In present study Arithmetic mean, Standard deviation were used to compare the data. The results for categorical variables are presented as N (%).

Results and Discussion: -

The mean age of National level players was 26 ± 2.1 years and State level players was 21 ± 2.1 years. Height and Weight was recorded and BMI (Body Mass Index) calculated. The mean height of the national level player was $1.75 \text{cm} \pm 0.12 \text{cm}$ and weight of the national players was $73 \text{kg} \pm 3.6 \text{kg}$. The mean height of the state level player was $1.69 \text{cm} \pm 0.09 \text{cm}$ and the weight of the state players was $70 \text{kg} \pm 11 \text{kg}$.

Table 1: - Body Mass Index (BMI) of the subjects

BMI	BMI (Asians)	State N=99(%)		National N=99(%)		Total N=198 (%)	
		Males	Females	Males	Females	Males	Females
Underweight	<18.5	0(0)	2(6.8)	0(0)	1(3.44)	0(0)	3(1.5)
Normal	18.5-24.9	40(57.14)	21(72.4)	42(60.8)	24(82.7)	82(41.4)	45(22.7)
Overweight	25.0-29.9	27(38.5)	4(13.7)	27(39.13)	4(13.7)	54(27.2)	8(4.04)
Obese1	>30	3(4.2)	2(6.8)	1(1.44)	0(0)	4(2.02)	2(1.01)

Table 1 shows the BMI Classification according to WHO. It revealed that 31% of the total players fall under the “overweight” Category. Only 1.5% and 3% players fall under obese and underweight category respectively.

Table 2: - Waist Hip Ratio (WHR) of the subjects

WHR	State n=99(%)		National n=99(%)		Total n=198 (%)	
	Males	Females	Males	Females	Males	Females
Low	70(100)	17(58.6)	63(91.3)	18(62.0)	133(67.1)	35(17.6)
Moderate	0(0)	8(27.5)	4(5.7)	5(17.2)	4(2.0)	13(6.5)
High	0(0)	4(13.7)	3(4.3)	6(20.6)	3(1.5)	10(5.0)

Table 2 shows the WHR classification according to WHO. It illustrates that 85% of the total players are under the low category. Only 8% and 6% players fall under the moderate and high category respectively.

Table3: - Dietary Habits

Dietary Habits	State N=99(%)		National N=99(%)		Total N=198 (%)	
	Males	Females	Males	Females	Males	Females
Vegetarian	14(20)	11(37.9)	11(15.9)	10(34.4)	25(19.5)	21(10.6)
Non veg	50(71.4)	15(51.7)	50(72.4)	14(48.2)	100(50.5)	29(14.6)
Ova veg	6(8.5)	2(6.8)	2(2.8)	4(13.7)	8(4.0)	6(3.0)
Pesco veg	0(0)	1(3.4)	7(10.1)	1(3.44)	7(3.5)	2(1.0)

Table 3 shows the dietary habits about the players. Majority of players 65% total players consume non vegetarian food but 29% of total subjects take vegetarian food. Only 7% and 4% players consume ova-vegetarian and pesco-vegetarian food.

Discussion: -

In present study we have examined correlation between BMI and WHR and dietary habits among national and state players. Majority of the subjects (national and state level players) were under the Normal category of BMI and low abdominal fat. Majority of respondents consumed non- vegetarian food.

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