Assessment of BMI values and their food preferences of Sports Individual in Allahabad District

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Abstract: **Body Mass Index is the most appropriate simple indicator by which weight-for height can be related to health outcome. WHO therefore proposed the use of BMI to monitor both under nutrition and overweight in population. The purpose of this study was to examine the relationship between body mass index (BMI) and physical fitness and to assess the food preference and food choices of the sports person before and after competitions. Two hundred sports persons (18-26years) were selected through the random sampling method from two different universities situated in Allahabad district, Uttar Pradesh. Sports person's nutritional status was assessed by gathering information on the Anthropometry, Food preference and food choices. Pretested schedule was used in order to collect data from the sports person. The collected data were statistically analyzed. The results of the anthropometric measurement showed that majority (40.5 percent) of the selected sportspersons were normal BMI (20.0-23.0) and sport individual's food preference behavior is associated with various personal and environmental factors.**

Keywords: **BMI, Food preference, Physical Fitness, Sport person, Anthropometric measurement.**

Introduction:

BMI is an indicator of total body fat and is therefore an indicator of health risk. BMI is used by healthcare professionals to screen for overweight and obese individuals. Body mass index (BMI) is a measure of body fat based on your weight in relation to your height, and applies to most adult men and women aged 20 and over, For children aged 2 and over, BMI percentile is the best assessment of body fat (**Kamalaja and Deepika, 2015**). BMI, which is calculated as weight (kg) divided by height squared (m2), was chosen as a simple measurement of body weight in relation to height. While increases in both body fat and lean tissue cause increments in BMI, relationships between body weight and health are conventionally expressed in terms of BMI rather than body fat (**Zimmet, 2006**). Food choice is the subject of research in nutrition, food science, psychology, anthropology, sociology, and other branches of the natural and social sciences. Nutrition plays a very important role in attaining high level of achievements in sports. Nutritional status has a direct bearing on the level of physical performance. Hence, physical fitness and training are very much dependent on nutritional status of sports personnel. Nutrition is an important complement of any physical fitness program (**Nazni and Vimala, 2010**).

Materials and Methods:

A cross-sectional and descriptive design was used in this study among population of sports persons belongs to Allahabad district. Sam Higginbottom University of Agriculture, Technology and Sciences, University of Allahabad, were selected for the study. The students who are performing in trials during different sports competitions were selected as a population of the study. The selection of the respondents was based on the random sampling from the population of the study. Total number of 200 respondents were selected i.e. 100 respondents from each university was selected including both male and female for study purpose. Pretested schedule was used in order to collect data from the respondents. The schedule was including aspects which were lead to the fulfilment of the objective of this study. The selected respondents were personally interviewed with the help of schedule that contained questions related to food-choice questionnaire was administered to assess the various food choices, food fads among Sports individual in Allahabad District Uttar Pradesh. An anthropometric measurement was used to calculate BMI values. The data were tabulated and analyzed statistically.

Results and Discussion:

1. ANTHROPOMETRIC MEASUREMENTS OF THE SELECTED SPORTS PERSON

Table 1: Frequency distribution of respondents according to their BMI Values

BMI value	N=200	Percentage (%)
Chronic energy deficiency- grade 3rd severe **< 16.0**	-	-
Chronic energy deficiency-grade 2nd mild **16.0 – 17.0**	8	4
Chronic energy deficiency-grade 1st mild **17.0 – 18.5**	18	9
Low weight normal **18.5 – 20.0**	65	32.5

Normal **20.0 – 23.0**	81	40.5
Overweight **>23**	22	11
Obesity **>25**	6	3
Total	200	100

*Source= **(Srilakshmi, 2012).***

The BMI is the most widely used anthropometric index for the assessment of the nutritional status of adults as it reflects the effect of both acute and chronic energy deficiency or excess **(Tenth Five Year Plan, 2002- 2007)**. In the present study, the body mass index of all the 200 respondents was computed from the height and weight. Table.1 shows that distribution of respondent according to their BMI and was found that maximum respondents had normal (20.0-23.0) 40.5 percent followed by 32.5 percent low weight normal (18.5-20.0). 9 percent respondents were chronic energy deficiency-grade 1st mild (17.0-18.5) and 4 percent respondents were Chronic energy deficiency-grade 2nd severe (16.0-17.0), 11 percent respondent were under the category of the overweight and 3 percent respondents were obese. According to **William *et al.,* (2011) BMI** is a relative body weight assessment and widely accepted tool in determining obesity.

2. FOOD PREFERENCES AND HABITS PRACTICES BY THE SPORTS PERSON

Table 2: Frequency distribution of the respondents according to their food choices

Food Choices	Liked		Disliked	
	N=200	%	N=200	%
Milk products	153	76.5	47	22.5
Green Vegetables	169	84.5	31	15.5
Dry Fruits	113	56.5	87	43.5
Fruit	175	87.5	25	12.5
Fried Food	40	20	160	80
Junk Food	77	38.5	123	61.5
Non veg	95	47	105	52.5

Table.2 shows some foods choices including milk products, green vegetables, dry fruits, fruits, fried foods, fast foods, non veg foods etc which were liked and disliked by the sports persons. The table depicts that 76.5 percent respondents liked milk products but about 22.5 percent respondents disliked the milk products. Green vegetables were liked by 84.5 percent respondents, 15.5 percent respondents disliked green vegetables. Dry fruits were liked by the 56.5 percent respondents, 43.5 percent respondents disliked dry fruits. About 87 percent respondents liked fresh fruits, 12.5 percent were dislike fruits. Only 20 percent respondents were liked fried foods, 80 percent respondents were disliked fried foods. Junk foods liked by the 38.5 percent respondent, 61.5 percent respondent were not liked fast foods items. Non vegetarian foods were liked by the 47 percent respondents and about 52.5 percents respondents disliked non vegetarian foods.

Table 3: Frequency distribution of the respondents according to their average foods restriction before performance

Food Items	Yes		No	
	N=200	%	N=200	%
Concentrated sweets	119	59.5	81	40.5
Fried foods	165	82.5	35	17.5
Spicy foods	155	77.5	45	22.5
High protein foods	110	55	90	45
Canned foods	167	83.5	33	16.5
Processed foods	125	62.5	75	37.5
Junk foods	175	87.5	25	12.5

Table.3 revealed that food items that were restricted by the sports person before competition. About 59.5 percent respondents were restricted concentrated sweets, 40.5 percent respondents were not restricted concentrated sweets. 82.5 percent were restricted fried foods, 77.5 percent respondents were restricted spicy foods, high protein foods was restricted by the 55 percent respondents, canned foods was restricted by the 83.5 percent respondent, 62.5 percent respondents were restricted processed foods and about 87.5 percent respondent were restricted junk foods.

Table.4 Frequency distribution of respondents according to their average foods preference before competitions

Table.4

Food items	Yes		No	
	N=200	%	N=200	%
High complex Carbohydrates Foods	152	76	48	24
Fruit Juices	174	87	26	13
Skim or toned milk	92	46	108	54
Sport drink	149	74.5	51	25.5

illustrates the food items preferred by the sports person before competition. The preference high complex carbohydrates foods among sports person were 76 percent, 24 percent of respondents were not preferred high complex foods. 87 percent respondents were preferred fruit juices. The preferences of skim or toned milk among all respondents were only 46 percents. 74.5 percent of respondents were preferred sport drink before competitions.

Table.5 Frequency distribution of the respondents according to their average daily water intake

S.No.	Particular	N=200	Total
1.	**Water intake per day**		
	6-8 glasses	56	28
	8-10 glasses	116	58
	>10 glasses	28	14
2.	**Water intake during performance**		
	6-8 glasses	18	9
	8-10 glasses	46	23
	>10 glasses	136	68

Table.5 shows the water intake per day it was found that 28 percent respondent were consume 6-8 glasses of water, 58 percent respondent were consume 8-10 glasses of water per day and 14 percent respondent were consume more than 10 glasses of water. This table also reveal that water intake was increased during performance and maximum number of respondents 68 percent were consumed water more than 10 glasses during performance, 23 percent respondent were consumed water during performance and only 9 percent respondent were consumed 6-8 glasses of water.

Table.6 Frequency distributions of the respondents according to their intake of harmful substances

Harmful substances	Daily		Occasionally		Never	
	N=200	%	N=200	%	N=200	%
Alcohol	6	3	28	14	166	83
Cigarettes	16	8	13	6.5	171	85.5
Pan eating	18	9	25	12.5	157	78.5
Tobacco	3	1.5	4	2	193	96.5

Table.6 shows that other frequencies like alcohol, tobacco, pan eating cigarette etc. There were 83 percent respondents were never drink alcohol, only 3 percent respondents were take alcohol daily, 14 percent respondents were take alcohol occasionally. Cigarettes were consumed daily by 8 percent respondent, 6.5 percent respondents were consumed occasionally and about 8.5 percent respondents were never consumed cigarettes. 78.5 percent respondents were never consumed pan, 12.5 percent respondents were consumed pan occasionally and about 9 percent respondents were consumed pan daily. 96.5 percent respondents were never consumed tobacco, 2 percent were consumed occasionally and 1.5 percent respondents were consumed tobacco daily.
Health Education and Promotion, (2004) reported in there survey that smoking, alcohol consumption, chewing pan/gutkha is considered fashionable and symptoms of modernization. These habits were prevalent among boys only. Some boys had more than one habit.

Sinha *et al*. (2012) in his study on smokeless Tobacco Uses among 3760 sample respondents, 2636 reported chewing tobacco, confirming the country wide trend of increase in tobacco use.

Table.7 Frequency distribution of respondents according to intake of dietary supplements

Dietary supplements	N=200	%
Yes	98	49
No	102	51
Whey proteins	6	3
ProteinX	17	8.5
Bournvita	10	5
Energy powder	10	5
Horlicks	20	10
Revital	8	4
Multivitamins	11	5.5
Creatine	6	3
Nutrilite	10	5

Dietary supplements are used by sports person worldwide. Around 85% of elite athletes are reported to take supplements, including vitamins, minerals, proteins, and creatinine, among others **(Maughan *et al.*, 2011).**Table.7 shows that intake of dietary supplements by the respondents and it was revealed that 51 percent were not taking dietary supplements. 49 percent respondents were take dietary supplements in which maximum respondents were take horlicks (10 percent), 8.5 percent respondent were take proteinX, 5.5 percent respondents were take multivitamins, 5 percent respondents were take bournvita, energy powder and nutrilite supplements, 3 percent respondents were take whey proteins and creatine.

Conclusion:
From the above results it is concluded that a value calculated from height-weight data, is an indicator of the body fat content. According to BMI the maximum respondents had normal (20.0-23.0) 40.5 percent followed by 32.5 percent low weight normal (18.5-20.0) and minimum respondents (3 percent) were obese. Food preferred by the respondents according to their choice, needs, and on the basis of performances, competitions session.

Acknowledgement

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