A STUDY OF BODY MASS INDEX ACCORDING TO FOOD HABITS AMONG THE WOMEN AGED 20 - 50 YEARS

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ABSTRACT
The most common and neglected public health problem was reported as obesity in both developed and developing countries. Globally, one in six adults is obese, and nearly 2.8 million individuals die each year due to being overweight or obese. The women's health was measured using the body mass index, and the food habits of the women individually were recorded by the investigator. This study was conducted in the urban area of Lucknow district on 400 women aged 20 - 50 years and was selected using a multistage stratified random sampling technique. The overweight or obesity was found to be 39.50% among the selected women in the present study. The overweight was found to be more among the vegetarian women, who taken 2-3 meals per day, skipped meals and breakfast and took food with watching TV, as compared to non-vegetarian women, taken 4-5 meals per day, not skip meals, others meals and not taken food with watching TV respectively. The insignificant associations between body mass index and food habit, skipped meals, breakfast, type of skipped meals and food taken with watching TV were observed, while a significant association between body mass index and meals taken per day was found in the present study.
Keywords: Obesity, Overweight, Food habits, Body Mass Index

Introduction

Obesity is a most common and neglected public health problem in developed and developing countries. Globally, one in six adults are obese, and more than 650 million adults were obese in 2019, as reported by Ashirwa and Mondal. Nearly 2.8 million individuals die each year due to obesity. In India, more than 135 million people are affected by obesity. Due to the increased risk of morbidity and mortality, obesity is now being recognized as a disease in its own right.
Being overweight and obesity is a significant health concern and increases due to rapid changes in diet, lack of physical activity and lifestyle. The statistics by World Health Organization (2012) show that 1/6 adults are obese, 1/10 are diabetic, and 1/3 have raised blood pressure. BMI and WHR can be considered as helpful tools for assessing obesity.

Objective

To study of body mass index according to food habits among the women aged 20 - 50 years.

Methodology

The sample of four hundred women aged 20-50 years in the present study was selected from the urban area of Lucknow district using Multistage Stratified

Random Sampling Technique, and selected women were interviewed by the researcher herself to get the required information. Obesity of the women was measured by body mass index, and body mass index was calculated as weight in kg / Height in meter square.

Tools of the study

A self constructed tool developed by the investigator with the help of supervisor and expert of the subject was used to assess the obesity according to food habit among women aged 20-50 years in the present study.

Results and discussion

The collected data were analyzed, discussed and presented in the following tables:

Table - 1: Body Mass Index among the selected women according to food habit.

Variable	**Category**	**Body Mass Index**							
		Underweight		*Normal*		*Overweight*		***Total***	
		No.	%	No.	%	No.	%	No.	%
Type of Food	Vegetarian	36	17.65	86	42.15	82	40.20	204	51.00
	Non-vegetarian	25	12.76	95	48.46	76	38.78	196	49.00
Total		61	15.25	181	45.25	158	39.50	400	100.00

χ^2 = 2.500, df = 2, p>0.05

Body mass index reveals among the women aged 30 - 50 years according to food habit that majority (51.00%) of them was vegetarian and remaining (49.00%) were non-vegetarian. Out of the vegetarian women, majority (42.15%) were having normal body mass index, followed by 40.20% having overweight body mass index and the minimum (17.65%) were having underweight body mass index, while among the non-vegetarian women, majority (48.46%) were having normal body mass index, followed by 28.78% having overweight body mass index and the minimum (12.76%) were having underweight body mass index. It can be seen that normal body mass index was more among non-vegetarian women as compared to vegetarian women while underweight and overweight body mass index were more among vegetarian women as compared to non-vegetarian women. Analysis of the data reveals that no significant difference regarding body mass index was observed according to type of food among the women (χ^2=2.500, df=2, p>0.05). Study conducted byVenkatra et. al. (2021) reported the similar findings i.e. prevalence of obesity in India was 40.3%. Adjusted analyses revealed positive graded correlations between the 'animal-food' pattern and both anthropometric risk variables. Obesity and central obesity risk was lower among those who followed the "cereals-savory meals" pattern moderately (Satija A.Et.al.2015).

Table - 2: Body Mass Index among the selected women according to intake of meals per day.

Variable	**Category**	**Body Mass Index**			
		Underweight	*Normal*	*Overweight*	***Total***

		No.	%	No.	%	No.	%	No.	%
Intake of Meals Per day	2 - 3	32	12.12	126	47.73	106	40.15	264	66.00
	4 - 5	29	21.32	55	40.44	52	38.24	136	34.00
Total		61	15.25	181	45.25	158	39.50	400	100.00

χ^2 = 6.121, df = 2, p<0.05

Body mass index highlights among the women aged 30-50 years according to intake of meals per day and out of the total women, majority (66.00%) of them consumed 2-3 meals per day and remaining (34.00%) consumed 4-5 meals per day. Out of the women consumed 2-3 meals per day, majority (47.73%) were having normal body mass index, followed by 40.15% having overweight body mass index and the minimum (12.12%) were having underweight body mass index, while among the women consumed 4-5 meals per day, majority (40.44%) were having normal body mass index, followed by 38.24% having overweight body mass index and the minimum (21.32%) were having underweight body mass index. It can be observed that normal and overweight body mass index were more among women consuming 2-3 meals per day as compared to women consuming 4-5 meals per day while underweight body mass index was more among women consuming 4-5 meals per day as compared to women consuming 2-3 meals per day. Analysis of the data reveals that significant difference regarding body mass index was observed according to consumption of meals per day among the women (χ^2=6.121, df=2, p<0.05). The study conducted byUpasna and Archna, (2015) also observed that number of meals affected the body mass index of the respondents.

Table - 3: Body Mass Index among the selected women according to skipping food.

Variable	**Category**	**Body Mass Index**							
		Underweight		*Normal*		*Overweight*		***Total***	
		No.	%	No.	%	No.	%	No.	%
Food Skipping	Yes	27	12.22	102	46.15	92	41.63	221	55.25
	No	34	18.99	79	44.13	66	36.88	179	44.75
Total		61	15.25	181	45.25	158	39.50	400	100.00

χ^2 = 3.631, df = 2, p>0.05

Analysis shows that majority (55.25%) of the women skipped food and remaining (44.75%) did not skip food. Out of the women who skipped food, majority (46.15%) were having normal body mass index, followed by 41.63% having overweight body mass index and the minimum (12.22%) were having underweight body mass index, while among the women who did not skip food, majority (44.13%) were having normal body mass index, followed by 36.88% having overweight body mass index and the minimum (18.99%) were having underweight body mass index. It can be seen that normal and overweight body mass index were more among women who skipped food as compared to women who did skip food while underweight body mass index was more among women who did not skip food as compared to women who skipped food. Analysis of the

data also reveals that no significant difference regarding body mass index was observed according to food skipped among the women (χ^2=3.631, df=2, p>0.05). Similar finding was also reported by Venkatra et.al. (2021) that skipped food increased the risk of obesity among the respondents.according to Yamamoto R.et.al. findings, women who skipped dinner were more likely to be overweight or obese (1.74 (95% CI: 1.07-2.84) vs. 1.68 (95% CI: 1.02-2.78), respectively). University students who regularly skipped meals were more likely to become overweight or obese, supporting previous research linking this behaviour to these conditions.

Table - 4: Body Mass Index among the selected women according to skipped food.

Variable	**Category**	**Body Mass Index**							
		Underweight		*Normal*		*Overweight*		***Total***	
		No.	%	No.	%	No.	%	No.	%
Name of Skipped Food	Breakfast	10	16.67	21	35.00	29	48.33	60	26.32
	Lunch	11	14.86	38	51.36	25	33.78	74	32.46
	Dinner	12	16.44	32	43.84	29	39.72	73	32.01
	Supper	1	4.76	11	52.38	9	42.86	21	9.21
Total		61	15.25	181	45.25	158	39.50	400	100.00

χ^2 = 3.951, df = 4, p>0.05

Body mass index according to name of skipped food among the women reveals that majority (32.46%) of them were skipped lunch, followed by 32.01% dinner and the minimum (9.21%) were skipped supper. Breakfast was skipped by 26.32% 0f the women in the present study. It can be seen that normal body mass index was more among women skipped supper while underweight and overweight body mass index were more among women skipped breakfast as compared to their counterparts. Analysis of the data also reveals that no significant difference regarding body mass index was observed according to type of skipped food among the women (χ^2=3.951, df=4, p>0.05). More or less, a similar finding was also reported by Venkatra et.al. (2021) that skipped breakfast was found more among the respondents.

Table - 5: Body Mass Index among the selected women according to food habit.

Variable	**Category**	**Body Mass Index**							
		Underweight		*Normal*		*Overweight*		***Total***	
		No.	%	No.	%	No.	%	No.	%
Food with Watching TV	Yes	33	15.79	91	43.64	85	40.67	209	52.25
	No	28	14.66	90	47.12	73	38.22	191	47.75
Total		61	15.25	181	45.25	158	39.50	400	100.00

χ^2 = 0.517, df = 2, p>0.05

Body mass index among the women according to consumption of food with watching television shows that majority (52.25%) of them consumed food with

watching television and remaining (47.75%) of them did not consume food with watching television. Out of the women consuming food with watching television, majority (43.54%) were having normal body mass index, followed by 40.67% having overweight body mass index and the minimum (15.79%) were having underweight body mass index, while among the women did not consume food with watching television, majority (47.12%) were having normal body mass index, followed by 38.22% having overweight body mass index and the minimum (14.66%) were having underweight body mass index. It can be seen from the above table that normal body mass index was more among women did not consume food with watching television as compared to women consumed food with watching television, while overweight and underweight body mass index were more among women consumed food with watching television as compared to women did not consume food with watching television. Analysis of the data also reveals that no significant difference regarding body mass index was observed according to consumption of food with watching television among the women (χ^2 =0.517, df =2, p>0.05).Similar results of some studies showed that prolonged TV viewing increases BMI. Additionally, the connection was higher at the bottom and upper tails of the BMI range and inconsequential in the middle. Females have higher BMI values than males, according to the research (Khaled Al-Hanawi et.al.2020).

Conclusion

The overweight was found to be more among the vegetarian women, who taken 2-3 meals per day, skipped meals and breakfast and took food with watching TV, as compared to non-vegetarian women, taken 4-5 meals per day, not skip meals, others meals and not taken food with watching TV respectively. The insignificant associations between body mass index and food habit, skipped meals, breakfast, type of skipped meals and food taken with watching TV were observed, while a significant association between body mass index and meals taken per day was found in the present study.

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