Metabolic Disorder: Obesity in Jaunpur District, U.P.

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ABSTRACT

*The present study entitled with **"Metabolic Disorder: Obesity in Jaunpur District, U.P."** was carried out with the objective to find out obesity in Jaunpur district. In this research select the 30 respondents (40- 70 years) were selected through the random sampling method from Jaunpur (U.P.). Obesity and dietary pattern were assessed by gathering information on the BMI, Dietary intake, Food frequency, and RDA was used in order to collect data from the selected respondents. In this random sampling found 17 male and 13 female respondents. It was found that 10 percent respondents' obesity. In 30 respondents, 10 percent respondents have grade 1 obesity. It was found that 66.66 percent respondents were vegetarian, 13.33 percent respondents were non-vegetarian and 20 percent respondents were Ovo-vegetarian. Maximum respondents' 26.66 percent of the respondents followed the dietary pattern Breakfast + Lunch + Dinner. The nutrient intakes of selected respondents such as energy, protein calcium and iron were lesser than RDA but energy intake lower by the female respondents. The intake of nutrients such as fat, higher according to RDA by the both male and female. The findings of the present study indicate that metabolic disorder of obesity in selected respondents in Jaunpur district was less.*

Keywords: metabolic disorder, obesity, BMI, nutrient intakes and RDA

Introduction:

A metabolic disorder occurs when the metabolism process fails and causes the body to have either too much or too little of the essential substances needed to stay healthy.

One quality issue facing health care administrators everywhere is obesity. Obesity has reached epidemic proportions globally, with more than 1 billion adults overweight - at least 300 million of them clinically obese - and is a major contributor to the global burden of chronic disease and disability. Obesity is a disorder involving excessive body fat that increases the risk of health problems. Often coexisting in developing countries with under-nutrition, obesity is a complex condition, with serious social and psychological dimensions, affecting virtually all ages and socioeconomic groups. Increased consumption of more energy-dense, nutrient poor foods with high levels of sugar and saturated fats, combined with reduced physical activity, have led to obesity rates. Health is a life-style behavior change **(Cheryl Ann Alexander, Lidong Wang 2015).**

Old lifestyles must be put aside and new lifestyles adopted once healthy behaviors are achieved. Health promotion is holistic. Identifying firm causes of this epidemic is a difficult task; the most obvious factors leading to overweight or obesity are excessive intake of energy-dense food, sedentary lifestyle, and lack of physical activity. People from economically better-off families are more likely to adopt sedentary lifestyle and intake energy-dense food. Unlike the developed countries where obesity is generally concentrated among the low/middle-income groups, elevated adiposity levels in developing countries are more associated with women from the richer sections of the society, noticeably in urban areas **(Ziraba *et al.*, 2009)**.

A large number of studies employed factor analysis or principal component analysis to derive dietary pattern **(Hamer *et al.*, 2013)**. the etiology of overweight/obesity needs to be understood and this is a condition associated with an increased risk of coronary heart disease, hypertension, diabetes mellitus, gallbladder disease, osteoarthritis and some types of cancers **(Rezazadeh and Rashidkhani, 2010).**

Material and methods

A cross-sectional and descriptive design was used in this study among adult to older age 40-70 of obesity belongs to Jaunpur district, in UP were selected for the study. The selection of the respondents was based on the random sampling of the study.

Total number of 30 respondents was selected for study purpose. Presented schedule was used in order to collect data from respondents. The schedule was including aspects which were led to the fulfillment of the objective of this study. The selected respondent was googled form with the help of schedule that contained questions related to general information, anthropometric measurement and dietary information. 24 hours dietary recall method and food frequency table method are used for the nutritional assessment of the obesity respondent described by **(Swaminathan, 2010).** Calculation of nutrient intake will be done with the help of the food composition tables **(Gopalan *et al.,* 2018).** The data were tabulated and analyzed statically.

Result and Discussion:

The present study pertaining to the topic **"Metabolic Disorder: Obesity in Jaunpur District, U.P."** was done by the survey method. The whole data was collected and tabulated under three main sections in this chapter which are as follows:

1. Socio-demographic information of the selected respondents
2. Anthropometric measurement of the selected respondents
3. Dietary pattern of the respondent's

Table 1: Distribution of Socio-demographic profile of selected respondents

S. No.	Different Demography			Total no. 30	Percentage
1.	Age (year)	40-60		18	60
		61-70		12	40
2.	Religion	Hindu		30	100
		Muslims		0	0
		Christian		0	0
		Others		0	0
3.	Type of family	Nuclear		6	20
		Joint		24	80
4.	Gender	Male		17	56
		Female		13	43
5.	Number of family members	<5		19	63.33
		>5		11	36.66
6.	Marital status	Married		27	90
		7.Unmarried		3	10
8.	Number of children	<3		14	46.66

S. No.	Parameters		No.	Percentage
		>3	16	53.33
9.	Education	Illiterate	7	23.33
		Fifth pass	8	26.66
		High school	5	16.66
		Intermediate	4	13.33
		Graduate	5	16.66
		Post graduate	1	3.33
10.	Occupation	Service	3	10
		Business	14	46.66
		Housewife	13	43.33
11.	Harmful Substances	Alcohol	0	0
		Cigarette	2	6.66
		Betel leaves	2	6.66
		Tobacco	2	6.66
12.	Exercise	Yes	12	26.66
		No	18	73.33
13.	Sleeping Time	5 hours	5	16.66
		6 hours	11	36.66
		7 hours	10	33.33
		>7 hours	4	13.33

The presents Table the data on Socio-demographic of subject analyzed using different parameters. The age wise distribution of subjects indicated that a majority (60%) were between the age group of 40-60years, while the distributed 61 -70 years in 40%. 100% of respondent were Hindus. The proportions of joint families were higher (80%) and 20 percent respondent were having nuclear family. In study revealed that out of total respondent, 56 percent respondents were male and 43 percent respondent female. The average family size was 63.33% in <5 and 36.66 in >5 Family members. Marital status of respondents was married and unmarried was 90 per cent and 10 per cent respectively. Educational status of respondents was fifth pass 26.66%, illiterate 23.33%, high school and graduate 16.66% and intermediate 13.33% and other illiterate 3.33%. In the data businessman were higher (46.66%) and in housewife and service (43.33%) and 10%) respectively. Out of total 30 respondents, 0 per cent respondent took alcohol, 6.66 per cent respondent took cigarette, betel leaves and tobacco, 80 per cent respondents do not consume these harmful substances. 26.66 per cent respondents do daily exercise and 73.33 per cent denied for daily exercise. The above table indicated the sleeping time of the selective respondent, it was found that most of the respondents slept for 6 hours (36.66% respondents), 33.33 per cent slept for 7 hours, 16.66 per cent slept for more than 5 hours, 13.33 per cent respondent were slept for more than more than 7 hours.

Cheryl Ann Alexander and Lidong Wang (2015) observed that it was determined that this is not always the case. Health promotion meant lifestyle changes, individual responsibility, education and advice, offering choices, and optimum health.

Table 2: Specific Questions Related to Obesity

S. No.	Parameters		Total No. 30	Percentage
1.	Having Obesity	Yes	3	10
		No	27	90
2.	Type of obesity	Grade 1	3	10
		Grade 2	0	0
		Not any	27	90
3.	Period of obesity	<5 Years	0	0
		>5 Years	3	10

4.	History of obesity	Yes	3	10
		No	27	90
5.	Health Problems	Diabetes	3	10
		Cardiac Disease	3	10
		Arthritis	6	16.66
		Any others	5	16.66
		No one	13	43.33
6.	Medication	Yes	2	6.66
		No	28	93.33
7.	Diet Restriction	Yes	3	10
		No	27	90

The above Table show that the data on obesity of subject analyzed using different parameters. The obesity in total 30 respondent were found in 10 percent respondent obesity and 90 percent respondent were not having obesity. In 30 respondent, 10 percent respondent have grade 1 obesity followed by 90 percent respondent have not any grade obesity. In above data all obese respondent has more than 5 years obesity. out of 100, 10 percent respondents had history of obesity and 90 percent had no history of obesity. In 30 respondent, 43.33 percent respondent had not any disease followed by 16.66 per cent respondents were suffering with arthritis, 16.66 per cent with any other, 10 per cent with diabetes and cardiac disease respectively. 93.33 percent respondent did not medication for the obesity control followed by 6.66 percent respondent had doing medication. 90 percent respondent not follow diet restriction and 10 percent respondent follow diet restriction.

Table 3: Anthropometric measurement of the selected respondents (BMI)

Parameters	Frequency (N= 30)	Percentage
Underweight (Below 18.5)	4	13.33
Normal (18.5-24.9)	12	40
Overweight (25.0-29.9)	11	36.66
Obesity 1 (30- 34.9)	3	10

Table 3 Shows that out of 30 respondents, total 40 per cent respondents was found overweight, followed by 36.66 per cent respondents were having normal weight, 13.33 respondents were underweight and 10 per cent were found to be obesity grade I.

Lazarou and Kouta (2010) discuss the role of nurses in preventing obesity. It is estimated that even a 10% increase in body fat is responsible for cardiovascular disease, increased lipidemia, and at least 75% of cases of hypertension can be traced to obesity. A BMI of 30 carries a risk three times higher than that of a BMI of 25 for diabetes.

Table 4: Distribution of the respondents according to the food habits and dietary pattern

S. No.	Particulars	N=30	Percentage
1.	**Food habits**		
a.	Vegetarian	20	66.66
b.	non vegetarian	4	13.33
c.	Ovo-vegetarian	6	20
2.	**Fast food consumption**		
a.	once a week	2	6.66

b.	twice a week	3	10
c.	once in a month	6	20
d.	Occasionally	8	26.66
e.	Never	11	36.66
3.	**Fasting pattern**		
a.	once a week	3	10
b.	twice a week	0	0
c.	once in a month	5	16.66
d.	Occasionally	12	40
e.	Never	10	33.33
4.	**Dietary pattern**		
a.	Brunch + dinner	7	23.33
b.	Breakfast + lunch + dinner	8	26.66
c.	Breakfast + lunch + evening tea + dinner	3	10
d.	Breakfast + lunch + evening tea + dinner + bed time	6	20
e.	Breakfast + midmorning + lunch + evening tea + dinner + bed time	6	20

The table 4 shows the distribution of the respondents according to the food habits and dietary pattern. Food habits: in selected respondents, 66.66 percent respondents were vegetarian, followed by 13.33 percent were non-vegetarian and 20 percent were ovo-vegetarians. Fast food consumption: In selected respondents 36.66 respondent were never consumed fast food followed by 26.66 percent respondent consumed occasionally, 20 percent respondent consumed once in a month, 10 percent respondent were consumed twice a week and 6.66 percent respondent were consumed once a week.   Fasting pattern: in selected respondent that 40 percent respondents kept fasting occasionally followed by 33.33 percent respondents were never kept fasting, 16.66 percent respondents kept fasting once a month, 10 percent respondents were kept fast once a week, and 0 percent respondents were twice a week kept fasting. In a dietary pattern 26.66 percent respondent adopted three meal pattern (breakfast + lunch + dinner) followed by 23.33 percent respondent were adopted two meal pattern (brunch + dinner), 20 percent responded follow five meal pattern and six meal pattern (breakfast + lunch + evening tea + dinner + bed time), (breakfast + midmorning + lunch + evening tea + dinner + bed time and Brunch + dinner) respectively, and 10 percent respondent were adopted four meal pattern (Breakfast + lunch + evening tea + dinner).

Table 5: Distribution of the respondents according to their food consumption frequency

Food Groups	Daily		Weekly		Monthly		Occasionally		Never	
	N=30	%	N=30	%	N=30	%	N=30	%	N=30	%
Cereals	30	100	-	-	-	-	-	-	-	-
Pulses	26	86.66	4	13.33	-	-	-	-	-	-
Milk & milk products	22	73.33	8	26.66	-	-	-	-	-	-

Green leafy vegetables	10	33.33	7	23.33	8	26.66	5	16.66	-	-
Egg	-	-	6	20	10	33.33	5	16.66	9	30
Root & Tubers	8	26.66	4	13.33	11	36.66	-	-	7	23.33
Fruits	5	16.66	5	16.66	9	30	11	36.66	-	-
Meat & Poultry	-	-	3	10	6	20	8	26.66	13	43.33
Fats & Oil	30	100	-	-	-	-	-	-	-	-
Sugar & Jaggery	10	33.33	2	6.66	5	16.66	2	6.66	11	36.66

The table 5 shows that the food consumed by all respondents included cereals, pulses, milk and milk products, green leafy vegetables, roots and tubers, fruits, meat and poultry, fats and oil and sugar. The consumption of cereals, it was found that all respondents consumed cereals daily. The pulses were consumed daily by 88.66 percent respondents followed by 13.33 percent respondent were weekly consumed pulses. Milk and milk products were consumed daily by 73.33 followed by 26.66 percent respondent were weekly consumed milk and milk products. The consumption of green leafy vegetables in total respondent, 33.33 respondent were daily consumed green leafy vegetables followed by 26.66 percent respondent were consumed monthly, 23.33 percent respondent consumed weekly and 16.66 percent respondent were consumed occasionally green leafy vegetables. The consumption of egg in total respondent, 33.33 respondent were monthly consumed egg followed by 30 percent respondent were never consumed egg, 20 percent respondent consumed weekly and 16.66 percent respondent were consumed occasionally egg. Root and tuber were consumed monthly by 36.66 percent respondent followed by 26.66 percent respondent had consumed daily, 23.33 percent respondent had never consumed root and tubers and 13.33 percent respondent had consumed weekly. Fruits were consumed by 36.66 percent respondent occasionally followed by 30 percent respondent had consumed monthly, and 16.66 percent were consumed daily and weekly. Meat and poultry were 43.33 percent respondents never consumed meat and poultry followed by 26.66 percent respondents were consumed occasionally, 20 percent were consumed monthly and 10 percent respondent had consumed weekly. Fats and oils 100 percent respondent were consumed daily and sugar and jaggery were never consumed 36.66 followed by 33.33 percent respondent consumed daily, 16.66 percent respondent consumed monthly and 6.66 percent respondent consumed weekly and occasionally respectively.

Similarly, **Bouchard-Mercier A** *et.al.* **(2010)** identified by different statistical methods, a diet rich in fruits and vegetables was inversely associated with BMI and a diet rich in meat and fat was positively associated with BMI.

Table 6: Average nutrient intake per day in selected sedentary female respondents

Parameters	Energy (Kcal)	Protein (g/d)	Fat (g/d)	Calcium (mg/d)	Iron (mg/d)
Intake	1870	52	24	537	19
RDA	1900	55	20	600	21
difference	30	3	-4	63	2

The table 6 shows the average value of nutrients intake by the selected female respondents with respect to energy, protein, fat, calcium, and iron. After comparing all the average nutrients value with ICMR, RDA (2018) it was observed that, energy, protein, calcium and iron were less than the RDA whereas, fat intake was higher than the RDA which concludes that due to decrease fat consumption for the overcome obesity.

Table 7: Average nutrient intake per day in selected sedentary male respondents

Parameters	Energy (Kcal)	Protein (g/d)	Fat (g/d)	Calcium (mg/d)	Iron (mg/d)
Intake	1970	64	26	490	16
RDA	2320	60	25	600	17
difference	350	-4	-1	110	1

The table 6 shows the average value of nutrients intake by the selected male respondents with respect to energy, protein, fat, calcium, and iron. After comparing all the average nutrients value with ICMR, RDA (2018) it was observed that, energy, protein, calcium and iron were less than the RDA whereas, fat intake was higher than the RDA which concludes that due to decrease fat and protein consumption for the overcome obesity.

Conclusion:

The survey on "Metabolic Disorder: Obesity in Jaunpur District, U.P". The survey method uses for the data collection and its concluded that out of 30 percent respondent the 10 percent respondents had obesity. In food frequency consumption of cereals, it was found higher rate that all respondents consumed cereals daily and fruits it was found lower rate consumed by 16.66 percent respondents on daily. 66.66 percent respondent found vegetarian and most of the respondent 26.66 follow three meal pattern (breakfast + lunch + dinner) The nutrient intakes of selected respondents such as energy, protein calcium and iron were lesser than RDA but energy intake lower by the female respondents. The intake of nutrients such as fat, higher according to RDA by the both male and female.

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