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Assessment Of Dietary Intake And Health Issues Among Obese Adults In District Srinagar Of Ut Jammu And Kashmir.

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Abstract:
Obesity is a compound, unending disease with numerous causes that lead to the development of metabolic diseases. Body fat itself is not an ailment, but it can change the way it functions once it gets accumulated in excess inside the body. These changes are progressive and get worse over time and thus lead to adverse health effects. A study on obesity and its complications and dietary assessment was carried out in District Srinagar of UT J&K, using a self-structured questionnaire. A sample of 150 obese individuals from both the sexes in the age group of 25-65 years, were selected by purposive random sampling technique. The sample size was limited to 150 individuals because of the financial paucity. It was found that there were various complications associated with obesity and that the intake of energy and fats was found to be more than the recommendations (RDA) given by the Indian Council of Medical Research (ICMR). Furthermore, the intake of proteins was more or less in terms of the RDA.

Keywords: *obesity, dietary assessment, symptoms,complications.*

Introduction:

Obesity, a global health issue, is a result of multiple factors such as genetic, socio-demographic, behavioural and environmental factors. Large research evidence mounts to the fact that obesity results because of the continuous energy intake, exceeding the energy expenditure thereby leading to an elementary chronic energy imbalance. The shift of societal and behavioural changes from an active to a sedentary lifestyle over the last few decades has been commonly found to be responsible for various lifestyle disorders including obesity (1). Various possible mechanisms inside our body lead to obesity. The usual observation is often that the main cause of obesity is more excess energy stored than the energy used by the body(2). However, the latest research revealed that the food sources and quality of nutrients matter more than their quantities in the diet for weight control, and also for disease prevention (3).In addition to this an inapt dietary pattern including snacking, large portion sizes, soft drinks, and high fat and energy-dense diets are also being held responsible(4). The relationship between high dietary fat intake as a causative factor in the occurrence and maintenance of excess weight is still debatable. However dietary fat and excess body fat have been found to have a positive association in some studies only (5). Besides, the carbohydrate, protein, fibre, energy density and glycemic index have also been found to be among the various responsible factors of obesity (6,7). Various studies carried out in India depict a rising trend in the prevalence of overweight and obesity among children and adolescents.

The development of obesity is the interplay of genetic and environmental factors and in addition to this diet is one of the most important environmental factors contributing to these diseases. Several studies have shown that there is a close link between an increased fat intake and body weight gain which both can be a causative factor for obesity and other related metabolic diseases. (8,9)

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Background:

The most important risk factors that act as etiological factors for the occurrence of chronic diseases are overweight and obesity. High blood pressure and high blood cholesterol levels are the other intermediate risk factors of chronic diseases and can be linked to the body weight of an individual (10). A multitude of health problems like osteoarthritis, and NCDs (cardiovascular disease and type 2 diabetes) have also been found to be directly affected by the occurrence of obesity. Obesity has thus been found to have a direct influence on the morbidity and mortality of population groups besides imposing a massive burden on the health status of the countries (11).The abnormal or excessive fat accumulation impairing the health of an individual is called overweight and obesity. The most simple and commonly used index of weight-for-height for classifying overweight and obesity in adult populations and individuals is the Body Mass Index (BMI). Besides being a useful tool for the measurement of overweight and obesity at the population level. BMI is the same for both sexes and all adult age groups; it also provides a measure of the excessive fat in an individual, but it may not always correspond to the same degree of fatness in different individuals and different population groups (11).

This study aimed to assess the dietary pattern and health problems among obese people.

Material and methods:

The current study was carried out in District Srinagar. The study group comprised a sample of 150 obese individuals from both sexes in the age group of 25-65 years, which were selected by purposive random sampling technique for the study from outpatient departments of SKIMS (Sheri Kashmir Institute of Medical Sciences) and from some private health clinics. The height and weight of the individuals were assessed and those who had a BMI of 30 or more were included to be part of the sample group. Data for the study was collected through the personal interview method by using a self-prepared, pre-tested questionnaire and data was compiled, tabulated, analysed and interpreted to draw a valid conclusion.

Results and discussion:

Table 1: Age and sex-wise distribution of respondents.

Age (in years)	Males		Females		Total	
	No.	Percentage (%)	No.	Percentage (%)	No.	Percentage (%)
25-30	3	2	9	6	12	8
30-35	6	4	15	10	21	14
35-40	12	8	18	12	30	20
40-45	12	8	18	12	30	20
45-50	15	10	15	10	30	20
50-55	9	6	9	6	18	12
55-60	6	4	-	-	6	4
60-65	-	-	3	2	3	2
Total	63	42	87	58	150	100

The above table reveals that the highest number of obese individuals were in the age group of 35- 40, 40-45 and 45-50 years, i.e.20% each, which were followed by 14% in the age group of 30-35 years and 12% in the age group of 50-55 years. It further reveals that among the obese individuals, the majority were females i.e. 58% whereas the males constituted 42% of the total population. Obesity more often affects women than men (15 versus 6.5%), while overweight is more common in men, i.e. 44.2 versus 34.0% in women. (10-12)

Table 2: Common symptoms and complications experienced by the respondents

Symptoms and complications experienced by the respondents.	N	Percentage
Backache	99	66
Fatigued easily after little exertion	117	78
Breathlessness	90	60
Chest Pain	48	32
Osteoarthritis	78	52
Hypertension	84	56
Dyslipidemia	63	42
Diabetes	30	20
Cholelithiasis	21	14
Cholecystectomy	12	8
Fatty Liver	18	12
Sleep Apnea	33	22
Hypothyroidism	24	16
Previous history of heart attack or stroke	3	2

The perusal of the table above reveals that there are various symptoms and complications which are common to most obese individuals. It was found that the most frequent symptoms/complications allied with obesity included fatigue due to little exertion (78%), breathlessness (60%), backache (66%), and hypertension (56%). Other consequences included osteoarthritis (56%), dyslipidemia (42%) sleep apnea (22%) and diabetes (20%).

Some of the current research studies indicate that the prevalence of obesity is increasing at a fast rate and at the same time the prevalence of obesity-associated disease (metabolic and mechanical) also increases. The metabolic diseases include type 2 diabetes mellitus (T2DM), hypertension, dyslipidemia and consequent heart disease (13) whereas the mechanical type diseases include obstructive sleep apnoea, and osteoarthritis (14).

Table 3: Consumption of proteins per day (24-hour dietary recall)

Age group (in years)	Males			Females		
	M.I	C.V	D	M.I	C.V	D
25-30	68.22	-	+8.22	39.95	68.29	-10.05
30-35	63.23	6.11	+3.23	54.49	12.64	+4.49
35-40	55.12	58.22	-4.88	45.38	42.7	-4.62
40-45	65.88	49.35	+5.88	52.3	25.13	+2.3
45-50	66.05	40.44	+6.05	46.82	28.81	-3.18
50-55	51.3	26.81	-8.7	54.97	23.55	+4.97
55-60	54.06	40.05	-5.94	-	-	-
60-65	-	-	-	57.27	-	+7.27

M.I= Mean Intake
C.V=Coefficient of variation
D= Deviation from ICMR (R.D.A)

Table 3 presents the sex and age-wise, protein intake of the respondents. Results indicated both positive as well as negative deviation from RDA given by ICMR. Highest positive deviation in males was found in the age group of 25-30 years, (8.22gms/day) whereas among females it was found in the age group of 60-65 years, (7.27gms/day). Contrary to this the negative deviation among males and females was seen among the age groups of 55-60 years (5.94gms/day), and 25-30 years (10.05gms/day) respectively.

In a research study carried out by Bujnowski et al (2011), across 7 years of follow-up, it was found that dietary animal protein had a positive association with overweight and obesity and there was found to be a positive link between obesity and animal protein intake. It was also found that there were lower odds of being obese among those who were in those in higher quartiles of vegetable protein intake. (17)

Table 4: Consumption of energy per day (24-hour dietary recall)

Age group (in years)	Males			Females		
	M.I	C.V	D	M.I	C.V	D
25-30	2991.34	-	+116.34	2512.56	15.89	+287.56
30-35	3121.72	11.23	+246.72	2438.81	19.34	+213.81
35-40	2884.26	54.1	+9.26	2271.87	31.19	+46.87
40-45	3263.69	34.97	+388.69	2572.76	23.54	+347.76
45-50	2958.73	5.39	+83.73	2343.32	24.61	+118.32
50-55	2545.56	9.06	-329.44	2542.81	9.97	+317.81
55-60	2894.43	34.96	+19.43	-	-	-
60-65	-	-	-	2254.62	-	+29.62

M.I= Mean Intake
C.V=Coefficient of variation
D= Deviation from ICMR(R.D.A)

Table 5: Consumption of fats per day (24-hour dietary recall)

Age group (in years)	Males			Females		
	M.I	C.V	D	M.I	C.V	D
25-30	45.5	0	+25.5	38.65	38.14	+18.65
30-35	50.75	10.35	+30.75	39.22	22.73	+19.22
35-40	31.94	66.08	+11.94	32.07	46.75	+12.07
40-45	51.83	37.9	+31.83	40.37	45.79	+20.27
45-50	43.44	35.94	+23.44	25.94	74.22	+5.94
50-55	38.12	27.81	+18.12	44.25	18.98	+24.25
55-60	28.87	17.12	+8.87	-	-	-
60-65	-	-		23.41	-	+3.41

M.I= Mean Intake
C.V=Coefficient of variation
D= Deviation from ICMR (R.D.A)

The perusal of Table 4 indicates that the intake of calories was more than the recommendations given by the ICMR. The highest positive deviation was seen among the age group of 40-45 years with the intake of calories exceeding the ICMR recommendations by 388.69 kcal/day. Similarly, the intake of energy was seen to be more than normal, among all the other age groups except 50-55 years, who were deviating negatively from the recommendations by 329.44 kcal. Similarly, Table 5, indicates that the intake of fats also was found to be more than the recommendations (by ICMR). The degree of deviation was found to be more among males, rather than females with the intake almost doubling the recommendations. Research carried out in the United States in 1971–2000, indicates that the daily intake of calories by women increased by 335 calories per day (1542 calories in 1971 and 1877 calories in 2000). For men, it was found to be increasing by 168 calories per day (2450 calories in 1971 and 2618 calories in 2000). The increase in carbohydrate consumption rather than an increase in fat consumption was mostly found to be responsible for this extra increase. (18,21,22)

The relationship between fast food consumption and obesity is becoming the concern of the hour because societies are becoming increasingly reliant on energy-dense fast-food meals(16). The consumption of fast food meals has tripled and calorie intake from fast food has quadrupled between 1977 and 1995 in the United States (15) and the rising rates of obesity are also the product of excessive consumption of sweetened drinks (19,20).

Conclusion:

Based on these findings it can be thus concluded that the majority of obese individuals experienced such complications as hypertension, diabetes, breathlessness, sleep apnea and fatigue on exertion. Besides, after assessment of the dietary intake of the respondents, it was found that despite the fact of being obese, the intake of such nutrients as energy and fats was much more than the recommendations given by ICMR thus aggravating the present condition.

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