NUTRITIONAL PROFILE OF OBESE ADULT FEMALES RESIDING IN URBAN SLUM

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ABSTRACT: BACKGROUND: Obesity is a complex and incompletely understood disease.It is a population problem and should be tackled as such. **OBJECTIVE:** To study the prevalence of preobesity and obesity and nutritional profile of obese urban adult females. **METHOD:** A community based cross sectional study was carried out from Nov 2011 to May 2012 Total 553 adult females were enrolled. The data was analyzed by epi-info version. **RESULTS:** Prevalence of preobesity and obesity was found to be 17.18% and 6.5% respectively. **CONCLUSION:** As family is the first and most important of inculcating healthy habit and behavior, so particularly female should be made aware about causes and consequences of obesity from childhood level.
KEYWORDS: Preobesity, obesity nutritional profile.

INTRODUCTION: Obesity is a chronic disease, prevalent in both developed and developing countries, and affecting children as well as adults. Indeed, it is now so common that it is replacing the more traditional public health concerns, including under nutrition and infectious disease, as one of the most significant contributors to ill health.[1] Obesity identified as nutritional disorder, thirty years ago and still continues to be one of the most important, yet preventable health hazards [2]. Obesity may be defined as an abnormal growth of the adipose tissue due to an enlargement of fat cell size (hypertrophic obesity) or an increase in fat cell number (hyperplasic obesity) or a combination of both.[3] Obesity can result from a minor energy imbalance that leads to a gradual but persistent weight gain over a considerable period.[1]Diet eating pattern, physical inactivity, sedentary lifestyles, environmental factors, alcohol consumption and psychological factors contribute to obesity.[4]Cultural factors are among the strongest determinants of food choice..Obesity is a major focus of attention in India. Hence fighting against obesity has become one of the main public health concerns.[2] As obesity is a life threatening problem, giving rise to various complications, ways and means of reducing the occurrence of obesity need to be explored.[1]Keeping this in mind the present study was conducted to determine the prevalence of preobesity and obesity in adult females and also to study the nutritional profile of preobese and

obese females

MATERIAL AND METHODS:

The present community based cross sectional study was conducted from Nov 2011- May 2012 at urban health training centre attached to tertiary care hospital. Total 553 study subjects were enrolled by using the formula 1.96^2 pq /l2 .where p is the prevalence of obesity, q is (100-p) l is absolute error. A house to house survey was done. The first house was selected by lottery method and by deciding the systematic sampling method every fifth house was selected. Assesment of obesity was done according to W.H.O. classification of BMI (Kg/m^2).Females suffering from pathological edema, Cushing syndrome, any hormonal disorder and pregnant females were excluded from study. The general and systemic examination of the patient was done at UHTC. The results were analyzed by using Epi-Info version 3.4.1 Diet survey was carried out on 20% of sub sample using systematic random sampling and selecting every fifth study subject method). Total 111 study subjects were enrolled, out of which 64 were nonobese and 47 were preobese and obese. Diet survey was carried out by 24 hrs recall methods.

RESULT AND DISCUSSION: It was observed that maximum number of study subjects belong to 19-28 years of age group. Most of the study subjects had high school and intermediate school education.59.31% of the study subjects belonged to social class IVi.e.lowemiddle.(Prasad' scale).

Table no 2 shows that diet of study subjects were cereal based. However there was a deficiency of 20.67% and 14.22% in non-obese and obese study subjects respectively. Second common food consumed was pulse, but there was a deficiency of 27% and 35.95% in pre-obese and obese study subjects respectively. Due to lack of purchasing power the diet was deficient in green leafy vegetables, other vegetables and milk. It was observed that both in obese and non-obese study subjects diet was deficient in protein, fat, carbohydrate and calories. K Yadav et al (2008)[6] mentioned that 10.5% urban women,13.3% urban slum women and 20.2% rural women reportedly taking no fruits and vegetables on a typical week. Jafar Muhammand (2008)[7] observed that in females average consumption of vegetables and fruits were less than recommended dietary allowances.

It has been observed from table no III & IV that the mean calorie intake among non obese and pre obese and obese was 1521.27kcl and 1632.68 kcl. Among non obese study subjects protein was the main source of energy when compared to obese, while among obese carbohydrate was the main source of energy. For Industrialized country it has been suggested that such increase in body weight have been basically caused by reduced level of physical activity , rather by change in food intake/calories intake or by some other factors .In our study also association between obesity and physical inactivity was also found to be statistically significant.(chi square=o.o5).

A. Mishra et al (2001)[8]observed that total consumption of fat was near 30% in the females. Intake of dietary fiber was approximately a third of that recommended.

In the present study data analysis of sample's meal pattern revealed that majority of study subjects eat meal only two times in a day. 70-80% pre-obese and obese study subjects did not snack at all and they eat greater amount of meal in one time. The skipping of breakfast may contribute to the appearance and further development of obesity.

SUMMARY AND CONCLUSION: Being a social problem with a social impact, obesity should be prevented at all levels including individual, family, society and national/international levels. As

family is the first and most important point of inculcating healthy habits & behaviors, so particularly females should be made aware about causes and consequences of obesity from childhood level. A goal should be established for securing balanced nutrition for community and increased physical activity. The result of the present study shows that the diet of pre-obese and obese was cereal based. Among non-obese study subjects protein was the main source of energy when compared to obese, while among obese carbohydrate was the main source of energy. The report of this study is also suggestive of the necessity to make effective steps for the prevention of obesity among these through health education, lifestyle change and dietary modification.

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Table no-1 Distribution of study subject according to BMI
(n=553)

S.N.	BMI	Study subject	Percentage
1	<18.5	105	18.98
2	18.5 -24.99	317	57.32
3	25-29.99	95	17.18
4	30-34.99	26	4.71
5	35-39.99	9	1.63
6	>=40	1	0.18
7	TOTAL	553	100

Table no. I shows that percentage of preobesity and obesity was 17.18% and 6.5% respectively. Pragati Chhabra et al (2007)[5] observed that 21.7% and 7.7% urban females of Delhi were preobese and obese. This finding is similar to present study.

Table No 2 Mean intake of food stuff among study subjects

S.N.	Food stuff	Nonobese gm/day	RDA gm/day	% Deficit	Preobese &obese gm/day	RDA gm/day	% Deficit
1	Cereals	325.4	410	20.67	351.67	410	14.22
2	Pulses	29.2	40	27	25.62	40	35.95
3	Leafy vegetable	20	100	80	18	100	82
4	Others vegetable	10	40	75	12	40	70
5	Root and tubers	20	50	60	24	50	52
6	Milk	10	100	90	10	100	90
7	Oils& fats	15	20	25	16	20	20
8	Sugar or jaggery	10	20	50	10	20	50

Table no.3 Mean Protein and Caloric intake of study subjects

	Proteins (gm)			Calories (kcal)		
	Mean intake	RDA	% Deficit	Mean intake	Recommended Daily allowance	% Deficit
Nonobese	43.25	50	13.5	1521.27	1875	18.86
Preobese & Obese	35.31	50	29.38	1632.68	1875	12.92

Table no 4 Mean fat and carbohydrate intake of study subjects

	Fat (gms)			Carbohydrate (gms)		
	Mean intake	RDA	% Deficit	Mean intake	RDA	%Deficit
Nonobese	12.19	20	39.05	309.64	400	22.59
Preobese & Obese	13.12	20	34.4	343.34	400	14.16

Table No 5 Association between obesity & occupational physical activity

(n=553)

		Study Subject			
		Non-obese	**Pre-obese & obese**	**X^2**	**P value**
1	Sedentary	65	97	165.98	<0.001
2	Light	305	24	120.76	<0.001
3	Moderate	36	6	2.22	0.135
4	Heavy	16	4	0.16	0.6926
	Total	422	131		

Table no. 5 shows that according to physical activity pattern majority of pre-obese and obese were engaged in sedentary activity. The chi-square test revealed that association of sedentary physical activity and obesity was found to be statistically significant ($p< 0.05$).