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INCIDENCE OF OBESITY IN ADULT WOMEN

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Data ragarding age, weight height, anthropometric measuremnts, socio-economic factors thought responsible for obesity were compiled on 50 women, selected from various localities of Lyallpur, comprising two groups of 25 each of obese and thin subjects; indicated an increased weight gaining tendency with advancing age. The causation of obesity seemed multifactorial; genetic, metabolic, socioeconomic, and psychological factors all contribute to this discomfort. The role of early nutrition though not fully explicit, but over-feeding in early life resulted in permanent increase in weight. Lack of physical activity also appeared to play a part in its causation.

INTRODUCTION

Obesity may be defined as excessive accumulation of fat in the storage areas of the body or otherwise an increrse in body protoplasm. A person may be considered obese if one's body weight increases beyond 10 percent of the standard weight, calculated on the basis of age and height. Obesity may as well be due to the nutrient imbalance especially in starch and carbohydrate rich foods. Kaeding and Rohmann (1967) concluded from the dietary history of normal and overweight females, that the majortiy of overweight subjects had been overfed in their childhood. The daily average energy intake having been 1889 and 2823 K. cals. in normal and obese ladies respectivly. Furthermore overweight individuals tended to eat fewer full meals daily of compared to normal and thus the degree of obesity was found to be effected by the intake of foods than calories alone. Mohr and Gagech (1970) however observed that the ladies working in industry prefered low energy foods containing more of fruits, vegetables and cakes which helped them keep fit and slim. In his study Goldblatt *et. al.* (1965) reported that women belonging to lower status group suffered obesity six time more than those enjoying higher status. This they assigned to well balanced diet coupled with greater physical and social activeities for higher status women Bloom and Eidex (1967) observed the daily activities viz ; time in bed, time out bed and standing time of obese as well as lean subjects and found that obese subjects spent least time on their

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feet. They also tended to spend significantly more time in bed as compared to lean ladies. Osancova and Hesda (1969) stated that the consumption of high energy ill-balanced food, together with lack of exercise resulted in higher incidence of obesity. Women having none, one or both obese parents were studies by Rath *et. al.* (1970), who found greater incidence of obesity in subjects having both obese parents than those having one obese parent, whereas the occurance of obesity in ladies having lean parents was least of all. Thus he supported the general view point that the majority of obese ladies had definite history of obesity in their families as compared to those having histories of non obese parentage.

MATERIALS AND METHODS

Anthropometric studies included the measurements of body weight, for which a spring lever type weighing machine commonly called "foot balance" was used, whereas the height was taken in centimeters by making the subject stand barefeet keeping both feet parallel on a flat floor; and the back of the heels, buttocks, shoulders and the head touching the wall behind, with head held against the scale in a comfortably erect posture with both arms hanging at the sides.

Triceps skinfold thickness was measured using a locally fabricatted caliper having a mechanically standard presure exerting device. The site this measurement was selected halfway down the arm between the tip acromian process of the scapula and the olecranon process of the u skinfold parallel to long axis of the loosely hanging arm wa between the left hand thumb and the fore finger, way cle musculature and the measurement was thus recorded usi Abdominal circumference and round arm were mea tape using same one site in all the cases. The dat occupation, family income, family size, exerci habits, preferences and frequency of eati questionaire prepared for the purpose. P with the aid of a sphignomanometer d

To find out the relationship skinfold thickness and blood pressu and tested for the significance according

RESULTS AND DISCUSSION

Body weight : The data on average body weights in different age groups of obese and normal women are shown in table 1. The comparison of body weights revealed that the obese subjects were 11-57 percent overweight than their desired standard weights of corresponding ages and heights.

Table 1. *Average body weights of obese and normal women of comparable ages and heights.*

Age (yrs.)	Obese Height (cm)				Normal Height (cm)			
	145–147.5	150–152.5	155–157.5	160–162.5	145-147.5	150-152.5	155-157 5	160-162.5
	(a)							
15-19	54.55	—	67.73	69.10	35.45	33.64	50.00	—
20-39	67.55	76.64	74.84	73.18	40.00	45.24	50.1	52.27
40 and above	74.75	84.55	—	95.00	—	50.45	47.73	65.00

(a) Weight in kilograms.

Sixteen, 36 and 48 percent of the obese women fell respectively in 10, 15 and 20 percent overweight groups, which indicated majority of women as severly obese. The data further revealed that teenagers showed an average weight increase of 16 percent when compared with their normal counterparts. Whereas the adult ladies of 20—39 years and those above 40 years of age recorded an increase of 23.6 and 31 percent in their weights respectively as compared to their normal age group fellows, (Table 2). The results however showed an increasing trend of overweight with advancing age.

Table 2. *Agewise body weights of obese and normal women and Percent obesity*

Subjects	Age (years)		
	15—19	20—39	40 and above
Normal	39.7[a] (3)[b]	51.31 (18)	53.39 (4)
Obese	63.8 (3)	72.61 (18)	84.01 (6)
% Obesity	16.00	23.62	31.00

a = Weight in kilograms.

b = Number of Subjects.

Body Dimensions : From the data it is evident that abdomenal, circumference, round arm and skinfold thickness varied with the increase in weight and age (Table 3). The abdominal circumference in the obese ranged from 82.5 to 121.25 cm swith an average being 102.5 cm whereas the non obese had a mean abdomenal circumference of 79.25 cm. The mean value for round arm circumference in obese was 32.5 cm and in the non obese it was 25 cm. Skimfold thickness had an average of 23 millimeters in obese and 16 millimeters in the normal subject.

Table 3. *Average body Dimentions in obese and normal subjects*

Age	Weight	Obese			Weight	Normal		
(years)	(KG)	Abdominal circumference cm.	Round arm circumference cm.	Skinfold thickness (mm)	(KG)	Abdominal circumference (cm)	Round arm circumference (cm)	Skinfold thickness (mm)
15-19	63.80	87.50	30.40	25.00	39.70	63.32	21.90	13.33
20-39	72.60	101.75	31.55	28.50	51.04	80.00	25.00	16.34
40 and above	84.00	115.27	36.35	31.66	53.40	87.50	26.55	20.50

Eating habits and type of food : These investigations revealed that most of the obese and nonobese subjects had simple or mixed food and the obese took food only 2-3 times daily. Kaeding and Rohman (1968) studied the food habits of overweight and normal subjects and found that overweighted tended to eat fewer meals daily and that the degree of obesity was effected more by the use of wrong foods than by energy intake. Mohr and Gagsch (1970) also observed the food habits of obese females and found that they had a fewer overall energy intakes. The factor mainly influencing obesity therefore seems to be higher intake of calories which may have been independent of eating frequency under the prevalent dietary conditions.

Social Factors : It has also been found that 36 percent of the obese lay in low, 48 percent in middle and 16 percent in the high income groups. The data indicated that obesity was more common in middle class. Goldblatt *et al.* (1965) however reported that obesity was 6 times more common in women of lower than of higher status. Low income families here do not get enough food to meet their physiological requirements whereas middle class is comparatively better off. The high income groups seems to have otherwise

satisfying status conciousness. This could therefore be a reason for low incidence of obesity in high status population. No definite conclusions could however be drawn from the present study.

Exercise and physical activity : This investigation showed that most of the obese (80%) led sedentary habits. The students and those in service occupations were less prone to obesity. No marked difference was noticed with respect to sleeping time or time in bed of obese subjeets. Bloom and Ediex (1968) had however reported that the obese spent significantly more time in bed than the lean subjects.

The results further reveal that none of the obese subjects did take exercise. Osancova and Hesda (1969) reported that lack of exercise is important in the incidence of obesity. The data also show that most of the obese woman had a family history although a few nonobese also had the family history of obesity. This indicates that family history is not a pre determining factor of obesity. It is further suggested that family histosy and obesity might have been due to certain food habits and inherent characteristics of certain families rather than genetically controlled. Rath *et al.*. (1970) however stated that both obese and nonobese groups had a famiiy history relating obesity. Further work in this direction would cxplain the influence of family history upon the occurance of obesity.

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