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SOME SOCIAL AND DIETARY FACTORS ASSOCIATED WITH OBESITY AMONG ADULTS IN EGYPT

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ABSTRACT

A sample of 146 obese adults was matched with 183 non-obese adults to study the association of some social and dietary factors with occurrence of obesity. Triceps skinfold was used as a criterion for obesity among adults. There was no significant differences between obese and non-obese adults in the perception of obesity and knowledge towards causes of obesity. Significant differences were observed in eating while watching television ($p = 0.0002$) and cigarette smoking ($p = 0.03$). Obese adults were more likely to eat while watching television and not to smoke. Numbers of meals per day and eating outside home were not significantly associated with obesity. Among married females, age at marriage and number of pregnancies were significantly associated with occurrence of obesity ($p = 0.03$ and $p = 0.02$, respectively). Further in depth studies on factors affecting obesity among both children and adult are highly recommended.

Key Words : Obesity, social factors, dietary habits, Egypt

INTRODUCTION

In recent years obesity has become a public health problem of considerable importance. According to WHO (1990) obesity is becoming a universal problem in both affluent and less privileged population groups. Its occurrence reflects the interaction of dietary and other environmental factors. Potential contributing factors to obesity include sedentary life style, hereditability and higher energy intake, particularly excessive dietary fat. Earlier menarche, and earlier age at first child birth may be additional factors (Bruke et al. 1992). The problematic health aspect of obesity is due to its association with chronic disease. Obesity is strongly related to non-insulin dependent diabetes, which is a risk factor for coronary heart disease, other conditions associated with obesity include, hypertension, hyperlipidemia, respiratory disease and gall bladder disease. In the female, obesity may be a contributing factor to toxemia of pregnancy, osteo-arthritis, ovarian dysfunction and breast cancer (WHO, 1985). In the United States, the National Heart, Lung and Blood Institute Growth and Health study group (NHLBI,

1992) reported that race may be a possible etiological factor in obesity. They provided evidence that black young girls are more prone to obesity and hypertension compared to white girls.

This paper presents data concerning the potential correlates of obesity, namely dieting behaviour, some aspects of life style, knowledge and attitudes about obesity and reproductive history, obtained from adults of both sexes in Egypt.

METHODS

The adult involved in this study were 600 subjects of both sexes representing 10% of the employees of Alexandria University. Body measurements including height (cm) weight (kg) and triceps skinfold thickness (mm) were taken by trained researchers. A reference standard based on weight for height by age and sex was used (Jelliffe, 1966). Adults were screened for being overweight. Overweight individuals, were further screened for fatness taking the minimum level of obesity at triceps skinfold measurement > 23 mm for adult males and > 29 mm for adult females (Seltzer and Mayer 1965).

Of the total sample 146 (24.3%) were diagnosed as obese (16.4% males and 30.8% females). These subjects were matched with 183 non-obese adults having similar socio-economic backgrounds. The non-obese adults were selected from the same sample.

Adults were interviewed by nutritionists using a pretested questionnaire. Information was obtained from these subjects concerning knowledge about the cause of obesity, meal patterns, number of pregnancies of the mother and life style.

RESULTS

An appreciable proportion of the obese of both sexes did not perceive themselves as obese. Of these males, 59% considered themselves as obese compared to 55% among females (Table 1). The difference was not statistically significant.

Both obese and non-obese adults relate obesity to over-eating and lack of physical exercise. Heredity, pregnancy and psychological factors were also reported as causes of obesity. In addition, about one fifth of adults did not know the cause (Table 2). However, the difference was not statistically significant ($p = 0.3$).

The age at marriage (above or below 20 years) and the number of pregnancies by obese and non-obese females is shown in Table 3. A higher percentage of the obese females were married at a younger

TABLE 1
Perception of body image by obese adults in Egypt.

Body image	Obese males No.	%	Obese females No.	%	Both No.	%
Perceived as obese	26	59.0	56	54.9	82	56.2
Perceived as not obese	18	41.0	46	45.1	64	43.8
Total	44	100.0	102	100.0	146	100.0

$X^2 = 0.22$, $p = 0.7$

TABLE 2
Knowledge about the causes of obesity of obese and non-obese adults

Causes of obese	Obese		Non-obese	
	No.	%	No.	%
Over-eating	79	54.1	115	62.8
Lack of physical exercise	17	11.7	13	7.1
Pregnancy and heredity	9	6.1	6	3.3
Psychological	8	5.5	8	4.4
Do not know	33	22.6	41	22.4
Total	146	100.0	183	100.0

$X^2 = 4.6$, $p = 0.3$

TABLE 3
Age at marriage and number of pregnancies of obese and non-obese married females

Factor	Obese No.	Obese %	Non-obese No.	Non-obese %
Age at marriage*				
< 20 years	28	33.7	4	12.9
20 + years	55	66.3	27	87.1
No. of pregnancies**				
< 2	35	42.2	21	67.7
3 +	48	57.8	10	32.3
Total	83	100.0	31	100.0

* $X^2 = 4.81$, $p = 0.03$

** $X^2 = 5.8$, $p = 0.02$

age when compared to the non-obese. The difference was statistically significant (p = 0.03). Obese females experienced more pregnancies than the non-obese, and the difference was statistically significant (p = 0.02).

Questions concerning the number of meals per day indicates that the obese consume more frequent meals than the non-obese (37% compared to 34%), but the difference was not statistically different (p = 0.6). Eating outside the home was not a major part of their life-style by either obese and non-obese individuals (Table 4). A higher proportion of the obese eat while watching television (49% vs 18%), sleep after the lunch (61% vs 52%) and do not smoke (75% vs 64%). The differences were statistically significant for watching television (p=0.0002) and cigarette smoking (p = 0.03) (Table 5).

DISCUSSION

The etiological factors of obesity are complicated and seldom occur in isolation, but they all lead to increased storage of fat in the body. The prevalence of self-perceived obesity and dieting to lose weight differ depending on the situational and cultural contexts. What is considered normal body weight shows wide variations in different cultures. The perception of normal body weight in the Egyptian culture is based on having a plump and well-endowed body, hence obese individuals, particularly females, do not perceive themselves as obese.

Although it is a common knowledge to most obese as well as to the non-obese that obesity is caused by excessive intake of food compared to requirements yet a good number of the obese individuals do not watch their diet. Many of the obese individuals among the studied group associated eating with television watching and habitually fell asleep following the main meal in the afternoon. This may indicate that obese individuals consumed more energy than their non-obese peers. Furthermore, their energy expenditure was lower thus leading to increased fat storage in the body. However, such conclusion need further investigation.

Studies of twins show close correlation between the weight of identical twins even when they are reared in different environments. The environmental component plays an effective role in influencing the existence of obesity. The common family environment determines obesity in the family through the socio-economic and food habits, levels of energy intake and energy output and the total cultural context (Foster & Anderson, 1978).

The earlier onset of maturation of obese girls may have a role in the earlier age at marriage and the higher number of pregnancies.

TABLE 4
Meal patterns of obese and non-obese adults

Meal patterns	Obese		Non-obese	
	No.	%	No.	%
Number of meals/day*				
2-3	92	63.0	120	65.6
4 +	54	37.0	63	34.4
Eating outside home**				
Usually	20	13.7	22	12.0
Occasionally	87	59.6	112	61.2
Never	39	26.7	49	26.8
Total	146	100.0	183	100.0

* $X^2 = 0.23$, $p = 0.6$

** $X^2 = 0.21$, $p = 0.9$

TABLE 5
Some aspects of life-style of obese and non-obese adults

Patterns of lifestyle	Obese		Non-obese	
	No.	%	No.	%
Eat while watching T.V.*				
Eat more while watching	72	49.3	58	31.7
Do not eat more	28	19.2	72	39.3
No response	46	31.5	53	29.0
Sleeping after lunch**				
Sleep	89	61.0	95	51.9
Do not sleep	57	39.0	88	48.1
Cigarette smoking***				
Smoker	36	24.7	66	36.1
Non-smoker	110	75.3	117	63.9
Total	146	100.0	183	100.0

* $X^2 = 17.4$, $p = 0.0002$

** $X^2 = 2.7$, $p = 0.1$

*** $X^2 = 4.9$, $p = 0.03$

It has been suggested by some investigators that childbirth at a younger age and rearing children are determinants of obesity (Garn et al. 1986). Early marriage and early childbirth may contribute to an altered life-style among obese females. It may reduce their physical activity levels, decrease the likelihood of weight loss after childbirth and facilitate weight gain.

In conclusion, this preliminary study indicates that changes in lifestyle among Egyptian population may have a main role in prevalence of obesity. Lack of sound information on the causes as well as methods of prevention and managementof obesity may also contributed to the occurrence of obesity in this community. Further studies on factors associated with obesity among adults and children are urgently needed.

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وقائع حلقة العمـــل حـول

التغذية والأمراض المزمنة في دول شرق الأوسط العربية

(١٠ - ١٢ ابريل ١٩٩٤)

العين ـ دولة الإمارات العربية المتحدة

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