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The Effect of Socioeconomic and Cultural Factors on the Prevalence of Obesity Among Women in Benghazi

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ABSTRACT

Introduction: Obesity among women in Benghazi is a prominent issue which might be influenced by several social, economic and cultural factors. This applied study seeks to address the effect of these social, economic and cultural factors on the prevalence of obesity among women in Benghazi.

Materials and Methods: The study used a simple random sample, with a size of 232 women. The sample of women was collected from three health centers in Benghazi, including Sidi Hussein Health Center, Al-Kish Health Center and Al-Sirti Health Center. The researchers prepared a questionnaire (survey) which asked participants questions pertaining their marital status, level of education, income and viewpoints when it comes to obesity and overweight. Each participant completed the survey and the data was quantified and analyzed using percentages and SPSS (Statistical Package for the Social Sciences).

Results: Our findings indicate that there are high rates of obesity and overweight among women in Benghazi, with 28.9% of the sample being obese and 22.4% being overweight. Marital status seems to affect the incidence of obesity, with a p-value of 0.037 (statistically significant = p-value ≤ 0.05). The largest prevalence of obesity and overweight is among married women. Level of income also seems to have an impact on the prevalence of obesity, with a p-value of 0.002. The highest rates of obesity and overweight occur among women with low incomes. However, there is not enough significant evidence to indicate that there is a relationship between education level and weight.

Conclusion: Our study suggests that several socioeconomic and cultural factors influence the likelihood of a woman to be obese or overweight. Adhering to a healthy diet especially during pregnancy and breastfeeding might help decrease the prevalence of obesity. We also recommend increased physical activity. The government is also obliged to address social inequality and improve individuals' standard of living .

Introduction

Obesity is a complex health problem involving having too much body fat. Obesity is a medical problem that increases the risk of many diseases, including heart disease, diabetes, high blood pressure, high cholesterol, liver disease, sleep apnea and certain types of cancers. Obesity is defined as having a body mass index (BMI) over 30. The issue has grown to epidemic proportions, with over 4 million people dying each year as a result of being overweight or obese in 2017 (2).

The prevalence of excessive weight gain has doubled worldwide since 1980, and about a third of the global population has been determined to be obese or overweight (3). The rate of obesity is dramatically higher in both male and females, and in all age groups, with higher prevalence in older individuals (4). While this trend is present globally, absolute prevalence rates vary according to region, country, and ethnicity. The prevalence of obesity also varies with socioeconomic status, with slower rates of BMI increase in high-income and some middle-income countries. Obesity was once considered a problem in high-income countries like the United States, Sweden, Denmark, Norway, France, Australia and Japan. However, rates of obesity have decreased or plateaued since the early 2000s (5). In low and middle-income countries, rates of overweight and obesity are rising especially in urban areas. In China, one study, which was based on 12,643 participants monitored over 22 years, revealed that the prevalence of age-adjusted obesity rose from 2.15% to 13.99% in both sexes, going from 2.78% to 13.22% in females and from 1.46% to 14.99% in males (6,7). The overweight rate of African children under 5 years old has increased by 24% since 2000. As of 2019, almost half of the Asian children under 5 years old were obese or overweight (8).

Socioeconomic status (SES) is a significant factor related to obesity. SES can be determined using variables such as education, income and occupation, with education considered to be the most important variable over time (10).

However, despite the growth of research in obesity and its relation to chronic illnesses, it is surprising to see a lack in researchers that examine the social, economic and educational factors that contribute to obesity occurrence.

This leads us to quote the problem of the research, which is finding out whether or not these factors are related to obesity occurrence among women in Benghazi. Obesity is a complex condition with serious social and psychological dimensions. Hence, the idea of research is to identify the factors that contribute to the incidence of obesity, so that health programs can be developed to deal with these factors and treat them, resulting in reducing obesity rates, which benefits the different age groups at different levels of social and economic status.

Preventing obesity means reducing the prevalence of serious non-communicable diseases associated with diet, including diabetes, cardiovascular disease, hypertension, stroke and some forms of cancer (9).

Aim: to investigate the effect of socioeconomic and cultural factors on the prevalence of obesity among women in Benghazi.

Methodology

We conducted a cross-sectional survey during November 2016 to October 2017. The study included 232 women. The sample was a simple random sample collected from three health centers out of six working centers in the city of Benghazi (Sidi Hussein Center, Al-Kish Health Center and Al-Sirti Health Center). These health centers were selected because they were most populated among other health centers located in the same area.

The study was approved by the Ethics Committee of the Public Health College, University of Benghazi, Libya. For this investigation, a written consent of the General Director of the Primary Health Care Center was obtained. An informed consent for participation in the study was taken from all respondents. The study consisted of two parts: anthropometric measurements and questionnaire survey. Anthropometric measurements were taken on every individual including height and weight. A stadiometer tape measure was used for the height measurement. A portable digital scale was used to measure the participant's weight in kilograms. Anthropometric parameters were recorded, and body mass index (B<I) was calculated as weight divided by height squared (kg/m^2). The BMI categories were identified according to international standards as follows: underweight (<18.5 kg/m^2), normal (18.5-24.9 kg/m^2), overweight (25.0-29.9 kg/m^2), and obese (≥30.0 kg/m^2).

The data was collected by a questionnaire prepared by the researchers through a literature scanning. Data concerning socioeconomic and demographic factors (age, marital status, place of residence, education level, income, occupation). Participants were also asked about knowledge and attitude toward obesity and the problems which obesity can cause people. The purpose of this part is to assess people's attitudes toward obesity and its relation to chronic illness as well as their opinion about the ways to tackle obesity.

Data

Table (1): Socioeconomic and Demographic Characteristics of Respondents

Variable	Frequency	Percentage
Age		
20-30	93	40.1
31-40	74	31.9
41-50	37	15.9
51-60	14	6.0
more than 61	14	6.0
Marital statues		
Married	132	56.9
Unmarried	100	43.1

Place of residence		
Inside	170	73.3
Outside	61	26.3
Education level		
Primary	35	15.1
Secondary	71	30.6
High	126	54.3
Housing type		
Flat	72	31.0
House	124	53.4
Villa	36	15.5
Occupation		
wife house	68	29.3
employee	91	39.2
Student	73	31.5
Income		
Low	81	34.9
Mid	77	33.2
High	74	31.9

Table (2): Classification of Weights According to BMI

Weight	F	%
Underweight	24	10.3
Normal weight	89	38.4
Overweight	52	22.4
Obese	67	28.9
Total	232	100.0

Table (3): Physical Activity

	(%) Response
?Do you do physical activity	
Yes	(36.6%) 85
No	(63.4%) 147
Frequency of physical activity	
Daily	(16.4%) 38
Weekly	(6.5%) 15
Irregular	(13.4) 31
None	(63.8%) 148
Type of physical activity	
Walk	(23.7%) 55
Jim	(6.5%) 15
Others	(6%) 14
None	(63.8%) 148

Table (4): Knowledge and Attitude of Participants Regarding Obesity

	(%)Response N
?Have you ever heard about the following causes of obesity	
Genetic factors	(20.7%) 48
No exercise	(10.3%) 24
Work type	(26.7%) 62
Disease	(8.6%) 20
Drugs	(6.5%) 15
Others	(1.3%) 3
Many diseases	(25.9%) 60
?Have you ever heard of the ill effects of obesity	
Blood pressure	(13.4%) 31
Diabetes	(19.8%) 46
Heart	(14.7%) 34
Lung	(2.6%) 6
Others	(12.9%) 30
No disease	(20.3%) 47
Multi diseases	(16.4%) 38
Thoughts about treatment of obesity	
Diet	(36.6%) 85
Exercise	(15.1%) 35
Medical Treatment	(10.3%) 24
Others	(37.9%) 88
?What do you do if you notice any increase in your weight	
Change food	(30.2%) 70
Change sport	(10.8%) 25
See a doctor	(9.5%) 22
Go to nutritionist	(33.6%) 78
Others	(15.9%) 37
?Thought of participants about their weights	
Less than normal	(12.5%) 29
Normal	(40.5%) 94
Overweight	(28.0%) 65
obese	(19.0%) 44

Discussion

In the present study, we investigated the effect of socio-economic and cultural factors on the prevalence of obesity among women. The research indicated that the prevalence of overweight and obesity among women according to BMI was 22.4% and 28.9% respectively. Age was significantly associated with obesity in women, The results indicate that the prevalence of overweight and obesity were observed to be higher in ages of 20-30 years and 31-40 years, respectively. Authors from different countries previously published similar results. Indeed, similar observations were made in a prospective study conducted among Jordanian women (11), in a Kuwaiti population (12), and in a study in Nigeria (13).

In this present study, the analysis demonstrated the existence of a significant relationship between obesity and some socioeconomic variables, including employment status, women's income levels and marital status, while no significant relationship was found with education level or type of home. Our study found that overweight and obesity were more prevalent among those with higher levels of education and lower income groups. This may be explained by their low earning power and decreased knowledge of healthy nutrition. Their diets consist of more high calorie foods and simple carbohydrates, which are cheaper and easier to access. This result resembles another study conducted among the Bahraini population (14). A study conducted in Colombia also found that obesity was most prevalent in individuals with the lowest education level (18). Furthermore, the results of a survey conducted in Ira revealed a significant negative association between education and general obesity (15). In addition, the results from another study showed that an inverse relationship exists between the level of educational attainment and prevalence of obesity (16). The result shows that higher occurrences of obesity exist among married women when compared to single women. This can be explained by the fact that fat is accumulated during subsequent pregnancies that usually occur among married women. These findings are in accordance with several studies. In a study achieved by Sidik, S. M., and Rampal, L. (2009) who found that marital status was significantly associated with

obesity, where respondents who were married had a higher prevalence of obesity compared to those who were still unmarried (19). Findings similar to this are also seen in a study carried out in Morocco (17).
In regards to the opinion of respondents about the treatment of obesity, the result indicated that the majority of women in Benghazi believe that the change or reduction in food intake is most effective. In this study, women were observed to have sound knowledge about the treatment of obesity. This may be related to high education levels among these women. These findings are supported by a Korean study, using data from the Korea National Health and Nutrition Examination Survey (1998-2011), which found the most commonly used methods for obesity management were doing exercises and reducing food intake (20).

Conclusion

Marital status, age and income level were the most prominent factors affecting the incidence of overweight and obesity among women in Benghazi. Therefore, it seems that the most reasonable measures to take in decreasing the rates of overweight and obesity among this population involves increasing their awareness of the causes and detrimental health impacts of obesity, as well as seeking governmental involvement in decreasing social and economic inequalities that exist among these women. We recommend that these women adhere to a healthy diet, especially during pregnancy and breastfeeding. This may be done by increasing the consumption of fruits, vegetables and whole grains, as well as limiting the intake of sugars. We also recommend more physical activity and exercise among these women. Local government involvement might include providing facilities and equipment that might make a variety of exercises more accessible to more women. The government is also obliged to address economic inequalities and attempt to make healthy dieting more accessible.

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