Social, Lifestyle and Health Factors Associated with Obesity among Out-patients in Qatar

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This study aimed to investigate factors associated with obesity in patients attending out-patient clinics in Qatar. Patients aged 20 years and over who attended the out-patient clinics between 8 a.m. to 12p.m. for the period of one week in interviewed (457 patients). Of these patients only 346 were recorded their weight and height, and therefore included in the study. There was no significant association between factors studied and obesity. However, using logistic regression, it was found that the risk of obesity was higher among older people (odd ratio, OR=1.56) female (OR=1.74), married (OR=1.20) and those who watched television more than two hours a day (OR=1.22). People with a history of hypertension and cardiovascular diseases were also more prone to be obese. The findings revealed that obesity is caused by interaction between social and lifestyle factors.

Obesity is one of the most important risk factors for several chronic diseases such as cardiovascular diseases (CVD), diabetes, hypertension, arthritis and some types of cancer [1]. These diseases have become the main causes of death in Qatar and represent over 50% of total deaths [2]. Therefore, prevention and control of obesity is considered an important measure to control non-communicable chronic diseases in Qatar.

Studies on obesity in Qatar are very limited. Musaiger et al [3] have carried out a cross-sectional survey on 628 women aged 17-67 years who attended health centers in Doha, the capital of Qatar. They found that 62.6% of women were overweight or obese. Socio-economic factors such as age, marital status, education and age at marriage as well as chronic diseases such as hypertension and diabetes were significantly associated with obesity.

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The present study aims to investigate the social, lifestyle and health factors that could be associated with obesity among patients attending the outpatient clinics in Qatar.

METHODS

The target group of this study was patients attending outpatient clinics attached to Hamad General Hospital in Doha, the only governmental hospital in Doha. All patients aged 20 years and over who attended the outpatient clinics between 8 a.m. and 12 p.m. for the period of one week were interviewed. The total sample was 457. However, only 346 patients (75.7%) were included in the study, due to absence of data on weight or height or both of them in the rest of the patients.

The patients were interviewed by health workers using a pretested questionnaire. Information on the socio-economic background of patients, lifestyle patterns and occurrence of some chronic diseases was collected. Weight and height of patients were obtained based on self-reporting. The patients were asked to report their weight and height. Those who did not recall their weight or height were excluded from the study. Obesity was determined using the body mass index (BMI) which is defined as the weight in kilograms divided by height in square meters. Patients with BMI equal or above 25 were considered obese (overweight and obese), while those with BMI less than 25 were considered non-obese as described by Garrow [4].

Marital status was classified as currently unmarried and currently married. Employment status was grouped into unemployed (including housewife), and employed. Educational level was divided into low education, which included those who had education below secondary school level and high education, which included those who had secondary school level and above. Any person who consumed one or more cigarettes a day was considered as a current smoker, while non-smokers were those who did not smoke or former smokers. Occurrence of chronic diseases was obtained by asking the patients whether the doctor had told the patient if he/she had diseases.

Data were stored in a D-base file and analysed using the SPSS software package. Crude odds ratio and 95% confidence intervals were calculated by using the Epi-Info software programme. Unconditional logistic regression analysis was used to calculate the odds ratio (OR) and their corresponding 95% confidence intervals (CI), while adjustments were made for the effects of factors in the model.

RESULTS

The relationship between obesity and socio-demographic factors is presented in Table 1. The proportion of obesity was higher among patients aged 40 years and over (62.5%) compared to patients aged 20-39 years (56.7%). About 66% of women were obese, while the percentage was 56.4% in men. In general older subjects (odds ratio, OR=1.27), and female (OR=1.50) were more likely to be obese. However, there was no statistically significant association between socio-demographic factors and obesity in our sample.

There was no significant association between lifestyle patterns and obesity among patients studied. Nevertheless, the risk for obesity was higher among patients with hypertension (OR=1.51) and cardiovascular diseases (OR=1.25). Non-smokers were less likely to be obese than smokers (OR=0.84), as shown in Table 2.

The social and lifestyle factors associated with obesity among patients studied using logistic regression was given in Table 3. The risk for obesity was higher among patients over 39 years (adjusted OR=1.56, CI, 0.92-2.64), females (adjusted OR=1.74, CI, 0.91-3.32), married (adjusted OR=1.20, 0.64-2.18), higher education (adjusted OR=1.20, CI, 0.66-2.13) and those who watched television more than 2 hours a day (adjusted OR=1.22, CI, 0.60-2.46). However, the association was still statistically not significant in all factors studied.

DISCUSSION

This is the first study in the Arab Gulf countries, which depends on self-reporting of weight and height of the people rather than taking these measurements with a weighing scale and stadiometer. The accuracy of the self-reporting was not checked, but we strongly believe that most patients attending outpatient clinics are aware of their actual weights and heights as these are routinely taken in the clinics. This is especially true when a relatively high percentage of patients have one or more chronic diseases that link to weight status.

The findings of our study were compared to a previous study done by Musaiger et al [3] among women attending health centers in Qatar. Our data showed that 66% of women attending outpatient clinics were obese (based on BMI $\geq$ 25). This result is very similar to those reported by Musaiger et al [3], as they found that the prevalence of obesity in women aged 17-67 years

was 62.9% using the same cut-off of BMI. This comparison could indicate that using the self-reporting of weight and height could be an appropriate method for measuring weight status among adults in this region, after some control.

In general 59% of patients attending outpatient clinics were overweight or obese. However, the risk was higher among women than men. This result is consistent with studies in the Arab Gulf countries [5,6]. The low physical activity of women compared to men and multi pregnancies were considered among the main factors leading to increase the occurrence of obesity among female in this region. In Kuwait, Saleh et al [7] found that the proportion of obesity (based on body fat) increased as the number of parity increased.

At age 40 years and over, the prevalence of obesity is increased compared to those aged less than 40 years. Studies in the Arab Gulf countries showed that obesity increased with age until age 50 years, then the prevalence decreased gradually. Kordy and El-gamal [8] found that the mean BMI of adult Saudis increased with age, and reached its peak at age 54 years; afterwards the mean declined.

Married, higher education and unemployed people showed a higher tendency to overweight or obesity compared to single, low education, and employed people. This is in line with other studies in Bahrain [9] and Saudi Arabia [10]. In Bahrain, for example, Musaiger and Al-Ansari [9] reported that married women have twice the risk of obesity of single women, while employed women have less risk of obesity than unemployed women. They attributed the reason for this to employed people being more exposed to society, and therefore more interested in taking care of their weight.

Contrary to some studies [11], the risk for obesity was higher among smokers than non-smokers, although the association was not statistically significant. This may be due to two reasons; first, many patients studied may quit smoking because they are advised by physicians to do so, especially as a relatively high percentage of patients had smoking-related chronic diseases (diabetes, hypertension and CVD). Second, the question on smoking did not include the number of cigarette smoked per day and ex-smokers, which would give a clear picture about smoking status in our subjects.

It is not surprising that walking did not show any association with obesity in this study. This is mainly due to the fact that people did not differentiate between walking in general and walking for the purpose of exercise. It is highly recommended for future studies that questions on exercise should be phrased in more detail and validated.

A tendency to overweight was observed among those who watched television for 2 hours or more a day. The association between viewing television and overweight was a subject of several investigations [12,13,14]. Mc Murray et al[12] found that watching television on non-school days was related to being overweight. However, when BMI analysis was adjusted for ethnicity and social status, there were no significant effects of television viewing on BMI. The study by Crawford et al [13] suggested that the link between obesity and television viewing is complex, and that television viewing may not be the simple marker of sedentariness we may have hoped.

In conclusion, although social and lifestyle factors did not show a significant association with obesity among patients attendeding out patient clinics, the risk for obesity was higher among women, older, unemployed and higher education people. These results are consistent with other studies in the region. The finding that the prevalence of obesity using self-reporting of weight and height is similar to that using actual measurements opens the door to study the validity of self-reporting method of weight and height to determine the obesity in adult people in the Arab Gulf countries. The self-reporting method is widely used in Western countries due to the accuracy of this method. In-depth studies on the prevalence of obesity in various age groups in Qatar, as well as on factors affecting obesity are urgently needed. The present study may provide useful data for such studies.

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Table 1. Risk of socio-demographic factors for occurrence of obesity among patients attending outpatient clinics in Qatar

Socio-demographic	Obese		Non-Obese		Odds Ratio	95% CI*
	No.	%	No.	%		
<u>Age (Years)</u>						
20 - 39	110	56.7	84	43.3	1.00**	
40+	95	62.5	57	37.5	1.27	0.81-2.01
<u>Sex</u>						
Male	137	56.4	106	43.6	1.00	
Female	68	66.0	35	34.0	1.50	0.91-2.50
<u>Marital Status</u>						
Currently single	35	58.3	25	41.7	1.00	
Currently married	170	59.4	116	40.6	1.05	0.57-1.91
<u>Employment</u>						
Unemployed	73	64.6	40	35.4	1.00	
Employed	132	56.6	101	43.4	0.72	0.44-1.17
<u>Educational level</u>						
Low education	101	58.0	73	42.0	1.00	
High education	104	60.5	68	39.5	1.11	0.70-1.74
<u>Nationality</u>						
Qatari	117	58.2	84	41.8	1.00	
Non-Qatari	88	60.7	57	39.3	1.11	0.70-1.75

*** 95% Confidence Intervals.**

**** Reference value for Odds Ratio.**

Table 2. Risk of lifestyle and health factors for occurrence of obesity among patients attending outpatient clinics in Qatar

Factors	Obese		Non-Obese		Odds Ratio	95%.C.I*
	No.	%	No.	%		
Smoking						
Smoker	61	62.2	37	37.8	1.00**	
Non-smoker	144	58.1	104	41.9	0.84	0.50-1.39
Practising exercise						
No	111	59.7	75	40.3	1.00	
Yes	94	58.8	66	41.2	0.96	0.61-1.51
Daily hours of watching TV						
< 2 hrs	38	59.4	26	40.6	1.00	
2+ hrs	167	59.2	115	40.8	0.99	0.55-1.79
History of diabetes						
No	82	58.6	58	41.4	1.00	
Yes	123	59.7	83	40.3	1.05	0.66-1.66
History of hypertension						
No	109	55.1	89	44.9	1.00	
Yes	96	64.9	52	35.1	1.51	0.96-2.39
History of cardiovascular disease						
No	142	57.7	104	42.3	1.00	
Yes	63	63.0	37	37.0	1.25	0.75-2.07

*** 95% Confidence Intervals.**

**** Reference value for Odds Ratio.**

Table 3. **Social and lifestyle factors associated with obesity among patients attending outpatient clinics in Qatar using logistic regression analysis**

Factors	Obese (No.)	Non-obese (No.)	Adjusted odds ratio	95% C.I.*
Age (years)				
20 - 30	110	84	1.00**	
40 +	95	57	1.56	0.92-2.64
Sex				
Male	137	106	1.00	
Female	68	35	1.74	0.91-3.32
Marital status				
Single	35	25	1.00	
Married	170	116	1.20	0.64-2.18
Educational level				
Low	101	73	1.00	
High	104	68	1.20	0.66-2.13
Nationality				
Qatari	117	84	1.00	
Non-Qatari	88	57	0.94	0.58-1.49
Employment				
Unemployed	73	40	1.00	
Employed	132	101	0.90	0.51-1.57
Smoking				
Smoker	61	37	1.00	
Non-smoker	144	104	0.70	0.42-1.20
Practising exercise				
No	111	75	1.00	
Yes	94	66	0.99	0.64-1.56
Hours of watching TV/day				
< 2 hrs	38	26	1.00	
2+ hrs	167	115	1.22	0.60-2.46

* 95% Confidence Intervals.

** Reference value for Odds Ratio.