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RESEARCH ARTICLE

Health related quality of life in obese patients attending family medicine clinic in 6th October city in Egypt

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Manuscript Info	*Abstract*
	Background: Obesity has reached epidemic proportions throughout the globe. There is an increased concern about obesity and its associated illnesses in the Arabic-speaking countries (East Mediterranean and northern Africa) and the factors which may be associated with it (Badran & Laher, 2011). According to WHO, the prevalence of obesity in Egyptian men was 22% and 48% in women (WHO, 2012). Obesity is not only a problem for the individual but is also a societal challenge because of its serious complications. Meanwhile, public awareness and understanding of obesity and its health impacts remain low in the region (El-Bayoumy et al., 2009). Aim of the study: The present study aim was to identify the risk factors of obesity among patients attending family medicine clinic in 6th October city in Egypt and to outline the health related quality of life among obese patients in the studied sample. Method: a cross sectional study was performed on 200 patients frequenting the family medicine clinic and were subjected to anthropometric measurements as well as interview to fill OSQOL and WHOQOL-BREF questionnaires. Results: The mean age of obese patients was (37.56 9.524) years, sixty percent of them were females. The majority of obese patients (88%) had positive family history and chronic diseases were significantly highly prevalent among the obese group like hypertension (33.33%), hypercholesterolemia (46.66%) and DM (17.33%). Concerning results of WHOQOL-BREF: Obese people had a significantly lower mean of physical domain (42.63±18.576), psychological domain (42.58±18.221), social domain (35.36±23.538) and environmental domain (43.67±19.536) than non obese group with significant difference. Conclusion: Lower quality of life was related to obesity, hence intense intra-sectoral and inter-sectoral efforts must be drawn to prevent and early detect obesity through programs that achieve weight gain prevention approaches

INTRODUCTION

Obesity is a chronic disease whose prevalence has been described as reaching epidemic proportions around the world (Larson and Story, 2008). The prevalence rates of overweight are not only rising but also apparently accelerating (Young People's Health, 2002). In 2005, the estimated total number of overweight and obese adults worldwide, were 937 million and 396 million respectively (Kelly et al., 2008), numbers that have doubled in comparison to 20 years ago (James et al., 2004). By 2030, these figures are projected to be 1.3 billion and 573 million for overweight and obese adults respectively (Kelly et al., 2008). Using either BMI or waist-hip ratio as indicators of obesity in Eastern Mediterranean region is one of the highest in the world (27.4%) compared to (26.7%) in Africa and (26.5%) in Europe (Yusuf et al., 2005). The high rates in the Eastern Mediterranean region (EMR) countries were attributed to economic improvement over the last 50 years in most of these countries that has

resulted in greater affluence and to diets that are higher in saturated fats. This nutrition trend has also been accompanied with a sedentary life style and increased level of stress. Consequently, the prevalence of obesity and other non communicable diseases has risen steeply (Galal, 2003; Ng et al., 2011). A review article about obesity in the Middle East revealed that the prevalence of obesity in adults has almost double than adolescence, creating a great burden on the health care in these countries. The prevalence of overweight in men ranged from 19.2% in Libya to 51.7% in Tunisia and 22% in Egypt. The corresponding proportion in women was 21.1% in Libya to 71% in Tunisia and 48% in Egypt (Musaiger, 2011). A study comparing overweight and obesity among Egyptian, Lebanese and Kuwaiti adolescent girls revealed that the latter girls had a mean BMI of 23.5±5.9kg/m2 compared with 22.5±5.2kg/m2 and 20.5±3.5kg/m2 respectively (Jackson et al., 2007). It seems that the problem of obesity is complicated as it is not only the amount of fat that play an important roe in health threatening, but also its distribution and location in the body; central (also described as intra abdominal or visceral) is more pathogenic (Prentice and Jebb, 2001; Lev-Ran, 2001). As a result of obesity complications, an obese person has a 50 to 100% increased risk of premature death from all causes compared to an individual with a healthy weight and severe obesity is associated with a 12-fold increase in mortality in 25 to 35 years old when compared to lean individuals (WHO, 2009). The negative impact of obesity is related not only to morbidity and mortality, but also to quality of life, which is defined by the WHO as "a broad ranging concept incorporating in a complex way the person physical health, psychological state, level of independence, social relationships and their relationship with the salient features of their environment" (Liou et al., 2005). Health related quality of life (HRQOL) has become a well established patient reported outcome for clinical trials in the past decade and is defined as a multidimensional construct, which encompasses an individual's subjective evaluation of his/her physical, emotional and social wellbeing (Shipper et al., 1996). Obese females report lower HRQOL compared to obese males. Furthermore, it is widely accepted that females, in general, report poorer body esteem/image and poorer emotional functioning compared to males. However, it is important to note that regardless of gender, adolescents with extreme obesity report significant impairments in these areas of functioning (Thomas et al., 2000; Galambos et al., 2004).

Aim of the work
The present study aims at identifying the risk factors of obesity among patients attending family medicine clinic in 6th October city in Egypt and to outline the health related quality of life among obese patients in the studied sample

Methodology
Study design: a cross sectional study was performed in family medicine clinic in 6th October city during the last trimester of the year 2014. Sample: a convenient sample consisting of 200 patients frequenting the family medicine clinic responded to the study and accepted to participate after explaining to them the nature, objectives and procedure of the study. Every participant was subject to the following: 1-Interview questionnaire addressing the socioeconomic level of the patient, family history of obesity and life style (smoking, addiction, dietary pattern and physical activity). 2- QOL was measured using the Obesity Specific Quality Of Life questionnaire including four dimensions: physical state, vitality, relations with other people and psychological state. The higher the score, the worse the quality of life (Le Pen et al., 1998). 3-The WHOQOL-BREF contains a total of 26 questions. It is composed of four domains (physical, psychological, social and environmental). The higher scores denote higher quality of life (WHO, 1996). 4-Anthropometric measurements: Weight measurement using a pre-calibrated electronic weighing scale. Height was measured with participant standing upright against a wall on which was affixed a height measuring device. Body mass index was calculated as weight in kg /height in square meters. Accordingly; individuals with a BMI between 25 and 29.9 were considered overweight, while individuals with a BMI of 30 to 34.9 were considered obese. Individuals with BMI 35 to 39.9 were considered moderate obese and those 40 and more were considered severe obese. Waist and hip circumference: in a lean person, the waist can be measured at its narrowest point. The hip is measured at its widest portion of the buttocks at left, and at the greater trochanters at right. Normal levels of waist circumference were set as less than 102 cm in males and less than 88 cm in females (Dobbelsteyn et al., 2001). Hence, the importance of investigating the effect of obesity on quality of life in all individuals to anticipate the problem and making efforts to reduce its burden.

Statistical analysis
Data have been cleaned, coded and analyzed using the Statistical package for Social Science (SPSS, version 19). Simple descriptive statistics as frequency and percentage distribution for categorical variables and mean with the standard deviation for quantitative variables were used. The median was also calculated for all scores and

non normally distributed variables. For comparative purposes, Chi square and Fisher exact tests were used for categorical variables, student-t and Z: Mann Whitney tests for quantitative variables. Appropriate inferential statistics was done with p less than 0.05 (level of significance).

Results

Table (1) showed the socio demographic characteristics of the studied subjects where the mean age of non obese persons was (34.23 ± 8.023) and obese patients was (37.56 ± 9.524) were comparable (p≥0.05). About 70 % of obese patients earned university degree versus 56% of those non obese with significant statistical difference (p<0.05). According to the reported chronic diseases among the studied sample, there was a higher proportion of chronic diseases among obese patients: hypertension (33.33%), bronchial asthma (13.33%), diabetes (17.33), joint pain (13.33) and hypercholesterolemia (46.66%) versus (14.00%, 6.00%, 4.00%, 6.00% and 20.00%) respectively in non obese persons with high significant statistical difference (p<0.001). Sixty percent of obese patients were females versus (74.00%) in non obese group. The percent of married persons in obese group was higher than in non obese one (53.33%) and (50.00%) respectively with significant difference (p<0.05). Family history of obesity was reported in (88.00%) of obese patients versus (60.00%) of non obese patients and the difference was highly significant. Table (2) illustrated the life style profile of studied sample and smoking did not appear to be a factor favoring being obese or not as percent of smoking and non smoking among the studied persons were comparable (80.00% and 20.00%) in both groups (p≥0.05). About (53%) of obese persons reported being on diet versus only (14.00%) in the non obese group with highly significant statistical difference. The majority of obese persons were inactive in terms of physical activity (96.67%) compared to (24.00%) of non obese persons, the difference was statistically highly significant (p<0.001). Table (3) portrayed the anthropometric measures of the studied persons; male obese patients and female obese patients had high measurements of waist to hip ratio (0.905 0.058) and (0.894 0.068) respectively than the non obese studied persons where the mean waist to hip ratio in males was (0.802±0.052) and in females was (0.788±0.061), the difference was statistically highly significant (p<0.001). Table (4) illustrated quality of life among obese and non obese studied persons: WHO-QOL-BREF: The obese patients had significantly lower physical domain mean percent score (42.63±18.576) than persons in non obese group (69.52±14.321), (p<0.001). Again, the mean percent score of physiological domain was significantly lower in obese patients (42.58±18.221) than that in non obese persons (67.469±12.124) (p<0.001). The mean percent score of social relationship domain (35.36±23.538) and environmental domain (43.67±19.536) in obese patients were significantly lower than results in non obese persons (68.82±12.354 and 68.68±13.52) respectively (p<0.001). OSQOL scale: results showed that the mean percent score of physical state, agility and suppleness and vitality domains were (62.03±17.683, 62.06±22.01 and 62.03±21.34) respectively.

Tables

Table (1): Socio demographic characteristics and chronic illnesses of participants in the study

Character	Non obese (n=50)	Obese (n=150)	Test (P)
Age (years)	N (%)	N (%)	
20-	17 (34.00)	56 (37.33)	
30-	14 (28.00)	42 (28.00)	
40-	9 (18.00)	20 (13.33)	
50-	8 (16.00)	27(18.00)	
60+	2(4.00)	5 (3.33)	
Mean ± SD	34.23 ± 8.023	37.56 ± 9.524	t=1.320 (≥0.05)
Sex			
-Male	13 (26.00)	60 (40.00)	
-Female	37 (74.00)	90 (60.00)	
Marital Status			X^2=13.079 (<0.05)
-Married	25 (50.00)	80 (53.33)	
-Single	20 (40.00)	55 (36.66)	
-Divorced	4 (8.00)	5 (3.33)	
-Widow	1 (2.00)	10 (6.66)	
Education			X^2=18.450 (<0.05)
Intermediate	4 (8.00)	20 (13.33)	

Secondary	18 (36.00)	27 (18.00)	
University	28 (56.00)	103 (68.66)	
Chronic diseases			
-Hypertension	7 (14.00)	50 (33.33)	X^2=32.082 (<0.001)
-Bronchial asthma	3 (6.00)	20 (13.33)	X^2=19.214 (<0.001)
-Diabetes	2 (4.00)	26 (17.33)	X^2=24.782 (<0.001)
Hypercholesterolemia	10 (20.00)	70 (46.66)	X^2=34.540 (<0.001)
-Joint pains	3(6.00)	20 (13.33)	X^2=26.253 (<0.001)
Family history of obesity			X2=18.018 (<0.001)
None	20 (40.00)	18 (12.00)	
Positive	30 (60.00)	132 (88.00)	

Table (2): Life style profile of studied sample

Style pattern	**Non obese (n=50)**	**Obese (n=150)**	**Test (P)**
Smoking			X^2=0.023 (≥0.05)
-No	40 (80.00)	120 (80.00)	
-Yes	10 (20.00)	30 (20.00)	
Currently on diet			X^2=19.658(<0.001)
No	43 (86.00)	71 (47.33)	
Yes	7 (14.00)	79 (52.66)	
Daily practice of physical activity			X^2=37.075 (<0.001)
None	12 (24.00)	145 (96.67)	
< 1 h	23 (46.00)	4 (2.67)	
1-2 h	15 (30.00)	1 (0.66)	

Table (3): Anthropometric measures among patients

Anthropometric measure	Non obese (n=50)		Obese (n=150)	
	Male (13)	Female (37)	Male (60)	Female (90)
BMI				
Mean ± SD	23.06 ± 1.139	21.71 ± 1.256	33.10 ± 4.086	33.13 ± 2.539
T test (P)	25.92 (<0.001)	54.46 (<0.001)		
Waist to hip ratio				
Mean ± SD	0.802 ± 0.052	0.788 ± 0.061	0.905 ± 0.058	0.894 ± 0.068
T test (P)	13.59 (<0.001)	15.95 (<0.001)		

Table (4): Quality of life among obese and non obese patients

Scale	Obese	Non obese	Test
WHO-QOL-BREF			
Physical domain Mean±SD	42.63±18.576	69.52±14.321	Z=15.221 P<0.001
Psychological domain Mean±SD	42.58±18.221	67.469±12.124	Z=15.654 P<0.001

Social relationship domain Mean±SD	35.36±23.538	68.82±12.354	Z=14.623 P<0.001
Environmental domain Mean±SD	43.67±19.536	68.68±13.52	Z=14.261 P<0.001

Discussion

Obesity is a complex condition associated with a wide range of serious health complications and reduced health related quality of life HRQOL (Koloktin et al., 2001). The present study revealed that obese and non obese patients had similar middle age and female gender showed more in the obese group. The study revealed that being married might be a factor to which obesity was associated (53% of obese were married), this came in accordance with results of the study of Atek and his colleagues in 2013 in which they compared the socio demographic characteristics of obese and non obese individuals and found that the prevalence of obesity was higher among married than single women, also in their study men with non university education were more prone to obesity which contradicts results of our study (68%) of obese people earned university degree: this might be explained by the easy accessibility and eligibility of most of young people to different university studies (Atek et al., 2013). Positive family history is strongly implicated in obesity in the present study as it was present in (88%) of obese studied patients; this was conform with many studies which accumulated evidence on the role of genetic component in the risk of becoming obese (Lyon and Hirschorn, 2005). Not only families shared the same genetics but also share similar habits and style of living that can determine the nature and type of food they are consuming as well as tendency to practice exercises (Striegel-Moore et al., 2008). Results of the present studies revealed that many co morbidities were highly prevalent in obese patients than in non obese ones with significant difference. This confirm many studies results like that of Lubrano and his associates in (2012) which stated that obesity was associated with type 2 diabetes (DM), dyslipedemia, cardiovascular disease and, cancer and obstructive sleep apnea. The present sudy revealed that hypertension showed in 33.33% of obese patients versus only (14.00%) in non obese ones. A follow up study showed also a significant increase in the incidence of hypertension among the obese participants (Ibhazehiebo et al., 2007). In the present study, Dm seems to be strongly associated with obesity as its prevalence was (17.33%) in obese patients compared to (4.00%) in non obese group with significant difference. These results were consistent with several studies which also revealed a close relation between obesity and DM. In some areas as the United Kingdom, approximately86% of patients with type 2 DM were overweight or obese (Daousi et al., 2006). Also, in Australia, 53% of patients with type 2 DM were obese (Thomas et al., 2006).In the present study, smoking doesn't seem to be linked to obesity as prevalence of smoking was the same in the obese and non obese studied groups. This was supported by Sturm and Wells who examined data from Healthcare for Communities, a national household telephone survey fielded in 1998. Approximately 10,000 respondents participated in the survey, which was designed to be nationally representative. Their study revealed that obesity was linked to very high rates of chronic illnesses much higher than smoking or drinking (Roland & Kenneth, 2002).Absence of practicing physical activity might be a strong factor related to obesity in the current study as results showed that most of obese patients did not practice activity (97%) compared to (24%) in the non obese group with highly significant difference.This result goes with that of a study by a team of Stanford University School of Medicine researchers by examining national health survey results from 1988 through 2010, the researchers found huge increases in both obesity and inactivity, but not in the overall number of calories consumed. The research highlights the correlation between obesity and sedentary lifestyles, but because it is an observational study, it does not address the possible causal link between inactivity and weight gain (Becky Bach ,2014). Morbidity and mortality are not the only 2 consequences of obesity, health related QOL including domains related to physical, mental, emotional and social functioning is also impacted by obesity (Song et al., 2010). Results of the present study outlined the tendency of obese patients to have a significantly lower mean scores on the WHO QOL-BREF than the non obese ones. This trend was consistently observed on the physical, psychological, social relationship and environmental domains of the scale. They also had a significantly lower score of the whole scale indicating a lower quality of life than the non obese. These results were consistent with results from a representative random sample of 4110 people noted that excess weight had a negative impact on HRQL even for people without chronic diseases (Serrano-Aguilar et al., 2009). Multiple evidence which is available through many studies over the whole world provides support for this relationship. The 2003 health survey for England of 14416 individuals noted a significant correlation between BMI and HRQL in men and women (Soltoft et al., 2009). Also, a cross sectional hospital based study of 448 korean adults aged 20-80 years noted that the impact of overweight on obesity related quality of life was different for gender and age groups where women had a poorer obesity related quality of life compared to men (Song et al., 2010).

Conclusion

The current study portrayed the relation between Lower quality of life and obesity, hence intense intra-sectoral and inter-sectoral efforts must be drawn to prevent and early detect obesity through programs that achieve weight gain prevention approaches and environmental strategies addressing the harmful effect of inadequate physical activity.

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