Psychological Assessment of Emirati Patients Pursuing Bariatric Surgery for Obesity

Ossama T. Osman, MD[a,*]; Essam Emam, MD[b]; Taoufik Zoubeidi, PhD[c]; Fadwa Al-Mugaddam, MS[a]; and Abdul-Kader Souid, MD, PhD[a]

ABSTRACT

Background: Obesity is currently a rapidly growing global problem of epidemic proportions and is especially prevalent in economically developed countries such as the United Arab Emirates. Obese individuals are increasingly considering bariatric surgery as their preferred means of choice for the reduction of excess body fat. This study explored the psychological characteristics that may potentially complicate the surgical management of obesity.

Methods: This was a cross-sectional study of Emirati patients attending a bariatric clinic at Tawam Hospital, Al Ain, United Arab Emirates, between December 2010 and February 2012. Participants were assessed using standard clinical psychiatric interviews. Also used were screening instruments such as the Hospital Anxiety and Depression Scale, Sheehan Disability Scale (SDS), Body Image Quality of Life Inventory (BIQLI), and Multidimensional Body-Self Relations Questionnaire–Appearance Scale (MBSRQ-AS).

Results: A total of 105 patients, 70% of whom were female, participated in this study. Participants were found to have frequencies of anxiety and depressive symptoms at levels of 24% and 13%, respectively. Participants also reported perceived functional disabilities in the following: work/school (27%), social life (36%), family/home (35%), and religious duties (39%). A total of 13 participants (12%) had BIQLI scores showing slight-to-moderate effects on their quality of life. The mean MBSRQ-AS subscale on self-classified weight was higher than the reported norms. Anxiety and depressive symptoms positively correlated with functional impairment (SDS) and negatively correlated with quality of life (BIQLI) ($P = .000$). MBSRQ-AS subscales significantly correlated with depression, functional impairment, and quality of life ($P \leq .035$).

Conclusions: Anxiety, depression, perceived functional disability, impairment in quality of life, and disturbance of self-image were found to be common among participants in the study pursuing bariatric surgery for obesity. Recognition, assessment, and treatment of these symptoms are expected to be conducive to positive outcomes of bariatric surgery.

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[a]Departments of Psychiatry and Behavioral Sciences, College of Medicine and Health Sciences, United Arab Emirates University, Al Ain, United Arab Emirates

[b]Department of Psychiatry, Tawam Hospital, Al Ain, United Arab Emirates

[c]Department of Statistics, College of Business and Economics, United Arab Emirates University, Al Ain, United Arab Emirates

**Corresponding author:* Ossama T. Osman, MD, College of Medicine and Health Sciences, United Arab Emirates University, PO Box 17666, Al Ain, UAE (ossamao@uaeu.ac.ae).

The incidence of obesity is increasing worldwide.[1] Many obese individuals pursue bariatric surgery as a preferred treatment of choice.[2] It is suggested that the psychological assessment of obese individuals is essential in order to (1) determine their level of competence in the decision-making process, (2) identify disorders that may complicate or preclude such surgery, (3) ensure the individual's awareness of the potential psychological consequences arising from bariatric surgery (eg, depression and suicidality), (4) confirm appropriate levels of motivation for postoperative compliance, and (5) explain issues concerning on-going functional health (eg, the consequences of nutritional deficiency).[3–6]

The rising incidence of obesity in the United Arab Emirates suggests serious health concerns.[7] Numerous comorbid illnesses add to the disease burden from obesity. These conditions include chronic inflammation, dyslipidemia, cardiovascular disease, hypertension, stroke, diabetes, metabolic syndrome, respiratory symptoms (eg, sleep apnea and asthma), gastrointestinal problems (eg, gallbladder disease and gastroesophageal reflux), certain cancers, and psychological symptoms. Economic costs are also an issue.[8–10] In our experience, the number of bariatric surgeries carried out in the United Arab Emirates has increased in direct proportion to the rise in the incidence of obesity in the region. This study aimed to identify psychological characteristics that may adversely affect the outcome of obesity or its planned surgical intervention.

METHODS

This cross-sectional study involved bariatric surgery patients attending the Psychiatric Clinic for Preoperative Assessment at Tawam Hospital, Al Ain, United Arab Emirates, between December 2010 and February 2012. During this period, 150 patients were referred by bariatric services for routine psychiatric assessment. Of these, a random 127 patients were invited to participate in this study. A total of 105 patients (80%) agreed to participate. The study was approved by the Al Ain Medical District Human Research Ethics Committee Review Board. Informed consent was obtained from each patient.

Patients were evaluated in a prospective design, having been first assessed by a psychiatrist in face-to-face interviews. Anxiety and depressive symptoms were then scored using the Hospital Anxiety and Depression Scale (HADS).[11] This instrument identified symptoms on a scale of 0–21, with 0–7

Clinical Points

- Anxiety, depression, perceived functional disability, impairment in quality of life, and disturbance of self-image are common in patients pursuing bariatric surgery for obesity.
- Recognition and treatment of these psychological symptoms are expected to be conducive to the positive outcome of bariatric surgery.

representing normal, 8–10 representing a concern/monitor for change, and 11–21 representing a probable clinical case requiring assessment. Only the latter category was considered positive for anxiety or depressive symptoms.[11]

In addition, perceived functional disability was evaluated on 4 responsibility domains using the Sheehan Disability Scale (SDS)[12]: work/school, social life, family/home, and religious duties. This 10-point-per-domain, visual analog scale measured self-reported impairments. Domains were analyzed separately. Scores were then added together to produce a single functional impairment score that ranged from 0 (unimpaired) to 40 (highly impaired).[12] A score ≥ 5 on any domain or a total score of 20 indicated the necessity for monitoring.[12]

Quality of life was assessed using the Body Image Quality of Life Inventory (BIQLI).[13] This self-report 19-item scale (+3 very positive effect to −3 very negative effect, zero indicating no effect) measured the impact of body image on psychosocial functioning. Lower scores correlated with lower body satisfaction and associated psychological comorbidities.[14,15]

The 34-item Multidimensional Body-Self Relations Questionnaire–Appearance Scale (MBSRQ-AS)[16] was used in the assessment of self-attitudinal aspects. These aspects included the subscales appearance evaluation, appearance orientation, body areas satisfaction, overweight preoccupation, and self-classified weight.[17,18] Reported mean ± SD scores (minimum of 1 and maximum of 5 per item) for subscales for normal females were 3.36 ± 0.87, 3.91 ± 0.60, 3.23 ± 0.74, 3.03 ± 0.96, and 3.57 ± 0.73, respectively. The corresponding values for normal males were 3.49 ± 0.83, 3.60 ± 0.68, 3.50 ± 0.63, 3.47 ± 0.92, and 3.96 ± 0.62, respectively.[16]

Statistical Analysis

Frequencies were determined for the categorical variables. The Pearson correlation was used to investigate relationships between scales and quantitative variables. The Kruskal-Wallis test was used to compare functional disability scores with age at onset of obesity, as normality of the scores was not fulfilled.

RESULTS

Sample characteristics are shown in Table 1. Among participants, the prevalence of hypertension was 17%, diabetes was 13%, and sleep apnea was 4%. A total of 27 patients (26%) had family members with obesity issues. Fifty-six patients (53%) were either single or divorced (. Early-onset obesity (childhood or adolescent) was present in 77 patients (73%). Comorbid medical problems were common in all patients, and 33% of patients reported regular physical activities (mean ± SD = 58 ± 36 hours/mo [median = 60]). Time spent in television viewing or computer use was 254 ± 218 hours/mo (median = 180).

Table 1. Characteristics of the Bariatric Surgery Patients (N = 105)[a]

Characteristic	Patients
Age, mean ± SD (median), range, y	31 ± 9 (30), 18–53
Body mass index (kg/m^2), mean ± SD (median), range	48 ± 10 (45), 36–96
Weight (kg), mean ± SD (median), range	128 ± 27 (122), 85–250
Marital status	
Married	47 (45)
Single	42 (40)
Divorced	14 (13)
Widowed	2 (2)
Sex	
Females	74 (70)
Males	31 (30)
Occupation	
Employee	41 (39)
Housewife	38 (36)
Students	20 (19)
Unemployed	6 (6)
Onset of obesity	
Childhood	43 (41)
Adolescent	34 (32)
Adulthood	28 (27)
Comorbid medical problems	
Sleep interruption	58 (55)
Snoring	55 (52)
Life stressors	40 (38)
Hypoventilation	8 (8)
Guilt vomiting	4 (4)
Motivation(s) for weight loss	
Health complaints	88 (84)
Appearance	59 (54)
Work fitness	19 (18)
Spouse pressure	7 (7)
Dietary habits	
Self-dieting	12 (11)
Followed by dietitian	19 (18)
Both	67 (64)
Binge eating	68 (65)
Perceived reason for obesity	
Poor diet	73 (29)
Low physical activity	43 (41)
Both	18 (17)

[a]Values are number (%) of patients or as designated.

The psychological characteristics of the patients are shown in Table 2. The prevalence of anxiety and depressive symptoms (HADS score) was 24% and 13%, respectively. A total of 20% of patients had SDS sum scores ≥ 20, indicating the necessity for monitoring. The prevalence of perceived functional disability on the SDS for work/school was 27%, for social life was 36%, for family/home was 35%, and for religious duties was 39%. Thirteen patients (12%) had BIQLI scores showing slight-to-moderate effects on their quality of life. The mean MBSRQ-AS subscale scores on self-classified weight were higher than the reported mean values for normal males and females.

Correlations between measured psychological scores are shown in Table 3. Anxiety and depressive symptoms were positively correlated with functional impairment (SDS) and negatively correlated with quality of life (BIQLI) ($P = .000$). The MBSRQ-AS scores on appearance evaluation and body areas satisfaction correlated significantly with both depressive symptoms ($P = .001$ and $P = .034$, respectively) and SDS sum scores ($P = .007$ and $P = .025$, respectively).

The incidence of depressive symptoms rose in line with increasing functional scores on social life ($P < .001$), family/home ($P < .001$), and religious duties ($P < .001$) but not on work/school ($P = .082$). The incidence of anxiety symptoms rose in line with increasing functional scores on social life ($P < .001$) and family/home ($P = .001$) but not on work/school ($P = .197$) or religious duties ($P = .193$). Adult-onset obesity positively correlated with the family/home score ($P < .001$) but with no other SDS domain.

Table 2. Psychological Characteristics of the Bariatric Surgery Patients (N = 105)

Scale	
Hospital Anxiety and Depression Scale	
Anxiety symptoms, n (%)	
Normal (scores 0 to 7)	66 (66)
Cause for concern (scores 8 to 10)	10 (10)
Requiring assessment (scores 11 to 21)	24 (24)
Depressive symptoms, n (%)	
Normal (scores 0 to 7)	63 (63)
Cause for concern (scores 8 to 10)	24 (24)
Requiring assessment (scores 11 to 21)	13 (13)
Sheehan Disability Scale	
Sum score (mean ± SD) = 12.2 ± 8.8	
Scores < 20, n (%)	84 (80)
Scores ≥ 20, n (%)	21 (20)
Work/school score (mean ± SD) = 2.4 ± 3.1	
Scores < 5, n (%)	77 (73)
Scores ≥ 5, n (%)	28 (27)
Social life score (mean ± SD) = 3.1 ± 3.1	
Scores < 5, n (%)	67 (64)
Scores ≥ 5, n (%)	38 (36)
Family/home score (mean ± SD) = 3.1 ± 3.0	
Scores < 5, n (%)	68 (65)
Scores ≥ 5, n (%)	37 (35)
Religious duties score (mean ± SD) = 3.5 ± 3.6	
Scores < 5, n (%)	64 (61)
Scores ≥ 5, n (%)	41 (39)
BIQLI	
Score of the 19 items, mean ± SD (median), range	0.32 ± 1.13 (0.37), −2.16–2.58
Scores 0 to −1 (no to slight negative effect), n (%)	34 (32)
Scores −1 to −2 (slight to moderate negative effect), n (%)	13 (12)
Scores −2 to −3 (moderate to severe negative effect), n (%)	1 (1)
MBSRQ-AS, mean ± SD (median), range	
Women	
Appearance evaluation	2.19 ± 0.68 (2.14), 1–4
Appearance orientation	4.08 ± 0.58 (4.00), 2.92–5
Body areas satisfaction	2.55 ± 0.64 (2.56), 1–3.89
Overweight preoccupation	3.54 ± 0.72 (3.63), 2–5
Self-classified weight	4.47 ± 0.64 (4.50), 2.5–5
Men	
Appearance evaluation	2.39 ± 0.63 (2.43), 1–3.43
Appearance orientation	3.83 ± 0.58 (4.00), 2.5–4.83
Body areas satisfaction	2.71 ± 0.57 (2.67), 1.56–4
Overweight preoccupation	3.58 ± 0.73 (3.50), 2–5
Self-classified weight	4.42 ± 0.83 (4.50), 2–5

Abbreviations: BIQLI = Body Image Quality of Life Inventory, MBSRQ-AS = Multidimensional Body-Self Relations Questionnaire–Appearance Scale.

DISCUSSION

Recent socioeconomic changes in the United Arab Emirates have fashioned a new local dietary and lifestyle culture that has caused a rise in the epidemic of obesity and related complications. Obesity and related complications especially adversely affect females in the United Arab Emirates due to their low participation rates in regional health-promoting activities.[7–10] This finding is clearly demonstrated in the current study—most patients were female, many of whom chose readily available and affordable bariatric surgery.

Psychiatric conditions are prevalent among candidates for weight loss surgery.[3,4] In 1 study,[3] two-thirds of patients had a lifetime history of 1 or more Axis I psychiatric disorders, while one-third met the criteria for at least 1 Axis II psychiatric disorder. In another study,[5] 18% of bariatric surgery candidates failed to pass psychiatric screening to pursue surgery because of an eating pathology, uncontrolled psychopathology, or a difficulty with life stressors. The presence of depressive symptoms was associated with a less favorable surgical outcome.[6] In 1 study,[19] patients with night-eating syndrome or a binge-eating disorder had more symptoms of depression and other psychological complications than those with no such disorders. Other studies[20,21] supported similar findings. The results of this study highlight the need for structured, psychological, preoperative evaluations of patients together with close, postoperative follow-ups.[22,23]

Consistent with published reports,[24–33] this study identified significant anxiety, depression, perceived functional disability, impairment in quality of life, and disturbance of self-image in patients pursuing bariatric surgery (see Table 2). The results emphasize the importance of recognizing, assessing, and managing these psychological problems to improve surgical outcomes. There were no study limitations.

The regular 3-dimension version of the SDS was extended to include a fourth dimension: a patient-rated measure of disability and impairment in religious function. This dimension sought to identify the degree to which problems with obesity led to impairment in the ability to practice spiritual duties, such as daily prayers. Patients in the current study identified this domain as a meaningful dimension. Religious practice was vital to participants both quantitatively (daily prayer times) and qualitatively (being able to concentrate enough during religious functions). The inclusion of this dimension is therefore recommended in

Table 3. Correlations Between the Measured Psychological Scores (N = 105)[a]

	Anxiety Score	Depression Score	SDS Sum Score	BIQLI Mean Score
HADS-depression	0.61 (.000)			
SDS sum score	0.35 (.000)	0.56 (.000)		
BIQLI mean score	−0.43 (.000)	−0.54 (.000)	−0.430 (.000)	
MBSRQ-AS	Body areas satisfaction = −0.19 (.062)	Appearance evaluation = −0.32 (.001) Body areas satisfaction = −0.21 (.034) Appearance orientation = −0.18 (.079)	Appearance evaluation = −0.26 (.007) Body areas satisfaction = −0.22 (.025) Self-classified weight = 0.19 (.048)	Appearance evaluation = 0.52 (.000) Body areas satisfaction = 0.38 (.000) Self-classified weight = −0.29 (.003) Overweight preoccupation = 0.21 (.035)

[a]Values are Pearson coefficients; values in parentheses are *P* (2-tailed significance).
Abbreviations: BIQLI = Body Image Quality of Life Inventory, HADS = Hospital Anxiety and Depression Scale, MBSRQ-AS = Multidimensional Body-Self Relations Questionnaire–Appearance Scale, SDS = Sheehan Disability Scale.

the assessment of functioning/disability in Eastern Arabian culture.

The instruments used in this study have been shown to be practical and useful in screening for both psychiatric symptoms and impairment in functioning in patients in the United Arab Emirates region. The instruments uncovered associations between severe obesity and significant psychiatric comorbidities, including depression and anxiety. The results also highlight the need for the engagement of primary care providers in the screening of obese patients for psychiatric symptoms, especially those patients seeking or pursuing bariatric surgery.

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