Depression and Anxiety in Obese Patients

Obezite Hastalarında Anksiyete ve Depresyon Düzeyleri

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Abstract

Objectives: Epidemiologic data suggests an association between obesity and depression. However, a limited number of studies have investigated the prevalence of psychiatric symptoms among obese patients without a psychiatric diagnosis. The objective of this study was to determine psychiatric diagnosis in patients with obesity who applied to the endocrinology department and to determine the pattern of the depression and anxiety symptom levels in obese patients without a psychiatric diagnosis.

Materials and Methods: 62 patients with obesity (obesity group) and 27 control subjects (control group) attending the endocrinology outpatient clinic were included in the study. Body mass index was calculated and diagnostic psychiatric assessment carried out for all patients. All participants were evaluated using the Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A).

Results: Total scores obtained both from HAM-D and HAM-A were significantly greater in the obesity group than in the control group. The most common psychiatric diagnose among obese patients was depression. Nearly more than half of the obese patients without any psychiatric diagnosis marked one of the HAM-D items which describes depressed mood, guilt feeling, somatic anxiety, work and activity loss and general somatic symptoms as well as the items within the HAM-A scale which describes anxious mood, tension, cognitive difficulties, insomnia, depressed mood, somatic anxiety, cardiovascular, respiratory, gastrointestinal and autonomic symptoms.

Conclusion: Most common psychiatric diagnosis in patients with obesity was major depressive disorder. Obese patients who have not been diagnosed with any psychiatric disorder also show certain anxiety and depressive symptoms. The presence of anxiety and depressive symptoms in patients having any psychiatric disorder may be due to the psychosocial effects of obesity and these symptoms should be followed up in obese patients so that psychiatric disorders can be determined earlier. *Türk Jem 2011; 15: 121-4*

Key words: Anxiety, depression, obesity, psychiatric diagnosis

Özet

Amaç: Epidemiyolojik çalışmalar obezite ve depresyon hastalıkları arasında bir ilişki olduğunu göstermektedir. Ancak az sayıda çalışmada psikiyatrik tanı almayan obez hastalarda belirti dağılımı araştırılmıştır. Bu çalışmanın amacı, endokrinoloji bölümüne başvuran obez hastalarda psikiyatrik tanıları araştırmak ve psikiyatrik tanı almayan obez hastalarda depresyon ve anksiyete belirtilerinin dağılımını incelemektir.

Gereç ve Yöntemler: Endokrinoloji polikliniğine başvuran obesite tanılı 62 hasta ve 27 kontrol hastası çalışmaya dahil edilmiştir. Tüm hastaların beden kitle indeksi hesaplanmış ve psikiyatrik tanıları araştırılmıştır. Tüm hastalara Hamilton Depresyon Skalası (HAM-D) ve Hamilton Anksiyete Skalası (HAM-A) uygulanmıştır.

Bulgular: HAM-D ve HAM-A puanlarının obezite grubunda kontrol grubuna göre daha yüksek olduğu saptanmıştır. Obez hastalar arasında en sık görülen psikiyatrik tanı ise depresif bozukluktur. Herhangi bir tanı almayan obez hastaların yarısından fazlasının HAM-D ölçeğinde en sık belirgin depresif ruh hali, suçluluk duygusu, somatik anksiyete, iş ve aktivite kaybı ve genel somatik belirtileri tanımlayan maddeleri işaretledikleri görülmüştür. HAM-A ölçeğinde ise en sık endişeli ruh hali, gerginlik, bilişsel zorluklar, uykusuzluk, depresif ruh hali, somatik anksiyete, kardiyovasküler, gastrointestinal solunum ve otonomik belirtileri sorgulayan maddeler işaretlenmiştir.

Sonuç: Araştırmamızda obezitede en sık görülen psikiyatrik hastalık major depresif bozukluk olarak saptanmıştır. Herhangi bir psikiyatrik tanı almayan obez hastaların önemli bir bölümünde bazı anksiyete ve depresyon belirtilerinin olduğu görülmüştür. Tanı almayan kişilerde bu anksiyete ve depresyon belirtilerinin varlığı obezitenin psikososyal etkileri sonucunda ortaya çıktığı düşünülebilir ve bu belirtileri gösteren hastaların takip edilmesi ortaya çıkabilecek psikiyatrik bozuklukların erken tanınabilmesi açısından önemlidir. *Turk Jem 2011; 15: 121-4*

Anahtar kelimeler: Anksiyete, depresyon, obesite, psikiyatrik tanı

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Introduction

Obesity still remains a public health problem and has been reported to have a negative impact on physical health and psychological well-being. Among US adults, prevalence of obesity (defined as a Body Mass Index [BMI] of 30 or more) increased from approximately 23% in 1990 to 31% in 2000 (1) while the prevalence of depression is 10%. This indicates that there is a probability that they will co-occur. There does not appear to be a simple or single association between these disorders (2). The etiological cause of predisposition to both depression and obesity may coexist in the genomes of some persons but not others, or under appropriate environmental conditions (3). Depression and obesity might in fact represent different manifestations of the same disease process. More specifically it has been reported that, obesity is the clinical manifestation of a subtype of depression similar to that of atypical depression (4). While several studies report that the relationship between obesity and depression differs for men and women, most studies have shown that obese women are more vulnerable than obese men to the development of psychiatric and psychological disorders (5). In a population-based study, the prevalence of depressive mood in adults was found very high among young women who were overweight or obese compared to that in young women who were neither overweight nor obese and the association of depressive mood and its sustenance with obesity status was found clearly dependent upon gender, age, and education (6). Other data showed a positive relationship between depression and obesity among women while lower BMI was associated with major depression among men (7). Longitudinal studies have shown that depression predicts the subsequent onset of obesity, that obesity predicts the subsequent onset of depression, that successful weight loss is associated with decreased depression and that depression predicts poorer success in weight loss (8). Finally, the authors found no support for the "jolly fat" (obesity reduces risk of depression) hypothesis (9). As a result of these issues, certain basic questions concerning the co-occurrence of obesity and psychiatric disorders remain.

The aim of this study was to determine the distribution of psychiatric diagnosis in patients with obesity who attended to the endocrinology outpatient clinic and to determine the pattern of the depression and anxiety symptom levels among obese patients without a psychiatric diagnosis.

Material and Methods

The study was carried out at the Department of Psychiatry and Division of Endocrinology, Department of Internal Medicine, Medical Faculty of 18 Mart University in Çanakkale, Turkey. Study subjects were selected from patients diagnosed with obesity at the endocrinology outpatient clinic. The control subjects were selected from the same unit. The study was carried out according to ethical rules and regulations and inclusion upon written consents of the patients.

Inclusion criteria for this study was being 18 years of age or older and having sufficient education to appropriately fill out self-report scales. Patients with known pre-existing psychotic disorder, physical illness, or current substance use disorders were excluded. Both patient group and controls were interviewed based on the American Psychiatric Association's Diagnostic and Statistical Manual, 4th Edition (DSM-IV) (10) criteria at the psychiatric out-patient department by a psychiatrist. 62 obese patients and 27 control subjects, who met the inclusion criteria and acceptted to participate in the study, were included

The applicants were asked to classify their socioeconomic status (SES) as "low", "medium" or "high", identify their settling area as "urban" or "rural" and state their educational attainment as successful school years. Self-reported demographic characteristics (age, sex and marital status), height and weight of participants were assessed and Body Mass Index (BMI) was calculated for each patient by dividing weight (kg) by height in square meter (m2). Previous methodological research suggests that self-reported height and weight are highly correlated with direct physical measurements (11). The Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A) were administered by a different psychiatrist (12). Hamilton Depression Rating Scale is a 17-item rating scale designed to measure severity and symptoms of depression (13). The Turkish version was validated by Akdemir et al. in 1996 and found to be equivalent to the original in English (14). Hamilton Anxiety Rating Scale is a 13-item rating scale to measure severity and symptom pattern of anxiety (15). Validity of the Turkish version of the HAM-A was demonstrated by Yazici and colleagues in 1998 (16).

Statistical analysis: SPSS for windows was used for data analysis. Median and interquartile range (IQR) were used to describe demographic, endocrine and psychometric variables. Sex, age and educational attainment in obesity group and controls were compared by the Mann-Whitney-U test and chi-square tests. Descriptive statistics were used for determining the frequency of the symptoms in obese patients without a psychiatric diagnosis.

Results

The study groups consisted of obese patients and controls. There was no significant difference in mean age and gender between the two groups. There was a significant difference between obesity group and the control group in terms of BMI (Table.1)

Table 1. Demographic variables of obese and control groups

	obese (*n=62*)	**control (*n=27*)**	
Age	39.5 (IQR=20)	47.0 (IQR=38)	*u=726.5 p=0.324*
Gender Female Male	 50 12	 18 9	*x= 2.09 p=0.18*
Education	8.0 (IQR=6)	5 (IQR=10)	*u=736.0 p=0.346*
SES high moderate low	 3 52 7	 2 21 4	*x=0.495 p=0.781*
settling area urban rural	 33 29	 18 9	*x=3.28 p=0.194*

38.7% of obese patients were diagnosed with depression, 1.6% with panic disorder, 1.6% bipolar disorder, 1.6% conversion disorder and 4.8% generalized anxiety disorder.

The diagnoses in the two groups according to DSM-IV are shown in Table 2.. In obese patients, depressive disorder was the most frequent diagnosis, while generalized anxiety disorder and panic disorder were leading diagnoses.

The mean scores of HAM-D, HAM-A and BMI in the two groups are shown in Table 3. There was a significant difference between the two groups in terms of both HAM-D, HAM-A and BMI scores (p=0.020, p=0.010, p<0.001).

We divided obese patients into two groups: subjects with major depression – obesity group - (n=24) and subjects without a psychiatric diagnosis to compare the marked items(n=32). The median HAM-D and HAM-A scores of the control group were 6.5 (IQR=8) and 15.0 (IQR=16), respectively. The median HAM-D and HAM-A scores of the obese group were 14.0 (IQR=10) and 28.0 (IQR=14), respectively (p<0.001).

Nearly more than half of obese patients without a psychiatric diagnosis marked at least 1 of HAM-D items which are depressed mood, guilt feeling, somatic anxiety, work and activity loss and general somatic symptoms. HAM-A items that were marked by obese patients without a psychiatric diagnosis, mostly were anxious mood, tension, cognitive difficulties, insomnia, depressed mood, somatic anxiety, cardiovascular, respiratory, gastrointestinal and autonomic symptom items (Table 4).

Table 2. Diagnoses in the two groups according to DSM-IV

	Obese *n= 62*	**Control *n= 27***
Major Depressive disorder	24 (38.7%)	3 (11.1%)
Generalized anxiety disorder	3 (4.8%)	-
Panic disorder	1 (1.6%)	1 (3.7%)
Bipolar disorder	1 (1.6%)	2 (7.4%)
Conversion disorder	1(1.6%)	-
No diagnosis	32 (51.6%)	20 (74.1%)
Somatization	-	1 (3.7%)

Table 3. Median scores of HAM-D, HAM-A and BMI for the two groups

	Obese patients	**Control group**	**U**	**p**
HAM-D	11.0 (IQR=9)	6.0 (IQR=6)	576.0	0.020
HAM-A	20.0 (IQR=19)	13.0 (IQR=9)	574.0	0.019
BMI	39.93 (IQR=7.80)	27.70 (IQR=8.95)	126.5	<0.001

Table 4. Frequency of HAM-D and HAM-A items in obese patients without a psychiatric diagnosis

HAM-D items		**n (%)**
Depressed mood	HAM-D#1	15 (46.9)
Feeling guilt	HAM-D#2	15 (46.9)
Work and activities fatigue	HAM-D#7	15 (46.9)
Somatic anxiety	HAM-D#11	17 (53.1)
General somatic symptoms	HAM-D#13	17 (53.1)
HAM-A items		**n (%)**
Anxious mood	HAM-A#1	21 (65.6)
Tension	HAM-A#2	20 (62.5)
insomnia	HAM-A#4	15 (46.9)
cognitive	HAM-A#5	25 (78.1)
Depressed mood	HAM-A#6	18 (56.2)
Somatic anxiety	HAM-A#7	20 (62.5)
Cardiovascular symptoms	HAM-A#8	17 (53.1)
Respiratory symptoms	HAM-A#9	13 (40.6)
Gastrointestinal symptoms	HAM-A#10	14 (43.8)
Autonomic symptoms	HAM-A#12	14 (43.8)

Discussion

The present study demonstrates that the prevalence of depression in obese patients was higher than controls. Demographic characteristics, such as female gender, low and moderate socioeconomic status, and low educational level were common among obese patients who had major depression. The relationship of depressive and anxious mood and its sustenance with obesity status was clearly dependent upon female gender since women mostly might refer to out-patient clinic.

Several studies report that the relationship between obesity and depression differs for men and women. Istvan et al. for example, showed a positive relationship between depression and obesity among women but not among men (17) as our data supported the same findings. Similarly, Faith et al. (2) found a positive relationship between neuroticism and BMI in women but not in men. Additionally Carpenter et al. (7) indicated a U-shaped relationship such that relatively high and low BMI values were associated with an increased probability of past-year major depression.

Sociodemographic, psychosocial, and genetic factors may render certain obese individuals more prone to depression or vice versa. The relationship between depression and obesity appears to differ across socioeconomic status (SES) (2). Being obese was associated with greater depression among women of high SES, but with reduced depression among women of low SES. In this study, low educational level in depressed obese and female gender (24/21) was common.

It was revealed that HAM-D and HAM-A mean scores in obese patients were significantly higher than those of control group. There was a positive correlation between HAM-D and HAM-A scores. In a community-based study (18), the association of obesity with anxiety, depression and emotional well-being was investigated in three age groups. It was demonstrated that anxiety, depression and lower well-being was associated with obesity in women but not in men. In that study, anxiety and depression symptoms were assessed by the Goldberg anxiety and depression scale, which give scores of 0 to 9 for number of symptoms of anxiety and of depression, differently the anxiety and the depression symptoms were not investigated in detail. While our measure is different, incorporating HAM-D and HAM-A scales, investigates the pattern and frequency of symptoms in detail. We found that nearly half of the obese patients without any

psychiatric diagnoses marked at least one the HAM-D items which were depressed mood, feeling guilt, fatigue in work and activities, somatic anxiety and general somatic symptoms. We consider that fatigue and somatic symptoms are mostly relevant to the obesity whereas depressed mood, feeling guilt and somatic anxiety might be the precursor of any psychiatric disorders.

More than half of the patients who had no psychiatric diagnoses chose at least one item on HAM-A scales which were anxious mood, tension, cognitive difficulties, insomnia, depressed mood, somatic anxiety, cardiovascular, respiratory, gastrointestinal and autonomic symptoms and, we also observed that obese patients without a psychiatric diagnosis noted some levels of anxiety scores. (HAM-A=14.75 ± 9.22).

These results show that obese patients without any psychiatric diagnosis had moderate anxiety signs and also depressive symptoms. We consider that these anxiety and depressive symptoms might be due to psychosocial effects of the obesity itself. It is important to follow-up these symptoms in obese patients to determine any psychiatric disorders in advance.

Limitations

The first limitation of this study is the relatively small sample, although it appeared adequate for statistical methods we carried out. The second limitation is related to methodology: depressive and anxiety symptoms might be evaluated by different and multiple scales within a large sample. On the other hand, this study suggests that the pattern of the anxiety and depressive symptoms might be associated with obesity or the initial of psychiatric disorders and should be followed up by psychiatrists.

In summary, our data attracts attention to the anxiety, depression levels and distribution of symptoms in a specific endocrine-out patient group. The overall findings from the present study may have practical implications for targeting obese individuals who are at risk for experiencing depressed and anxious moods. Particularly psychiatric evaluation for obese patients might be necessary in endocrine outpatient units.

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