Review Article
Ανασκόπηση

Anxiety disorders and obesity

L. Lykouras, J. Michopoulos

2nd Department of Psychiatry, Attikon General Hospital, University of Athens, Medical School, Athens, Greece

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Anxiety disorders are the most prevalent mental disorders in developed countries. On the other hand, obesity is recognized to be one of the greatest public health problems worldwide. The connection between body weight and mental disorders remains an open issue. Low body weight has been studied enough (anorexia nervosa is a typical example) but high body weight has not been addressed sufficiently. It is known that obesity has been related with depression. Although moderate level of evidence exists for a positive association between obesity and anxiety disorders, the exact association between these two conditions is not clear yet. The studies about this subject are quite few and they follow different methodology. Furthermore, anxiety disorders share some common elements such as anxiety, avoidance and chronicity, but they also present a great deal of differences in phenomenology, neurobiology, treatment response and prognosis. This factor makes general conclusions difficult to be drawn. Obesity has been associated with anxiety disorders as following: most of the studies show a positive relationship with panic disorder, mainly in women, with specific phobia and social phobia. Some authors have found a relationship with generalised anxiety disorder but a negative relationship has been also reported. Only few studies have found association between obesity and agoraphobia, panic attacks and post traumatic stress disorder. There has not been reported a relationship between obesity and obsessive compulsive disorder. The causal relationship from obesity to anxiety disorders and vice versa is still under investigation. Pharmacological factors used for obesity treatment, such as rimonabant, were associated with depression and anxiety. Questions still remain regarding the role of obesity severity and subtypes of anxiety disorders. Besides, it is well known that in the morbidly obese patients before undergoing surgical treatment, unusual prevalence of psychopathology, namely depression and anxiety disorders, is observed. Anxiety is also a common trait in personality disorders. There is no single personality type characteristic of the morbidly obese, they differ from the general population as their self-esteem and impulse control is lower. Obese patients present with passive dependent and passive aggressive personality traits, as well as a trend for somatization and problem denial. Their thinking is usually dichotomous and catastrophic. Obese patients also show low cooperativeness and fail to see the self as autonomous and integrated. When trying to participate in society roles they are subject to prejudice and discrimination and should be treated with concern to help alleviate their feelings of rejection and guilt.

Key words: Anxiety, anxiety disorders, obesity, personality traits

Introduction

Nowadays obesity is recognized to be one of the greatest public health problems worldwide. Obesity is considered to be a modern disease. It seems that it is rapidly spreading worldwide, not only in the western, so called developed, world but also in the third, developing, world.[1] The prevalence of obesity has considerably increased the last two decades. It is estimated that nearly half a billion of the world's population is considered to be overweight or obese.[2] At the dawn of the 21st century obesity has reached epidemic proportions. Its impact in public health is rising. It is associated with significant increases in morbidity and mortality with profound social and economic consequences. Obesity is predicted to be the number one health problem by the year 2025.[3]

Obesity is a serious and multifactorially caused disease. Genetic, social, cultural and environmental factors contribute to its genesis. Its management is a challenge for psychiatrists, psychologists, endocrinologists, dieticians and surgeons. Grade III obesity (morbid obesity, BMI>39.9) is a chronic disease with poor response to conventional therapies and high rates of relapses. Morbid obesity is associated with a variety of somatic symptoms and disorders as well as psychological, psychopathological and personality features.[4]

Psychopathology and obesity

Concerning psychopathology, early studies found few differences between obese and nonobese adults. In contrast, recent well-designed research showed an unusual prevalence of psychopathology in the morbidly obese. The most frequent finding was depression and to a lesser extent anxiety disorders.[5] However, in a recent study a negative association was shown between overweight patients and generalized anxiety disorder. Worry found in this disorder may prevent individuals from excessive food intake, which may have physical and social consequences.[6] Obese patients have the tendency to somatization; they express psychological distress through physical complaints.[7] In the study of Papageorgiou et al, a preponderance of female compared to male obese patients was found regarding depression, interpersonal sensitivity, paranoid ideation, somatization, obsessive-compulsive behavior, anxiety and hostility.[8] According to van Germert et al, obesity is often accompanied with psychological consequences, such as depression, somatization, interpersonal problems, low social adjustment and low self-esteem.[9]

It has been shown that the thinking of obese patients is characterized by cognitive distortions that could be connected with anxiety disorders. Dichotomous and catastrophic ways of thinking are the most frequent cognitive distortions seen in this group of patients. A large number of obese patients present with rigid, simplistic and sometimes moralistic ways of thinking.[7] Obese patients are confronted in their lives not only with physical but also with social problems. To deal with them they use various coping strategies. Horchner et al demonstrated that obese female patients displayed avoidance wait-and-see and passive response patterns as coping behavior experiencing their relationship as relatively unreliable and not very intimate.[10]

Anxiety disorders and obesity

Anxiety disorders are the most prevalent mental disorders in the developed world.[11] They present not only with high frequency among population, but they are also chronic. Anxiety disorders fluctuate over life cycle and they typically have ameliorations and exacerbations. Anxiety, fear, excessive worry and apprehension are their main psychological symptoms and tension, fatigue and chest dysphoria are their main physical symptoms. The impact of anxiety disorders in public health is enormous, having in mind that they are the most prevalent mental disorders. They are known to increase morbidity, mortality and they have negative contribution to quality of life.[12–14] DSM-IV classifies anxiety disorders into the following categories: panic disorder, specific phobias, social phobia, generalized anxiety disorder, obsessive-compulsive disorder and stress disorders (mainly post traumatic stress disorder).

Although moderate level of evidence exists for a positive association between obesity and anxiety disorders, the exact association between these two conditions is not clear, yet.[15] Some researchers find positive association between them but some others report no special linking.[6] The heterogeneous nature of both anxiety disorders and obesity may be one of the main reasons for these mixed results.

Given the great amount of the population that suffers from obesity or/and anxiety disorders, studies in the literature that deal with their connection are surprising few. A recent review by Gariepy et al has summarized the results on this subject.[15] Prospective studies for the effect of obesity to anxiety disorders are very few and give mixed results.[15–17] On the other hand, cross-sectional studies tend to give a weak but positive association between obesity and anxiety disorders.[15] Seven studies showed a positive association that reached statistical significance,[18–22] but five more studies showed a positive, yet not significant trend.[23–27] The largest study, performed in US by Zhao et al, used self-report for anxiety disorders (that were medically diagnosed over lifetime). BMI was calculated by self-reported weight and height. There was found a positive association between obesity and anxiety disorders. This association differed between men and women concerning body weight: it was present in obese women with BMI>30 but only in severely obese men (BMI>40).[27] Gariepy et al report after meta-analysis that the odds ratio (OR) of an association between obesity and anxiety was 1.40 (confidence intervals: 1.23–1.57). The inconsistency index was 84.3% (p-value <0.001), suggesting high level of heterogeneity. It seems that obesity is positively associated with anxiety disorders but the strength of evidence is moderate.[15]

There are some variables that could explain this heterogeneity: gender is one of them; obese women are more socially discriminated than men and this could be a reason that anxiety disorders are correlated with obesity in women presenting obese, but with smaller BMI than men.[28] The degree of obesity itself is another factor that moderates this association. In morbidly obese patients undergoing surgical treatment, unusual prevalence of psychopathology, namely depression and anxiety disorders, is observed.[8] The different subtypes of anxiety disorders is another factor giving rise to heterogeneity in results. There are differences between the subtypes of anxiety disorders concerning their association with obesity.[6,15] Panic disorder has been associated with obesity in some but not all studies.[18,21,22,26] It seems that women with panic disorder are more possible to be obese, too.[18] On the other hand, specific phobia seems to be correlated with obesity in most of the studies.[18,22,25,29] Women are more probable to report both obesity and specific phobia.[25] Social phobia follows the same characteristics: it is often associated with obesity, mostly in women.[18,21,22] Some authors have found a relationship between obesity and generalized anxiety disorder (mostly in women) but a negative relationship for men has been also reported.[6,17,18] It has been hypothesized that chronic worry and muscle tension, which are present in generalized anxiety disorder, make it for individuals more probable to lose rather gain weight.[6] Only one study has found association between obesity and agoraphobia, and post traumatic stress disorder respectively.[21,22] There has not been reported a relationship between obesity and obsessive compulsive disorder.[22]

The causal relationship from obesity to anxiety disorders and vice versa is still under investigation. Obesity may be associated with anxiety disorders through several paths. Social discrimination against obese people is a common issue.[28,30] Low self esteem is another factor leading obese people to anxiety in order to compensate in a not friendly social network.[30–32] Since they consider themselves inadequate and the environment hostile, it is obvious that they develop psychological distress, social avoidance and anxiety. The way the others see obese people can become the way they see themselves.[32] They blame themselves for being fat, they try hard to get thinner (which is usually done without planning and leads to failure) and thus eating and weight control preoccupation leads to excessive worry and anxiety.[33] Furthermore, obesity can lead to several general medical conditions, which run in a chronic way, such as asthma, cardiovascular disease and diabetes mellitus.[34–36] Distress from illness burden or pharmacological factors used for treatment could lead to anxiety or depression.[13,14,37–39] In this way, another vicious circle is born.

Another view of the issue puts anxiety disorders as the causal factor for obesity. Anxiety has been correlated with hypothalamic-pituitary-adrenal (HPA) axis dysregulation, which can result in several autonomic functions dysregulation. When this leads to increased appetite, people under stress can easily gain weight.[40–42] Additionally, some people under stress not only eat more, but they "prefer" high-sugar and high-fat foods.[42–45] Another factor that links anxiety and obesity seems to be the chronic medical conditions that are associated with anxiety.

Such conditions, as asthma or heart failure, lead to reduced functionality and very often to reduced physical activity, which is one of the main causes of obesity.[34–36]

Furthermore, the causal relationship between anxiety and obesity does not necessarily run in two directions. There can be a common, third factor that can lead both to anxiety and obesity.[15] A common genetic basis for both conditions cannot be excluded. Anxiety disorders and obesity both present with high levels of heritability.[46,47] On the other hand, environmental factors during childhood can predispose to both anxiety and obesity. It has been reported that endocrine-disrupting chemicals could affect hormonal regulation and this could play a role in obesity and in anxiety disorders.[48] Family environment has a fundamental role, too. Abuse during childhood has been found to predict obesity and anxiety disorders.[49–51] Another factor that seems to predispose to both anxiety and obesity is the presence of psychiatric disorders. Anxiety disorders are often comorbid with other psychiatric disorders, especially with some that have been found to lead to weight gain, such as mood disorders, eating disorders.[52–55] Very important but more complicated is the issue of personality disorders. Some personality traits, such as avoidant coping styles, hypersensitivity to criticism and neurocriticism are often present in individuals with both obesity and anxiety disorders[5,56–59] (see more below, in: Personality traits and obesity).

Lastly, an interesting issue is the role of pharmacological factors used for obesity treatment. One of them is rimonabant, an antagonist for cannabinoid CB_1 receptors. The endocannabinoid system is known to play a key role in mental processes, such as relaxation, amelioration of pain and anxiety and sedation initiation. It has been also reported to play an essential role in regulating appetite and metabolism to maintain energy balance. Thus, the endocannabinoid system is thought to be closely related to obesity. Rimonabant was used for obesity treatment in an effort to regulate the endocannabinoid system and though its results in weight lose were remarkable it was discontinued because it was associated with depression and anxiety.[60] This fact is conflicting in the relationship of obesity and anxiety: a pharmacological factor successfully used for obesity treatment is associated with clinically raised anxiety.

Personality traits and obesity

The examination of the psychological profile of morbidly obese patients is of interest in view of the attempts to identify variables that predict success or failure in weight loss after therapy, as well as risk factors in order to tailor effective strategies for prevention. Mainly psychological factors are discussed in the genesis of obesity. In this respect, studies addressed the question as to which personality characteristics are most frequently associated with obesity. Morbidly obese patients may present with personality traits among which are passive dependent and passive aggressive ones. Other researchers have found immaturity, poor impulse control and impaired quality of life.[5,61,62] Higher score on measures of self-doubt, insecurity, sensitivity, dependence and emotional instability have also been reported.[63] In a 20-year prospective study it was shown that being overweight appears to be a stable trait. Aggressive personality traits and sociopathy were positively associated with being overweight. According to Hasler et al, aggressive personality traits may contribute to increased food intake by favoring the immediate hedonic reward of eating.[6] Morbidly obese patients presented personality disorder features related to eccentric cluster (schizoid, paranoid)[64] and anxious cluster (compulsive, dramatic).[1,7] It has been hypothesized that high scores on the schizoid and paranoid scales coincide with the difficulties in expressing aggressive feelings and interpersonal sensitivity. On the other hand, high scores on the compulsive scales are in line with immaturity and poor impulse control that have been observed in many patients with morbid obesity.[62]

Conclusion

It is clear that the causal relationship between anxiety and obesity is not easy to be established. Anxiety is multidimensional (symptom, disorder, personality trait) and obesity is not a single condition. Its impact in quality of life varies along with differences in BMI, gender and sociocultural environment. Thus, the causal relationship between anxiety and obesity might not be straightforward. It seems that there is a positive but weak correlation between them. In order to strengthen this association prospective, well designed studies will be needed.

Αγχώδεις διαταραχές και παχυσαρκία

Λ. Λύκουρας, Ι. Μιχόπουλος

Β΄ Ψυχιατρική Κλινική, ΓΝΑ Αττικό, Πανεπιστήμιο Αθηνών, Ιατρική Σχολή, Αθήνα

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Οι αγχώδεις διαταραχές είναι από τις συχνότερα εμφανιζόμενες διαταραχές στον αναπτυγμένο κόσμο. Από την άλλη μεριά, η παχυσαρκία φαίνεται να αποτελεί ένα από τα μεγαλύτερα προβλήματα δημόσιας υγείας παγκοσμίως. Η σχέση του σωματικού βάρους με την εμφάνιση ψυχοπαθολογίας είναι ένα θέμα ανοιχτό προς διερεύνηση. Ενώ τα πράγματα είναι πιο συγκεκριμένα για το χαμηλό σωματικό βάρος (π.χ. ψυχογενής ανορεξία), δεν έχουν διερευνηθεί αρκετά όσον αφορά το υψηλό σωματικό βάρος. Είναι γνωστό ότι η παχυσαρκία σχετίζεται με την κατάθλιψη. Για τις αγχώδεις διαταραχές και την παχυσαρκία, όμως, τα πρώτα στοιχεία δείχνουν μια πιθανή θετική σύνδεση, αλλά η σχέση μεταξύ των δύο καταστάσεων δεν έχει αποσαφηνισθεί αρκετά. Οι μελέτες που ερευνούν το θέμα είναι σχετικά λίγες και η μεθοδολογία τους ετερογενής. Ένας παράγοντας που δυσκολεύει την εξαγωγή συμπερασμάτων για τις αγχώδεις διαταραχές συνολικά είναι και η ετερογένεια των διαταραχών που απαρτίζουν αυτή την ομάδα. Η παχυσαρκία έχει συνδεθεί με τις αγχώδεις διαταραχές ως εξής: περισσότερες μελέτες αναδεικνύουν θετική συσχέτιση με τη διαταραχή πανικού, κυρίως στις γυναίκες, τη διαταραχή κοινωνικού άγχους και τις ειδικές φοβίες. Όσον αφορά τη διαταραχή γενικευμένου άγχους, έχει αναφερθεί θετική, αλλά και αρνητική συσχέτιση. Λίγες μόνον μελέτες αναφέρουν συσχέτιση της παχυσαρκίας με την αγοραφοβία, τις κρίσεις πανικού και τη μετατραυματική διαταραχή εκ στρες. Τέλος, δεν έχει αναφερθεί συσχέτιση μεταξύ της παχυσαρκίας και της ιδεοψυχαναγκαστικής διαταραχής. Η πιθανή αιτιολογική σχέση μεταξύ της παχυσαρκίας και των αγχωδών διαταραχών και αντιστρόφως είναι ένα θέμα που παραμένει ανοιχτό προς διερεύνηση. Φαρμακολογικοί παράγοντες που έχουν χρησιμοποιηθεί για την αντιμετώπιση της παχυσαρκίας, όπως η ριμοναμπάτη, έχουν συσχετισθεί με την εμφάνιση κατάθλιψης και άγχους. Ερωτηματικά παραμένουν, ακόμη, για τον ρόλο που παίζει η βαρύτητα της παχυσαρκίας και ο τύπος της αγχώδους διαταραχής στη διασύνδεση μεταξύ των δύο καταστάσεων. Είναι γνωστό, άλλωστε, ότι στους ασθενείς με κακοήθη παχυσαρκία οι οποίοι πρόκειται να υποβληθούν σε χειρουργική θεραπεία παρατηρούνται υψηλά ποσοστά κατάθλιψης και αγχωδών διαταραχών. Το άγχος αποτελεί, επίσης, ένα σύνηθες σύμπτωμα στις διαταραχές προσωπικότητας. Δεν υπάρχει ένα μοναδικό προφίλ προσωπικότητας που να συνδέεται με την κακοήθη παχυσαρκία, αλλά αυτοί οι ασθενείς εμφανίζουν περισσότερο από τον γενικό πληθυσμό χαμηλή αυτοεκτίμηση και δυσκολότερο έλεγχο των παρορμήσεων. Παρουσιάζουν εξαρτητικά και παθητικο-επιθετικά στοιχεία προσωπικότητας, καθώς και μία τάση να σωματοποιούν ή/και να αρνούνται το πρόβλημα. Συχνά η σκέψη τους είναι διχοτομική και καταστροφολογική. Οι παχύσαρκοι ασθενείς εμφανίζουν χαμηλή συνεργατικότητα και δυσκολεύονται να δουν τον εαυτό τους ως αυτόνομο και ολοκληρωμένο. Τέλος, σημαντικό στοιχείο αποτελεί το γεγονός ότι τα παχύσαρκα άτομα αποτελούν αντικείμενο προκατάληψης και διακρίσεων γενικότερα στην καθημερινή τους ζωή. Γι' αυτό τον λόγο η θεραπευτική προσέγγιση οφείλει να προσπαθεί να ανακουφίσει τα αισθήματα ενοχής και απόρριψης που νιώθουν.

Λέξεις ευρετηρίου: Άγχος, αγχώδεις διαταραχές, παχυσαρκία, στοιχεία προσωπικότητας

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Corresponding author: J. Michopoulos, Lecturer in Psychiatry, 2nd Department of Psychiatry, Attikon General Hospital, University of Athens, Medical School, 1 Rimini street, GR-124 62 Athens, Greece
Tel: +30 210-58 32 446, Fax: +30 210-53 26 453
e-mail: imihopou@med.uoa.gr