In Brief

This review found that obese individuals in the general population have essentially normal psychological functioning. Obese women, however, are at greater risk than obese men of depression and related complications. Binge eating and extreme obesity further increase the likelihood of patients reporting emotional complications. Pharmacotherapy and psychotherapy may be of benefit in this subset of individuals.

Psychological Functioning of Obese Individuals

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Adults with type 2 diabetes are 50–250% more likely than those without diabetes to suffer from depression. Depression may be attributable to hyperglycemia, diabetes-related health complications, or more broadly, the stress of living with a chronic health condition. Obesity, another chronic condition, commonly co-occurs with type 2 diabetes. Nearly half of all people with type 2 diabetes are obese (i.e., have a BMI ≥ 30 kg/m²), and two-thirds have a BMI of at least 27 kg/m².

This article reviews the psychosocial correlates of obesity with special emphasis on mood disturbance. We begin by examining two factors—prejudice and discrimination—that would appear likely to contribute to depression and other adverse emotions in obese individuals. We then review the prevalence of mood disturbances among obese individuals, with particular attention to risk factors—including sex, presence of binge eating, and degree of obesity—that may increase the likelihood that a patient will pre-
sent with clinically significant psychopathology. We examine the impact of obesity on body image and quality of life, as well as the effects of weight loss and weight regain (i.e., weight cycling) on mood. We conclude with recommendations for the treatment of psychosocial complications in obese individuals.

Stigma and Discrimination
The prevalence of obesity in the United States has grown from 15% in 1980 to 30% in 2000. Other developed nations have also seen dramatic increases in the rates of this disorder, which has prompted the World Health Organization to label obesity a global epidemic. Despite worldwide increases in obesity and the recognition of genetic contributions to weight, negative attitudes and behaviors toward obese individuals persist in American society and are likely exacerbated by our culture’s idealization of thinness. Some assert that ridicule and disparagement of obese individuals remain the last socially acceptable form of prejudice.

Prejudice against obese individuals begins early in life. A classic study by Staffieri demonstrated anti-fat attitudes in children 6 years old, who characterized silhouettes of an overweight child as “lazy,” “dirty,” “stupid,” and “ugly.” Children in Staffieri’s study also indicated that the figure “lies and cheats.” More recently, Cramer and Steinwert found evidence for the “fat is bad” stereotype among boys and girls as young as 3 years old. Children in their study rated a chubby target figure significantly more negatively than otherwise equivalent thin or average-weight figures.

Obesity-related stigma persists through adolescence and adulthood. College students, for instance, rated obese individuals as less suitable marriage partners than embezzlers, cocaine users, and shoplifters. Health care professionals also have been found to hold negative attitudes toward obese individuals. In one study, physicians associated poor hygiene, noncompliance, hostility, and dishonesty with obese patients. In another study, nurses indicated that obese individuals harbor unresolved anger and are lazier, more overindulgent, and less successful than individuals of average weight. Teachman and Brownell found that health care professionals who represented a variety of disciplines but specialized in obesity treatment demonstrated little explicit anti-fat bias. However, they clearly showed implicit negative attitudes toward the obese, although at lower levels than in the general population.

Normal-weight individuals might be expected to hold stronger anti-fat attitudes than obese people. In Cramer and Steinwert’s study, however, overweight children demonstrated stronger “fat is bad” attitudes than did children of average weight. Among adults, negative attitudes toward obesity appear to be unrelated to weight. The nonsignificant relationship between BMI and anti-fat attitudes suggests that obese people themselves may associate obesity with unfavorable characteristics.

Anti-fat attitudes can even transfer to people who are not overweight. Hebl and Mannix examined individuals’ evaluations of an average-weight male job applicant who was seen in the company of either an obese or an average-weight woman. Those who saw the applicant seated next to the obese woman rated him less favorably than those who saw him with the average-weight woman. This stigma-by-association effect was observed whether the rater was male or female, whether the rater thought the obese woman was a romantic partner of the applicant or a stranger, and whether the observer held explicit anti-fat attitudes.

The natural consequence of negative attitudes toward obese individuals is discriminatory behavior. The findings of Hebl and Mannix illustrate the potential for obese people (and their associates) to be evaluated unfairly in employment settings. Indeed, several studies have found discriminatory treatment of obese people—especially obese women—in virtually all stages of employment, including selection, placement, compensation, promotion, discipline, and discharge. Discrimination is similarly apparent in the realm of educational attainment. Crandall, for example, found that overweight children received less financial support from their parents to pay for college than did their average-weight peers, even when controlling for parental income, ethnicity, family size, and children’s grades. As is true in employment settings, weight-related discrimination in educational settings is experienced more strongly by women than by men. Roehling, as well as Puhl and Brownell, have provided thorough reviews of discrimination toward obese individuals.

Prejudice and discrimination can be conceptualized as chronic stressors that could have deleterious effects on emotional well-being. Given society’s bias against them, obese individuals might be expected to experience more psychological distress than their average-weight peers. The following section reviews the prevalence of psychopathology among obese people and the associations between BMI and psychological distress.

Obesity and Psychopathology
Obese individuals are frequently thought to suffer from depression, low self-esteem, and related problems. Anecdotal and theoretical accounts of the psychological causes and effects of obesity abound. According to traditional psychoanalytic thought, overeating (and subsequent obesity) is the product of a deep sense of dependency that arises in the oral stage of development when the infant’s basic needs are not adequately satisfied. Obese people themselves may attribute their weight to a tendency to view food as a source of comfort—a friend who can help them cope—in times of stress, anger, depression, and loneliness. One may look at extremely obese individuals and assume that they cannot be happy or must have low self-esteem as a result of their weight.

Studies of the general population
Early studies of the psychosocial status of obese individuals in the general population yielded inconsistent results. Some found that obesity was related to greater emotional distress, whereas others reported that obese people displayed less psychological disturbance. Regardless of the direction of the relationships between obesity and psychopathology, these studies consistently failed to find clinically significant results. The differences between obese and nonobese individuals were not large enough to suggest meaningful differences in their psychosocial status.

The lack of consistency and clinical significance found in population-based studies led some researchers to conclude that there were essentially no differences in the psychological functioning of obese and nonobese people. A later generation of researchers, however, argued that better-designed studies were needed.
including: 1) large, nationally representative samples, as opposed to small samples of convenience; 2) consistent criteria to define overweight and obesity; 3) assessment tools that yield clinical diagnoses, as opposed to paper-and-pencil inventories; and 4) appropriate control groups.

At least two studies 28,29 have met these requirements. Istvan et al. 28 examined the relationship between BMI and depression, as measured by the Center for Epidemiologic Studies Depression (CES-D) scale, 10 in a nationally representative sample of 32,000 adults aged 25–74 years. They found no relationship between BMI and CES-D scores among men. Women in the highest quintile of BMI (BMI ≥ 28.96 kg/m²), however, were 38% more likely to score in the depressed range on the CES-D than those who fell into the lower BMI quintiles. The relationship between BMI and CES-D scores was stronger among women who smoked (in the past or at present) than women with no history of smoking.

Carpenter et al. 29 similarly studied a large, nationally representative sample (of more than 40,000 people) and found that the relationship between obesity and depression varied by sex. Using a structured interview, the investigators found that obese men (those with a BMI ≥ 30 kg/m²) were significantly less likely to report a history of major depression, suicidal ideation, or suicide attempts in the past year than men of average weight (BMI = 20.8–29.9 kg/m²). By contrast, underweight men (BMI < 20.8 kg/m²) were at a 25% increased risk for depression, 81% increased risk for suicidal ideation, and 77% increased risk for suicide attempts, compared to average-weight men. A different pattern was observed among women. Obese females were 37% more likely than their average-weight peers to have experienced major depression in the past year. Obese women also were 20% more likely to report suicidal ideation and 23% more likely to have made a suicide attempt in the past year. For women, being underweight was not associated with depression or suicidality.

Studies of clinical populations
Prevalence estimates of psychopathology are typically higher in clinical samples of obese people than in the population at large. In uncontrolled studies of individuals seeking weight reduction, the lifetime prevalence of depressive disorders (e.g., major depression, dysthymia) ranged from 9.2 to 47.5%, and the lifetime prevalence of other Axis I mental disorders (i.e., clinical syndromes) ranged from 2.5 to 31%. 31–35

In their meta-analytic review, Friedman and Brownell 27 concluded that obesity was moderately (average effect size = 0.52) and consistently related to depression in studies that compared obese individuals who sought treatment with people in the general population. Obese patients who sought weight reduction reported significantly greater psychological distress than did comparably obese individuals who did not seek treatment. 36 By contrast, obese individuals who did not seek weight loss did not differ from average-weight individuals with respect to psychopathology. 36 Treatment-seeking status, therefore, is an important factor to consider when examining the relationship between obesity and psychopathology. 27,37

Appropriate comparison groups for obese treatment-seekers could include samples of average-weight and obese individuals who sought general medical or surgical procedures.

A Different Question
The studies reviewed thus far have attempted to answer whether obesity is related to increased psychopathology. As Wadden and Stunkard 28 concluded in 1985, the answer to this broad question appears to be “no.” Research into relationships between obesity and psychosocial outcomes has now entered a second generation. 22 The focus of inquiry has shifted from whether obesity is related to greater psychological distress to which obese people are at increased risk for psychopathology. This approach recognizes the heterogeneity among obese individuals. Given the prevalence of overweight and obesity, there may be greater variability among these individuals than there is between obese and nonobese people. In the following section, we review the characteristics that may be associated with increased risk of psychopathology (particularly depression) among obese individuals.

Potential Risk Factors
Sex
Women are under greater societal pressure than men to be thin. Females are teased about their weight more than men and report higher levels of body image dissatisfaction. 38 Thus, it is not surprising that weight has more negative psychosocial effects in women than in men. The findings of Carpenter et al. 29 and Istvan et al. 28 are remarkably similar. Obese women in the general population were 37 and 38% more likely, respectively, to be depressed as compared to their average-weight peers. For men in these studies, obesity was either unrelated to mood 38 or was associated with significantly fewer symptoms of depression. 29

The finding that the relationship between weight and depression is different for men and women must be considered when examining the broad psychosocial correlates of obesity. Studies that estimate the prevalence of psychopathology among obese treatment-seekers, in particular, must be interpreted with caution. As is true with psychotherapy in general, 39 women are more likely than men to seek weight loss therapy. Because females represent as much as 80% of treatment-seekers 40 they are likely to be over-represented in obesity research. Furthermore, the types of psychopathology that are typically assessed in obesity research (i.e., depression, anxiety, eating disorders, and borderline personality disorder) are more common among women than men, regardless of weight. 41 Given the sex distribution and types of distress examined in clinical obesity studies, the association between weight and pathology may appear stronger than it is.

Binge eating
Binge eating is defined as the consumption of an objectively large amount of food accompanied by a subjective loss of control while eating. 41 Individuals who binge two or more times per week (for at least 6 months) and are distressed by their behavior meet criteria for binge eating disorder (BED). The fourth edition of the Diagnostic and Statistical Manual of Mental Disorders estimates that the prevalence of BED in community samples ranges from 0.7 to 4%. 41

As many as 30% of obese individuals who seek weight loss treatment appear to meet criteria for BED, based on self-report. 42 When diagnosed by a clinical interview, however, the rates fall to 7.6–18.8%. 43 The prevalence of BED in obese treatment-seekers, while decidedly higher than in the general population, illustrates that most obese
individuals do not routinely consume large quantities of food and lose control over their eating.

Binge eating is also encountered in overweight patients with type 2 diabetes. Crow et al. assessed 43 consecutive patients in a diabetes clinic and found that one-fourth met criteria for BED. Other studies found lower rates of binge eating (6–21%) among patients with type 2 diabetes. Patients in the Crow study who were diagnosed with BED had a significantly higher BMI than their nonbingeing counterparts. Glycosolated hemoglobin, however, did not differ between bingeing and nonbingeing patients.

Binge eating and psychopathology. Two of three studies found significantly more depressive symptoms in obese patients with BED, as determined by interview, than in obese nonbingers. Numerous other studies found that binge eaters, compared with nonbingers, reported not only more symptoms of depression, but also lower self-esteem, greater symptoms of borderline personality disorder, and greater lifetime prevalence of any Axis I mental disorder, including substance abuse or dependence. The presence of binge eating, therefore, can be considered a risk factor for depression and various other forms of psychopathology.

Extreme obesity
Recent data indicate that 30% of adults in the United States have a BMI ≥ 30 kg/m² and thus are considered obese. A remarkable 5% of U.S. adults are extremely obese, characterized by a BMI of at least 40 kg/m². Health complications increase linearly with BMI. Among nonsmoking women, for example, the risk of death from all causes increased by ~25% for those with a BMI of 30.0–31.9 kg/m² and by 90% for those with a BMI > 40 kg/m² compared to women of average weight.

Extreme obesity and psychopathology. Some have suggested that the risk of psychological distress also may increase with greater severity of obesity. Wadden et al. found that obese patients with a BMI ≥ 40 kg/m² had significantly greater depressive symptoms and significantly lower self-esteem than those with a BMI < 40 kg/m². These researchers suggested that the increased risk of medical complications and the greater likelihood of experiencing prejudice and discrimination might account for the greater depressive symptoms in extremely obese patients.

Subclinical Consequences of Obesity
While some obese individuals experience depression and related complications, most obese people appear to have essentially normal psychological functioning. These individuals, however, may have physical or psychosocial complications of their excess weight that detract from their wellbeing, even if their problems do not rise to the level of a psychiatric diagnosis. In this section, we discuss the relationship between obesity and subclinical syndromes, such as impaired quality of life or body image.

Health-related quality of life
Health-related quality of life (HRQL) is commonly defined as the impact of an illness on one’s physical and mental functioning. Studies have consistently demonstrated that obese individuals have lower HRQL (i.e., greater impairment due to illness) than do average-weight individuals. Furthermore, HRQL varies within the obese population; it declines as the severity of obesity increases. BMI is more strongly and more consistently associated with the physical domains of HRQL than with those related to mental health.

Physical pain may have a major impact on HRQL in obese individuals. Osteoarthritis, knee pain, and back pain, in particular, are common among obese individuals and are positively associated with BMI. The presence of pain may account for much of the variance in the relationships between BMI and other aspects of HRQL. The experience of pain could mediate the relationship between BMI and psychological distress (e.g., depression) in extremely obese individuals, although this hypothesis has not been tested.

Body image dissatisfaction
Body image dissatisfaction has become so prevalent in America as to be described as a “normative discontent.” Nearly half of women in the general population give a generally negative evaluation of their appearance. The results of one survey suggest that, from 1972 to 1997, the percentage of women dissatisfied with their overall appearance more than doubled (from 25 to 56%). The percentage of men who were dissatisfied with their appearance nearly tripled (from 15 to 43%) during the same time. The most commonly cited sources of dissatisfaction were weight and waist/abdomen for both women and men. Dissatisfaction appears to be greatest among Caucasians and among individuals who have internalized sociocultural appearance standards regardless of ethnicity.

The severity of body image dissatisfaction is significantly greater among obese treatment-seekers than among nonobese individuals. Sarwer et al. found that 68% of obese individuals who sought weight reduction (BMI = 35.6 ± 4.3 kg/m²) and 33% of nonobese controls (BMI = 23.8 ± 3.2 kg/m²) reported moderate to extreme dissatisfaction with their overall appearance. The waist/abdomen was the most dissatisfying feature for both the obese patients (47%) and controls (42%). A greater percentage of obese individuals (72%) were moderately to extremely dissatisfied with their most dissatisfying feature than were controls (49%).

The earlier people become obese, the more likely they are to be dissatisfied with their bodies. Several studies have observed a relationship between being teased about weight in childhood and body image dissatisfaction in adulthood. Others, however, found that adulthood teasing was more strongly related to body image dissatisfaction than childhood teasing. The relationship between recalled childhood teasing and body image may be partly explained by biases in memory due to current mood and self-esteem.

Binge eating also appears to be associated with body image dissatisfaction. Obese bingers reported significantly greater dissatisfaction than did obese nonbingers; the increased dissatisfaction among bingers could not be explained by mood or BMI.

Although obese people are more dissatisfied with their bodies than are their average-weight peers, body image dissatisfaction is moderately to strongly associated with greater depressive symptoms and lower self-esteem regardless of weight. The direction of the relationship between body image dissatisfaction and clinically significant depression is unknown. Research has yet to determine whether depressed individuals evaluate their bodies more negatively than do nondepressed people, whether dissatisfaction with appearance increases vulnerability to
depression, or whether one or more other factors simultaneously increase the risk of both depression and body image dissatisfaction.

Psychosocial Effects of Weight Loss and Regain
Dieting has become America’s new national pastime. At any given moment, ~45% of women and 30% of men are trying to lose weight.76

Weight loss, as well as weight regain, may be associated with emotional consequences, both positive and negative.

Intentional weight loss is associated with improvements in mood,77 quality of life,78 and body image.79 These benefits appear to result whether the weight was lost with diet and exercise,80 very-low-calorie diets,81 pharmacotherapy,82 or bariatric surgery.83

Weight cycling
Lifestyle modification consisting of a low-calorie diet, increased physical activity, and group behavior therapy is probably the most studied intervention for weight loss. Reviews indicate that lifestyle modification typically produces a loss of 8–10% of initial weight in 20–26 weeks.84 Unfortunately, most individuals return to their baseline weight within 3–5 years of completing treatment.85

Significant regain also has been observed following very-low-calorie diets81 and even some forms of bariatric surgery (i.e., vertical banded gastropasty).86 Patients often report frustration and disappointment as a result of regaining some or all of their lost weight.

Contrary to expectations, however, weight loss and regain (i.e., weight cycling) does not appear to be associated with clinically significant depression. Cross-sectional studies that found no differences in depression between individuals with and without a history of weight cycling87–89 have been criticized for methodological limitations. More rigorous longitudinal studies, however, have yielded similar conclusions.85,90,91 For example, Foster et al.91 found that obese women who lost an average of 21.1 kg after 6 months of treatment but were 3.6 kg above baseline 5 years post-treatment exhibited significant improvements in mood. Mean scores on the Beck Depression Inventory (BDI)92 dropped from 12.7 to 9.3 at follow-up. These women also reported significant reductions in hunger and disinhibition of eating.

While studies suggest that weight cycling does not result in clinically significant depression, it is associated with decreased satisfaction with appearance, self-esteem, and self-confidence.93 The generally favorable finding that weight cycling is unrelated to depression should not lead clinicians to minimize the shame and distress—if subclinical in severity—that patients frequently report in response to a history of failed attempts to control their weight.

Treatment of Psychosocial Complications in Obese Individuals
Obese patients and their health care providers may readily conclude that any distress patients experience is attributable to their size and that they “just need to lose weight.” Clinicians are cautioned, however, against assuming that obese people who suffer from significant depression are depressed because they are obese. The vast majority of obese people, in fact, are not depressed. Those who do have a mood disorder deserve and require the same care that would be provided to a depressed person of average weight.

We recommend that patients with major depression be treated for their mood disturbance before weight loss is undertaken. The cognitive and behavioral symptons of depression (e.g., poor concentration, low motivation, social withdrawal) can diminish patients’ capacity to adhere to a weight loss program, leaving them vulnerable to attrition, unsatisfactory weight loss, and exacerbation of the mood disorder.

Treatment of depression
Several treatments are efficacious in the treatment of depression. Selective serotonin-reuptake inhibitors are a class of antidepressant agents that are associated with significant improvements in mood and generally tolerable side effects.84 They also may be associated with short-term weight loss or, at a minimum, with less weight gain than the older tricyclic antidepressants.95

Bupropion, which acts through the dopaminergic and noradrenergic pathways, is another antidepressant that is associated with weight loss (at least in the short term).96

Some psychotherapies have been found to be as effective as pharmacotherapy for treating depression.97 Cognitive-behavioral therapy and interpersonal psychotherapy are among the most common psychological interventions for depression and have received strong empirical support.98 Persons et al.99 have reviewed the role of psychotherapy in the treatment of depression.

Treatment of binge eating
Binge eating, in the absence of major depression, does not appear to contraindicate weight reduction. Gladis et al.100 categorized patients (on the basis of questionnaires and clinical interview) into one of four groups: 1) no overeating; 2) episodic overeating; 3) subthreshold BED; and 4) BED. All patients received a 48-week trial of structured lifestyle modification. Those with BED began treatment with greater depressive symptoms than those in other groups. By week 5, however, BED patients were equivalent to all other groups with respect to depressive symptoms. Patients with BED also lost more weight than each of the other groups at the completion of treatment (even after adjusting for initial weight) and maintained weight losses equivalent to or larger than the losses in all other groups.

One study101 suggests that the well-known antidepressant fluoxetine may be efficacious for treating BED as well as depression. Patients were randomly assigned to receive placebo or a flexible dose of fluoxetine (mean = 71.3 ± 11.4 mg/day) for 6 weeks. As compared to placebo controls, patients who received fluoxetine had significantly greater reductions in binge frequency and BMI, as well as a greater reduction in depressive symptoms that approached significance (P = 0.06).

The nature of the relationship between binge eating and depression is not fully understood. Studies have yet to illuminate whether binge eating is secondary to depression, whether the converse is true, or whether a more complex relationship exists between the two disorders. More research is necessary to clarify these issues.

Life stress
Weight loss requires patients to change many daily behaviors and, thus, can be stressful in itself. Perhaps the demands of weight loss explain the finding that the experience of significant stressors—especially those related to finances, parents, and significant others—increased the risk of attrition among patients in a weight reduction program.102 For people who seek weight loss despite experiencing
significant life stress, we recommend the provision of psychological support. Counseling, provided by another professional, may be a useful adjunct to weight loss therapy for patients who are experiencing particularly trying times.

The assessment of stressors is particularly important in evaluating patients’ candidacy for bariatric surgery. Surgery is best postponed for individuals experiencing acute stressors that are expected to resolve in a specific amount of time (e.g., a move, an impending divorce, a child’s wedding). We recommend that surgery be delayed until more energy is available to devote to the task of postoperative recovery and behavior change. Adjunctive support to bolster patients’ emotional resources is recommended for those under chronic stress with no foreseeable resolution (e.g., poverty, marital distress, disease).

Summary

This review has not supported the common assumption that obesity is broadly associated with depression and other psychopathology. In men in particular, excess weight may be associated with a reduced risk of psychological complications. Conversely, being female, binge eating, and having a BMI ≥ 40 kg/m² increase the likelihood that a patient will report a significant mood disturbance. People who seek professional weight loss therapy also are more likely to be depressed than nontreatment-seeking obese individuals. Their mood disturbance may be one of the factors that prompts them to seek weight loss.

Depression in obese people should not be assumed to be attributable solely to weight. Although losing weight does improve mood, clinicians should not expect patients’ depression to remit with weight loss. Treatment of the mood disorder with psychotherapy or pharmacotherapy should precede weight loss therapy. Alleviation of patients’ psychological distress should improve their ability to adhere to diet and activity recommendations and, thus, achieve the weight loss they seek.

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