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# Psychosocial and Pharmacological Treatment of Eating Disorders: A Review of Research Findings



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Research on the treatment of eating disorders has focused primarily on cognitive-behavioral therapy (CBT) and, more recently, interpersonal psychotherapy (IPT). Numerous studies have shown that CBT is helpful in reducing symptoms of bulimia nervosa and binge-eating disorder. In addition, CBT has been found to be superior or comparable to other psychotherapies in reducing bulimic symptoms. Preliminary findings indicate that CBT and IPT produce similar results at follow-up for bulimia nervosa and binge-eating disorder. Antidepressant medications are also useful in the treatment of bulimia nervosa and binge-eating disorder, but are less likely to result in remission of symptoms than CBT. The results from comparison studies are inconsistent, with modest evidence that combining antidepressant medication and psychotherapy produces greater improvement in bulimic symptoms. Limited research has been conducted on the treatment of anorexia nervosa, although preliminary studies suggest that psychotherapy and fluoxetine may be helpful in preventing relapse after weight restoration. © 1999 John Wiley & Sons, Inc. *J Clin Psychol* 55: 685-697, 1999.

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Preparation of this article was supported by the Center Grant for Eating Disorders Research from the McKnight Foundation, the Minnesota Obesity Center Grant #P30 DK50456 from the National Institutes of Health, and the Neuropsychiatric Research Institute.

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Although research in the treatment of eating disorders is a relatively young field, a large number of studies have been conducted to identify interventions for the treatment of bulimia nervosa and, to a lesser extent, anorexia nervosa. Treatment outcome studies that have utilized control groups or comparison samples have for the most part been conducted on bulimia nervosa, a condition in which individuals engage in binge-eating episodes and compensatory behaviors including self-induced vomiting, abuse of laxatives or diuretics, fasting, and excessive exercise. Recently, more attention has been devoted to evaluating the treatment of binge-eating disorder, a condition characterized by recurrent binge-eating episodes unaccompanied by self-induced vomiting or other means of preventing weight gain. Relatively less treatment outcome research has been conducted on anorexia nervosa, a condition in which individuals maintain a low body weight and exhibit associated symptoms including fear of weight gain, disturbances in how the body is experienced, and absence of menses. Research on the treatment of anorexia nervosa has been hampered by several factors, including the relative rarity of the condition, the clients' ambivalence about engaging in treatment, and the tenuous medical status of anorexic individuals that usually requires a multiplicity of simultaneous interventions.

A considerable amount of research on treatment for eating disorders has focused on cognitive-behavioral therapy (CBT), which has used manuals including those developed by Fairburn and colleagues (for treating bulimia nervosa and binge-eating disorder), and by Garner and associates (for treating anorexia nervosa). In general, CBT has been found to be an efficacious treatment for bulimia nervosa, with preliminary evidence indicating that it is also helpful for binge-eating disorder, and, based on even less data, anorexia nervosa. Interpersonal therapy (IPT) has also been adapted by Fairburn and by Wilfley and colleagues for eating disorders, and has been shown to be helpful for the treatment of bulimia nervosa and binge-eating disorder. Pharmacological trials have generally utilized traditional antidepressant medications for treating bulimia nervosa, anorexia nervosa, and binge-eating disorder, although several other classes of agents have been tried. Recent studies have also attempted to compare treatment of medications with psychotherapy, as well as a combination of the two approaches.

The purpose of this article is to summarize the research that has been conducted on the treatment of eating disorders, emphasizing controlled investigations that utilized a wait-list control condition or other comparison sample. Because the majority of studies have been conducted on diagnostic-specific disorders rather than eating disorders per se, each type of eating disorder will be reviewed separately, with sections on psychotherapy, pharmacology, combined investigations, and predictors of outcome.

### **BULIMIA NERVOSA**

Bulimia nervosa is defined in the DSM-IV as a disorder characterized by binge-eating episodes in which the individual consumes a large amount of food and experiences a sense of loss of control, accompanied by attempts to prevent weight gain. DSM-IV delineates two subtypes of bulimia nervosa: (i) purging type, in which the individual engages in self-induced vomiting and/or abuse of laxatives or diuretics, and (ii) nonpurging type, involving excessive exercise and/or fasting. Individuals with bulimia nervosa also exhibit an undue influence of their shape and weight on how they evaluate themselves, determining their self-worth on the basis of their body weight and size. In contrast to anorexia nervosa, individuals with bulimia nervosa are usually normal weight; however, a subgroup is overweight.

Although the DSM-IV specifies two subtypes of bulimia nervosa, the vast majority of treatment studies consist of participants who meet criteria for the purging type. Whether

the results of these studies are applicable to the nonpurging subtype of bulimia nervosa is less certain. In addition, it is unclear whether the results of treatment outcome research are relevant to the large number of individuals with subthreshold conditions who do not meet full criteria for bulimia nervosa, usually because they do not engage in binge eating and compensatory behaviors as often as twice per week or do not have binge eating episodes in which a large amount of food is consumed.

### *Psychotherapy Studies*

More than 20 studies have been conducted on the use of psychotherapy to treat bulimia nervosa. In general, psychotherapy studies have found that psychological interventions appear to be helpful in reducing the frequency of binge eating and purging symptoms, and that psychotherapy is superior to conditions in which participants do not receive treatment or received delayed treatment. Among the psychotherapies, CBT has been studied most extensively.

Various CBT manuals have been utilized for the treatment of bulimia nervosa, with the ones developed by Fairburn and colleagues having been used most widely. Most CBT models are based on the assumption that restrictive dieting precipitates binge eating, and that purging is used as an attempt to prevent weight gain. In addition, underlying deficits in self-esteem are thought to lead to an overvaluation of weight and shape; the pursuit of thinness is viewed as an attempt to improve self-worth. In general, CBT manuals have emphasized the importance of consuming regular meals and snacks, utilizing behavioral strategies to reduce bulimic behavior (including the avoidance of high-risk situations, changing problematic thought patterns, teaching relapse-prevention techniques) and relying on written self-monitoring forms in which participants keep detailed records of food consumption. In comparison with other treatment approaches, CBT is highly structured and didactic, with the therapist often taking an active and directive role in sessions. In research studies, CBT for bulimia nervosa has been time limited, usually lasting several months in duration.

Research findings on CBT indicate that this treatment is associated with significant reductions in the frequency of binge eating and purging, ranging from 40% to 97% and averaging about 75%. However, abstinence rates, indicating percentages of individuals completely free of binge eating and vomiting, are generally more modest, ranging from 8% to 97% and averaging about 40% of those who enroll in treatment. Bulimic symptoms have been treated successfully using individual and group models, separately as well as in combination. In most studies, CBT for bulimia nervosa has also led to improvements in associated symptoms including body dissatisfaction and restrictive dieting, as well as more global improvements in mood, self-esteem, and social functioning.

Since the efficacy of CBT for bulimia nervosa has been established, the focus of research has been in four areas: (i) whether other types of psychotherapy result in comparable symptom reduction; (ii) what components of CBT make it an effective treatment; (iii) whether CBT is best combined with other treatment simultaneously or in sequence; (iv) whether brief psychoeducational or self-help approaches utilizing components of CBT can be used as alternatives to psychotherapy.

Thus far, CBT has been compared with three treatments: IPT, psychodynamic therapy, and behavior therapy. In general, CBT has been found to be comparable with or superior to all other psychotherapies. Fairburn and colleagues have conducted a series of psychotherapy investigations of two types of interpersonal approaches. The first study compared CBT with short-term focal therapy that dealt with underlying psychological

issues and included psychoeducation about weight and bulimic symptoms. At the end of treatment, reduction in bulimic symptoms was comparable between the two groups; however, CBT produced greater improvements in general psychopathology and social functioning. In the second study, IPT was compared with CBT and with behavior therapy (BT), which resembled CBT but did not address problematic thoughts. In contrast to CBT, IPT did not address eating disorder symptoms directly; instead, treatment focused on addressing and modifying interpersonal patterns in problem areas including grief, interpersonal role disputes, role transitions, and interpersonal deficits. Although all three groups demonstrated reductions in binge eating at the end of treatment, the participants in CBT showed more improvements in purging, attitudes about weight and shape, and dieting behavior than the IPT group, and showed better outcome than the BT group in dieting behavior and attitudes toward weight and shape. Interestingly, the IPT group exhibited continued improvement during the follow-up phase and was equivalent to the CBT group after one year. At long-term follow-up, there were no differences in the percentage of participants free from binge eating and vomiting between the IPT and CBT groups, and both these groups were superior to BT, which was associated with greater relapse than the other two groups. This research indicates that, in the long-run, IPT, and perhaps other interpersonal approaches to psychotherapy, may be comparable with CBT.

Two studies have compared CBT with psychodynamic approaches. The first, conducted by Garner and colleagues, used a supportive expressive therapy approach that was nondirective and assumed that bulimic symptoms reflected underlying interpersonal problems. Although both groups showed significant improvement in the frequency of binge eating, the CBT group exhibited higher rates of remission at the end of treatment and more improvement in dieting behavior, attitudes toward shape, self-esteem, and general psychopathology. A more recent study by Walsh and associates found that CBT was superior to psychodynamically oriented supportive therapy in reducing the frequency of binge eating and vomiting. Thus research suggests that CBT is generally a better approach to treating bulimic symptoms than psychodynamic psychotherapy.

Comparisons between CBT and behavioral approaches alone have yielded inconsistent findings. As described above, CBT was slightly favored over BT in improvements in psychological symptoms (although binge eating and purging were comparable) at the end of treatment, whereas CBT was superior to BT at follow-up in the studies conducted by Fairburn and colleagues. Three other studies have obtained mixed results, with two finding that CBT and BT were comparable and one finding that BT was superior to CBT in reducing binge eating. Although it is not entirely clear whether the addition of a cognitive component enhances the effects of behavioral treatment in the short term, the study conducted by Fairburn and colleagues suggests that incorporating cognitive techniques along with behavioral strategies may enhance long-term outcome.

A second line of research has focused on evaluating specific aspects of cognitive and behavioral approaches. One study found that nutritional therapy was superior to stress management alone in promoting remission from bulimic symptoms. One controversial aspect of behavioral approaches to the treatment of bulimia nervosa has participants eat high-risk food, then refrain from purging. This "exposure and response prevention" intervention is based on the assumption that repeated exposure will reduce the anxiety response to eating that is thought to contribute to purging symptoms. The results of the four studies that have been conducted to evaluate the efficacy of exposure response prevention when added to CBT are highly inconsistent, with two studies finding it helped, one finding it detracted from CBT, and one finding no differences. Thus the appropriateness of including exposure response prevention in CBT is uncertain. A later study's finding that participants who received cognitive therapy without exposure-response prevention were less

likely to relapse than individuals who received exposure-response prevention without cognitive therapy suggests that exposure techniques should be used in the context of CBT rather than alone. A recent investigation by Bulik and colleagues that evaluated the effects of sequencing one of two types of exposure-response prevention or relaxation training after CBT found that adding exposure-response prevention that targeted triggers of binge eating to CBT led to a slight improvement in long-term outcome.

Another question that has been raised is whether sessions should be conducted more frequently at the beginning of treatment in order to facilitate an early interruption in bulimic symptoms. A group CBT study conducted at the University of Minnesota examined the importance of an early emphasis on abstinence from symptoms, as well as the frequency of sessions. An emphasis on early interruption, the use of twice-per-week therapy, or a combination of early interruption with twice-per-week therapy produced better results than the same therapy delivered weekly without an initial focus on abstinence. This study suggests that more frequent sessions may be helpful, especially initially.

More recently, investigators have adapted CBT to brief psychoeducational, self-help, and guided self-help interventions with minimal therapist contact. In general, these studies have found that a significant percentage of bulimic participants were free from symptoms after receiving psychoeducational materials with or without minimal therapeutic contact, with abstinence rates ranging from 15% to 60%. Research investigations have also used these approaches successfully in sequencing studies, in which participants received self-help materials and subsequent psychotherapy if they continued to remain symptomatic. Thus it appears that self-help interventions may be sufficient treatment for a subgroup of individuals with bulimia nervosa.

One problem with CBT studies is that, in spite of the impressive overall reductions in the frequencies of binge eating and purging, a large percentage of individuals remains symptomatic at the end of treatment. Residual symptoms are problematic because they appear to increase the risk of relapse. In addition, psychotherapy studies have been complicated by high drop-out rates, which may result in overestimates of treatment efficacy if participants who are not helped are more likely to drop out. Because a sizable percentage of individuals with bulimia nervosa are not helped sufficiently by CBT, it may be necessary to provide additional or alternative treatments in some cases. A recent multicentered research study that evaluated the effects of sequencing other psychotherapy or medication after CBT for those who were not in remission found that IPT or antidepressant medication only slightly increased the rates of response. Attempting to keep participants in a full course of CBT followed by alternative treatment also led to a very high drop-out rate. For these reasons, it may be preferable to seek to determine who will be responsive to treatment earlier in CBT in order to provide alternative or adjunctive interventions to individuals whose early response indicates that are not likely to achieve remission with it.

### *Pharmacology Studies*

Early in the 1980s investigators became interested in attempting to treat bulimia nervosa using antidepressant drugs, given the high comorbidity of mood disorders in this patient group. Although the initial rationale was that treating the depressive symptoms might help individuals with bulimia nervosa gain better control of their eating behaviors, subsequent studies have shown that nondepressed patients with bulimia nervosa responded equally well to these drugs, suggesting that the mechanism of action may be separate from their antidepressant effects. To date, more than 20 such studies have been completed and the results are fairly consistent, showing significant improvement in the frequency of

problematic eating behaviors (such as binge eating and vomiting) with the use of active drug. The agent that has been studied in the largest number of subjects is fluoxetine hydrochloride, which is now FDA approved for the treatment of bulimia nervosa in the United States. Of interest, using fluoxetine high-dose therapy (for example, 60 mg) appears to be superior to low-dose therapy (for example, 20 mg). Other symptoms often seen in patients with bulimia nervosa, including depression and anxiety, and indices of bulimic pathology, such as degree of concern about weight and shape and drive to restrict food intake, also improve with antidepressant drugs.

Several other classes of compounds have been used experimentally in this patient group, including narcotic antagonists such as naltrexone, tryptophan, and phenytoin. In general, the results do not support the efficacy of these other compounds.

### *Combined Psychotherapy and Medication Studies*

Five studies have examined the combination of psychotherapy and antidepressant medication, with inconsistent results. In general, CBT has been found to be more helpful in reducing bulimic symptoms than medication when either approach is used alone. In addition, CBT combined with medication appears to be superior to medication alone. Whether adding medication to CBT enhances outcome compared with the use of CBT alone is less clear. Two studies have found that the addition of a tricyclic antidepressant to CBT did not lead to greater reductions in binge eating and purging; however, combining medication and CBT facilitated more improvements in certain associated symptoms such as anxiety, depressive symptoms, dietary preoccupation, and hunger.

Recently, Walsh and colleagues compared CBT with supportive psychodynamic psychotherapy, both with and without medication, in which participants were first prescribed desipramine then switched to fluoxetine if the first medication was ineffective. As described above, this study found that CBT was superior to supportive psychotherapy in reducing binge eating and vomiting. The addition of medication was found to enhance the effects of both psychotherapies in improving symptoms of binge eating and depression. Although CBT combined with medication was superior to medication alone, supportive psychotherapy combined with medication was not more efficacious than medication alone. This study indicates that the addition of antidepressant medication may improve the outcome of CBT.

In summary, CBT appears to be superior to medication alone in reducing bulimic symptoms. In addition, there is modest evidence that combining CBT with medication may be more effective than CBT alone. However, the use of medication may also be associated with drop-out, presumably because of side effects. For this reason, the potential risks of using adjunctive medication to CBT need to be considered prior to the initiation of pharmacological treatment.

### *Predictors of Treatment Outcome*

Reviews of prognostic indicators of outcome in bulimia nervosa suggest that research findings are highly inconsistent. In spite of these inconsistencies, a few predictors of poor outcome in bulimia nervosa have been identified in many (but not all) studies including symptoms of Cluster B personality disorders (that is, borderline, narcissistic, histrionic, antisocial), impulsive traits, and low self-esteem. The findings are mixed for the duration and severity of symptoms prior to treatment. The majority of studies have not found an association between depression, a history of anorexia nervosa, age of onset of illness, and

outcome. Residual symptoms at the end of treatment have been associated with a greater likelihood of relapse.

### *Summary*

In summary, research investigations have identified a number of interventions that appear to be helpful in treating symptoms of bulimia nervosa. The treatment approach that has been studied most extensively is CBT, which has been found to be comparable with or superior to all other types of psychotherapy. IPT also appears to be a promising treatment. Antidepressant medications have been found to reduce bulimic symptoms, although comparison studies have found that drugs are generally less efficacious than CBT. Even though the findings are somewhat mixed, there is some evidence that combining drugs with CBT leads to more improvement in bulimic symptoms than using either alone.

## **BINGE-EATING DISORDER**

Binge-eating disorder is characterized by recurrent binge-eating episodes accompanied by a sense of distress, and several associated features including eating until uncomfortably full, eating when not physically hungry, eating alone because of embarrassment, and feelings of disgust, depression, or guilt following overeating. In contrast to bulimia nervosa, individuals with binge-eating disorder do not regularly attempt to prevent weight gain by engaging in purging behaviors, excessive exercise, or fasting. The majority of individuals with binge-eating disorder are obese and often seek treatment for weight loss rather than the binge-eating behavior per se. Currently, binge-eating disorder is included in the Appendix of DSM-IV as an example of an eating disorder, not otherwise specified, and a diagnosis requiring further study. Although it was recognized a number of years ago that a subgroup of obese individuals engage in binge eating, binge-eating disorder has been the focus of more intensive study for only the past decade.

### *Psychotherapy Studies*

Treatment outcome research of binge-eating disorder has paralleled that of bulimia nervosa, with a focus on the use of CBT and IPT. Because the majority of individuals with binge-eating disorder are overweight, behavioral weight-loss strategies have also been incorporated into some treatment programs. Similar to what has been found with bulimia nervosa, CBT and IPT appear to be helpful in reducing the frequency of binge eating in binge-eating disorder. However, these psychotherapeutic strategies do not appear to facilitate weight loss unless behavioral interventions targeting dietary intake and exercise patterns are included as part of treatment.

Four studies of binge-eating disorder have shown that CBT leads to a reduction in binge eating compared with wait-list control samples. Some of the earlier studies included participants with nonpurging bulimia nervosa as well as binge-eating disorder. In addition to improvements in binge eating, improvements in mood and self-esteem have been observed. CBT has been delivered successfully in both individual and group formats. Similar to bulimia nervosa, some relapse has been observed during follow-up assessments. Although CBT is not typically associated with weight reduction at the end of treatment, individuals who remain free from binge eating have been more likely to exhibit weight loss at follow-up compared to participants who remained symptomatic. Several recent studies have also found that treatments delivering cognitive-behavioral tech-

niques using self-help and guided self-help procedures have produced significant reductions in binge eating symptoms.

Using a group IPT manual, Wilfley and colleagues found that like CBT, IPT produced more improvement in binge eating than a wait-list control group. In the same study, IPT was found to be comparable with CBT in reducing binge eating, with neither treatment leading to weight loss. Similar to bulimia nervosa, a later study observed that sequencing IPT after the completion of CBT did not appear to lead to further improvements for individuals who were still asymptomatic after CBT.

Based on the cognitive model of bulimia nervosa that assumes that excessive dietary restriction leads to binge eating, there appeared to be a risk that by encouraging dieting in binge-eating disorder one might exacerbate binge eating. However, preliminary research suggests that incorporating behavioral weight-loss techniques into treatment actually leads to a reduction in binge eating in the short-term and at follow-up. Thus, initial research suggests that behavioral weight-loss strategies that address nutrient intake and exercise patterns can be incorporated into treatment of binge-eating disorder without an eventual worsening of symptoms.

In summary, both CBT and IPT appear to be helpful in reducing binge eating but not in facilitating weight loss. Behavioral approaches to weight loss appear to lead to greater weight reduction as well as reducing the frequency of binge eating. Similar to bulimia nervosa, however, a number of participants in treatment studies do not achieve full remission as a result of psychotherapy, and a minority of individuals relapse during follow-up.

### ***Pharmacology Studies***

The pharmacological literature on binge-eating disorder is quite limited at this point. The available studies suggest that antidepressant medications including desipramine and fluvoxamine can be used to suppress binge eating in this population as can the appetite suppressant d-fenfluramine, which is no longer marketed.

### ***Combined Psychotherapy and Medication Studies***

Only a few studies have attempted to combine psychotherapy with antidepressant medication to target both binge eating and weight loss. Overall, there is only modest evidence that adding desipramine or fluoxetine may enhance CBT or BT, especially in terms of short-term weight loss. Whether these effects are maintained over time is unclear. Currently, several research protocols investigating the combination of psychotherapy and medication are underway.

### ***Predictors of Outcome***

Very little is known about prognostic indicators in binge-eating disorder, although there is some indication that severity of binge eating may be associated with poorer outcome.

### ***Summary***

In summary, CBT has been found to lead to reductions in binge eating, with preliminary evidence indicating that IPT is also efficacious. Antidepressant medications appear to be helpful in treating binge-eating disorder, although to a lesser extent than psychotherapeutic approaches. Although helpful in reducing binge eating, CBT and IPT have not typi-

cally led to short-term weight reduction. Behavioral approaches that specifically address weight loss have been used successfully with individuals with binge-eating disorder to promote both reductions in weight and binge eating.

## ANOREXIA NERVOSA

Anorexia nervosa is an illness characterized by loss of weight or failure to gain weight, resulting in significant emaciation. As defined by DSM-IV, associated symptoms include an intense fear of weight gain, absence of menses, and a disturbance in body image characterized by feeling fat even when underweight, a denial of the seriousness of emaciation, or an undue influence of weight and shape on self-evaluation. DSM-IV describes two subtypes of anorexia nervosa: (i) a binge-eating/purging type, in which the individual engages in binge eating and/or self-induced vomiting, laxative, or diuretic misuse; and (ii) a restricting type, in which the individual does not regularly binge eat or purge. Most research studies have included both subtypes, with adequate differentiation into subgroups only in the most recent studies. As mentioned above, relatively fewer studies have been conducted on the treatment of anorexia nervosa in contrast to bulimia nervosa.

### *Psychotherapy Studies*

Historically, anorexia nervosa has been treated in two phases: inpatient treatment to promote weight restoration, followed by outpatient treatment for weight maintenance, relapse prevention, and continued focus on psychological symptoms. However, restrictions in inpatient insurance coverage that have occurred in recent years under the influence of managed care have led to changes in the structure of treatment for anorexia nervosa. Although extended hospitalization for acute weight restoration is still available in some situations in the United States, inpatient treatment is often limited to short-term use for medical stabilization only. Thus day treatment, partial hospitalization, and outpatient programs are often utilized for weight restoration. However, because the majority of research investigations have been conducted using the previous model of treatment, very little is known about weight restoration using outpatient interventions.

Outcome research indicates that inpatient treatment can be effective in helping individuals with anorexia nervosa regain weight. In general, behavioral strategies have been found to facilitate weight gain in the short term. Although inpatient programs have historically relied on strict reward-and-punishment regimens (in which privileges are restricted and made contingent on weight gain), research indicates that there are few differences between lenient and strict reward/punishment procedures in promoting weight restoration in individuals with anorexia nervosa and that clients tended to prefer more lenient interventions in which they had no restrictions provided they met weekly weight goals.

Very few controlled studies have been conducted on the use of outpatient treatment with anorexia nervosa. In general, the research findings do not provide strong evidence for any particular type or modality of psychotherapy. Comparison studies have not yielded conclusive findings: one study found few differences between CBT, behavioral treatment, and medical monitoring; another found that dietary counseling was only slightly favored over general individuals and family therapy. More recently, a series of British studies reported that behavioral treatment combined with family therapy could be implemented as successfully in an outpatient setting as in an inpatient setting. Preliminary findings also indicate that CBT may be helpful in preventing relapse in individuals with anorexia nervosa who have been weight restored.

Perhaps some of the most informative outpatient studies of the treatment of anorexia nervosa have been conducted by Dare and colleagues at the Maudsley hospital. The first study, comprising individuals who had been weight restored, compared family therapy with individual supportive therapy. The investigators found that family therapy was more helpful than individual therapy for anorexia nervosa patients with an age of onset of the illness prior to age 19, and a duration of illness less than three years. Individual supportive therapy was slightly favored for individuals with an onset of illness after age 18 who also presented with a more chronic course. This study suggests that family therapy may be especially helpful for individuals with an earlier age of onset who are in the acute rather than chronic stages of the illness. A second study, which included adult patients with anorexia nervosa who had been weight restored, found that family therapy was superior to either individual supportive or individual psychoanalytic psychotherapy, especially for individuals with an onset of illness during adolescence or those with bulimic symptoms. A third study comparing two types of family therapy for the treatment of adolescent anorexia nervosa patients found no significant differences overall. However, this study offered some support for using a "counseling" approach, in which the parents and client were seen separately, and parents focused initially on managing their child's eating problem, with families exhibiting high parental criticism.

In summary, only a limited amount of research has been conducted on the use of psychotherapy for the treatment of anorexia nervosa. There is some evidence that family therapy may be helpful, especially for younger clients and those with an earlier age of onset. Little is known about the efficacy of manual-based treatments. However, CBT manuals have been developed for anorexia nervosa, and a number of investigations are currently underway to evaluate the efficacy of CBT and other types of psychotherapy.

### ***Pharmacology Studies***

Several classes of drugs have been used in clients with anorexia nervosa, focusing on improved eating by increasing appetite (for example, cyproheptadine), obsessive-compulsive symptoms (for instance, fluoxetine), mood disturbance (various antidepressants), certain physiological problems that develop in anorexia nervosa such as delayed gastric emptying (cisapride), and the near-delusional beliefs of these clients regarding weight and shape (antipsychotics). Of note, many of the studies examining the use of these agents can be characterized as having small sample sizes and/or low-dose therapy, and most have found negative results. There is some suggestion from controlled treatment trials that amitriptyline at higher doses, and cyproheptadine at higher doses, may be helpful in improving weight gain in hospitalized clients with anorexia nervosa. Most recently, however, interest has shifted to the use of serotonin reuptake inhibitors, particularly fluoxetine, as relapse prevention agents in anorexia nervosa. Available research suggests that very low-weight anorectics may respond marginally or not at all to such drugs, but that partially or completely weight-restored clients may benefit considerably from their use in conjunction with other psychologically based interventions.

### ***Combined Psychotherapy and Medication Studies***

No published controlled studies have utilized a combination of psychotherapy and medication in which both components are evaluated systematically, although this represents a common clinical practice for the treatment of anorexia nervosa. Investigations are underway, including a multicentered trial to compare CBT, fluoxetine, and CBT combined with fluoxetine.

### *Predictors of Outcome*

Similar to findings from studies of bulimia nervosa, results from studies of predictors of treatment outcome for anorexia nervosa have been highly inconsistent. Overall, the presence of self-induced vomiting, longer duration of illness, and disturbances in family relationships and family communication patterns have been predictive of poorer outcome in many (but not all) studies. There is evidence, although somewhat contradictory among studies, that earlier age of onset and shorter duration of illness is associated with more positive outcome.

### *Summary*

In summary, limited research has been conducted on the treatment of anorexia nervosa. In general, behavioral approaches have been found to help facilitate weight restoration in the early phases of recovery. Preliminary findings suggest that certain psychotherapeutic approaches, including CBT and family therapy, and some medications, including serotonin reuptake inhibitors, can be useful in treating and preventing relapse in anorexia nervosa.

## **CONCLUSIONS AND LIMITATIONS**

In conclusion, psychotherapy, particularly CBT and IPT, and antidepressant medications are helpful for the treatment of eating-disorder symptoms. Overall, findings from treatment outcome studies are encouraging, especially for the treatment of bulimic symptoms. However, some aspects of research complicate the interpretation of these findings. First, research studies have strict inclusion and exclusion criteria for participants. Thus more complicated cases, including individuals with comorbid substance dependence or who engage in self-injurious behaviors, have sometimes been excluded from empirical investigations. In addition, we know very little from research findings about the treatment of males and of adolescents with eating-disorder symptoms. Finally, interventions that are conducted in research settings are typically quite different from treatment that is implemented in clinical settings: Participants complete lengthy assessment batteries; clinicians receive extensive training and ongoing supervision in manual-based psychotherapies; sessions are audiotaped; treatment is time limited. The extent to which results from research studies can be generalized to clinical practice is not clear and requires further investigation.

Although reductions of symptoms in treatment outcome studies are often significant, a large number of people with bulimia nervosa, anorexia nervosa, and binge-eating disorder are not free from symptoms at the end of treatment. In addition, many who improve initially are found to relapse during follow-up. Although research has identified certain therapeutic strategies, such as CBT, that are helpful for a number of individuals, there is clearly a great need for alternative, adjunctive, and integrative treatments as well as strategies to identify the most appropriate treatments for specific individuals.

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