Introduction to Magellan’s Adopted Clinical Practice Guideline for the Assessment and Treatment of Patients With Eating Disorders
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Magellan Clinical Practice Guideline: Eating Disorders

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Purpose of This Document

Magellan Healthcare has adopted the American Psychiatric Association's (APA) Practice Guideline for the Treatment of Patients With Eating Disorders, Third Edition (2006) and Guideline Watch (August 2012): Practice Guideline for the Treatment of Patients with Eating Disorders, 3rd Edition to serve as an evidence-based framework for practitioners’ clinical decision-making with adult patients who have an eating disorder. The adopted guideline indicates that while APA practice guidelines are for the care of adults, this particular guideline for eating disorders includes recommendations that apply to adolescents, since anorexia nervosa and bulimia nervosa often begin during this period. This guideline makes special notations when recommendations apply exclusively to a certain age group.

An extensive literature review suggests that the APA guideline is among the most comprehensive, evidence-based clinical practice guidelines (CPGs) for this disorder, and in general, APA guidelines are widely used. The guideline covers most areas of psychiatric management of patients with eating disorders, from clinical features and epidemiology to numerous aspects of treatment approach and planning. Since the guideline is broadly accepted by managed behavioral healthcare organizations (MBHOs), this adoption will minimize the burden on practitioners serving multiple MBHOs.

As with all guidelines, these adopted guidelines and Magellan’s introduction augment, but do not replace, sound clinical judgment. As a matter of good practice, clinically sound exceptions to the treatment guidelines should be noted in the member’s record. Additionally, this guideline does not supersede Food and Drug Administration (FDA) determinations or other actions regarding withdrawal or approval of specific medications or devices, and their uses. It is the responsibility of the treating clinician to remain current on medication/device alerts and warnings issued by the FDA and other regulatory and professional bodies, and to incorporate such information in treatment decisions.
Additional Recommendations Based on Recent Literature Review

The APA guideline is based on a literature review through 2004, while the APA Guideline Watch is based on information from randomized, controlled trials and meta-analyses published through December 13, 2011. Magellan conducted a further review of the clinical literature on assessment and treatment of eating disorders published through December 2014. We summarize key relevant recommendations from this more recent literature review here. Magellan encourages providers to be familiar with this information, as well as the information discussed in the guideline.

Executive Summary
(Discussion of changes/new information in this updated guideline)

Epidemiology

The Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) indicates that the 12-month prevalence of anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED) among young females is approximately 0.4% for AN, 1-1.5% for BN, and 1.6% for BED (American Psychiatric Association, 2013). AN and BN are less common in males with an approximately 10:1 female-to-male ratio; BED is also less common in males with an approximately 2:1 female-to-male ratio. The DSM-5 also indicates that the prevalence of BED among females from racial or ethnic minority groups is approximately the same as for white females. BED is more prevalent among those who seek weight loss treatment (American Psychiatric Association, 2013).

In a community sample of adolescent females aged 12 to 15 at baseline (n=496) who completed annual diagnostic interviews over 8-years, researchers examined the lifetime prevalence and annual incidence of eating disorders by age 20, finding that the overall lifetime prevalence of any DSM-5 eating disorder by age 20 was 13.1% (Stice et al., 2013). This study also found that adolescents with DSM-5 eating disorders had greater functional impairment, emotional distress, suicidality, and elevated treatment-seeking behavior than participants without an eating disorder. Further, the data showed that atypical/subthreshold AN, BN, and BED are associated with a similar degree of impairment as threshold AN, BN, and BED. Researchers suggested that the more descriptive diagnoses of atypical/subthreshold AN, BN, and BED, which replaced the DSM-IV classification of eating disorders not otherwise specified (EDNOS), may foster advances in prevention and treatment interventions for these psychiatric conditions. The researchers point out that 13% of female adolescents experiencing an eating disorder during the second decade of life necessitates effective prevention programs as well as screening to identify those with need for treatment interventions (Stice et al., 2013).

A study, including two groups of college-aged and college graduate-aged women (n=96) where 57 participants were white, 21 were African American, and the average age of participants was 30 years, examined how ethnicity affects body image and beauty ideals...
and how differences in body images affect eating behaviors (Medscape, 2014). Participants completed a survey focusing on rating images of various body sizes that included the Questionnaire on Eating and Weight Patterns-Revised, the Body Shape Questionnaire, and the Beauty Ideals and Body Image Questionnaire. To answer the question, “How would you like to look in a bikini?” participants selected the heaviest figure they considered still attractive and the thinnest figure considered still attractive. Results showed that the groups differed on rating the thinnest and still attractive and that white women were slightly more dissatisfied with their bodies than were African American women. Additionally, white women were more likely to report binging behavior than were African American women. The researcher noted the need for larger studies examining the impact of racial and cultural differences on eating disorders in order to optimize treatment.

Past studies have established associations between social media use and body dissatisfaction and eating pathology (Mabe et al., 2014). In one such study, including female college students aged 18-19 years (n=960), a small positive correlation was observed between time spent on Facebook and disordered eating for participants in fall and spring semesters. In a recent replication study, researchers randomly assigned women (n=84) to use Facebook or to use an alternate Internet site for 20 minutes to identify associations between Facebook use and disordered eating (Mabe et al., 2014). Researchers examined whether Facebook use causes temporal changes in eating disorder risk factors, e.g., weight/shape concerns and anxiety. Participants were randomized to either a group where they were instructed to log onto their Facebook and spend 20 minutes on the site or to a group where they were instructed to use the Internet for 20 minutes on Wikipedia researching the ocelot and on YouTube watching a preselected ocelot video. Before Internet use, participants completed a demographic survey including questions about age, race, and ethnicity, Visual Analog Scales (measuring level of preoccupation with weight, preoccupation with shape, and urge to exercise), and the State Trait Anxiety Inventory State scale (measuring anxiety). After Internet use, they completed another Visual Analog Scales, the State Trait Anxiety Inventory State scale, and the EAT-26 (eating attitudes test). They also answered questions regarding their Facebook use. Study results showed that greater disordered eating was associated with frequent Facebook use compared to an alternate internet activity. Frequent Facebook use was also associated with the maintenance of weight/shape concerns. Researchers suggested the need for more research to understand the effects of social media in affecting risk for eating disorders (Mabe et al., 2014).

Feeding and Eating Disorders – Changes in the DSM-5

Several changes representing the symptoms and behaviors of patients with eating disorders are included in the DSM-5 released in May 2013 (American Psychiatric Association, 2013). The most substantial of these changes is the recognition of BED as its own category of eating disorder. In the DSM-IV, it was included in the category, “Eating Disorders Not Otherwise Specified” (EDNOS) that was eliminated in DSM-5. The minimum average frequency of binge eating required for diagnosis of BED has been changed in DSM-5 to at least once weekly over three months.
The most significant change for anorexia nervosa is the deletion of the DSM-IV criterion requiring amenorrhea, or the absence of at least three menstrual cycles. In addition to intense fear of gaining weight or of becoming fat, Criterion B now includes persistent behavior interfering with weight gain. DSM-5 criteria for bulimia nervosa reduce the frequency of binge eating and compensatory behaviors from twice a week to once a week for at least three months. Other changes in the feeding and eating disorders chapter of the DSM-5 include the addition of pica, rumination and avoidant/restrictive food intake disorder (ARFID), listed in the DSM-IV among Disorders Usually First Diagnosed in Infancy, Childhood or Adolescence, a chapter that is not included in DSM-5.

The new DSM-5 category replacing EDNOS is Other Specified Feeding or Eating Disorder, which applies to presentations not meeting full criteria for the disorders included in the feeding and eating disorders diagnostic class. The specific reason why the symptoms do not meet the criteria is communicated by the clinician. Another new category, Unspecified Feeding or Eating Disorder, applies to presentations not meeting full criteria for the disorders included in the feeding and eating disorders diagnostic, where the clinician chooses not to specify the reason that the criteria is not met.

**Anorexia Nervosa (AN)**

In a recent study, a meta-analysis was performed on 18 randomized controlled intervention trials investigating the effectiveness of pharmacotherapy in the treatment of adults and adolescents with AN (n=869), with efficacy measured in terms of weight gain or weight restoration (de Vos et al., 2014). This study presented meta-analyses on pharmacotherapy for AN including: antidepressants (fluoxetine, amitryptyline, clomipramine), antipsychotics (olanzapine, sulpiride), and hormonal therapy (dehydroepiandrosterone, nutropin, insulin-like growth factor, recombinant human IGF-I + ovcon, recombinant human growth hormone, risedronate/testosterone, fysiologic estrogen replacement, norgestimate/ethinyl estradiol). Researchers first performed a meta-analysis comparing the three forms of pharmacotherapy with placebo, finding that when grouping all medication together, pharmacotherapy was insignificantly more effective than placebo. Meta-analyses for the three medicines apart showed that in the treatment of AN, hormonal therapy had a significantly larger effect on weight compared to placebo. Researchers pointed out that meta-regression suggested that patients with AN may benefit in the short term with hormonal medicine, but fail to have better recovery in the long term. Compared to placebo, antidepressants and antipsychotics had no significant effect on weight. Researchers suggested that clinicians consider not only weight, but also a broader definition of improvement related to treatment of patients with AN (de Vos et al., 2014).

The Anorexia Nervosa Treatment of Outpatients (ANTOP) study, a multicenter, randomized controlled efficacy trial in adult females 18 years or older with AN, assessed the efficacy and safety of two outpatient treatments for AN: focal psychodynamic therapy and enhanced cognitive behavior therapy (Zipfel et al., 2014). Adults with AN (n=242) were randomized to treatment over 10 months with either focal psychodynamic therapy,
enhanced cognitive behavior therapy, or optimized treatment as usual including outpatient psychotherapy and structured care from a family doctor. Focal psychodynamic therapy focused on therapeutic alliance; attitudes/behavior viewed as acceptable; self-esteem; association between interpersonal relationships and eating behavior; and anticipation of treatment termination. Enhanced cognitive behavior targeted cognitive restructuring, mood regulation, social skills, shape concern, and self-esteem, with enhancement of self-efficacy and self-monitoring as crucial elements of the treatment process. Optimized treatment as usual consisted of support in accessing therapy and included patients’ family doctors who took weight measurements and did blood tests. Patients were admitted to hospitals when body mass index fell below 14 kg/m². Body mass index (BMI) increased in all treatment groups from baseline to 12-month follow-up with no significant difference in weight gain between the groups. Focal psychodynamic therapy was most effective at 12-month follow-up with respect to global outcome measures (mean weight, BMI, and comorbidities), while enhanced cognitive behavior therapy was more effective with respect to the speed of weight gain and improvements in eating disorder psychopathology (Structured Interview for Anorexic and Bulimic Disorders [SIAB-EX total scores]). Researchers concluded that this study provides evidence supporting the use of manual-based interventions, and that optimized treatment as usual combining psychotherapy and structured care from a family doctor be regarded as a solid baseline treatment for adult outpatients with AN (Zipfel et al., 2014).

Dahlgren and Rø discussed a relatively new remediation therapy for AN: cognitive remediation therapy (CRT). This interactive treatment, an addition to treatment as usual specifically tailored to improve cognitive flexibility and central coherence, encourages patients to reflect on their styles of thinking to enhance the neurocognitive skills relevant to overall recovery goals (Dahlgren and Rø, 2014). Researchers systematically reviewed 21 studies exploring CRT in adults and adolescents: 3 single case studies, each including a single, adult female inpatient aged 21, 31 and 41; 14 case series with great variety among them, including ages from 13 to adult, resulting in difficulty in comparisons and generalizations of results; and 4 randomized controlled trials including adults. Some specific results from single case studies demonstrated the CRT resulted in cognitive set-shifting while the case series showed improvement in cognitive performance. Results from the randomized controlled trials found CRT effective in improving neurocognitive function and enhancing the effectiveness of concurrent treatment. Based on their review, researchers concluded that evidence supports the feasibility of CRT for AN across ages and illness severity, and suggested the intervention is effective in “reducing attrition, enhancing the efficacy of concurrent treatment, improving cognitive set-shifting and quality of life, and reducing eating disorder psychopathology.” They suggested future studies focusing on the long-term effects of CRT, influence of comorbidity, effectiveness of CRT for adolescents, transdiagnostic versions of CRT in larger samples, and family CRT as treatment for young girls with AN (Dahlgren and Rø, 2014, page 9).

A recent study examined relapse and remission rates in a convenience sample of a subgroup from an original cohort of adolescents ages 12 to 18 with AN (n=121) who completed a randomized clinical trial comparing family-based therapy (FBT) with
adolescent-focused individual therapy (AFT) (Le Grange et al., 2014). Remission was defined as “≥ 95% EBW for age, height, and gender, and a global Eating Disorder Examination (EDE) score within 1 SD of the community mean of 1.54 for adolescents” (Le Grange et al., p 1163). In this exploratory study, follow-up data at 2, 3, and 4 years post-treatment was assessed for participants (n=79) in the convenience sample. One-year follow-up data were available for 93 of the original cohort. Out of the 33 participants who had achieved full remission at 1-year post-treatment, 26 participants were assessed on average 2.68 years later and only 2 participants relapsed showing no significant main effect of treatment type. LeGrange et al. related this result to their hypothesis about the stability of remission (i.e., once achieved, it was stable regardless of treatment type). Out of the 66 participants who had not achieved full remission at 1-year post-treatment, 44 participants were assessed on average 2.49 years after 1-year follow-up and 10 participants achieved remission for the first time. Again, these results showed no significant main effects for treatment type. Researchers note that new remissions were few during the follow-up period, suggesting the need for future research investigating ways to enhance outcomes. They also stressed the importance of early and effective interventions for adolescents with AN (Le Grange et al., 2014).

**Bulimia Nervosa (BN)**

In a recent, randomized controlled trial, researchers compared psychoanalytic psychotherapy and CBT in the treatment of BN (Poulsen et al., 2014). Patients with BN whose mean age was 25.8 years (n=70) received either weekly psychoanalytic psychotherapy over 2 years or 20 sessions of CBT over 5 months. This study aimed to test the efficacy of a longer-term psychoanalytic psychotherapeutic treatment by comparing it with an “enhanced” variant of CBT. An outcome measure, the Eating Disorder Examination interview, was administered at baseline, after 5 months, and after 2 years. Psychoanalytic psychotherapy focused on the therapeutic relationship, involving weekly 50-minute sessions over 2 years that invited the patient to talk freely. “Enhanced” CBT focused on modifying the patient’s eating disorder psychopathology, including twice-weekly sessions for the first 4 weeks, weekly for the next 10 weeks, and every 2 weeks for the remaining weeks. Although both treatments resulted in improvement, the improvement was greater in those receiving CBT. At end of the respective periods of treatment, 42% of patients receiving CBT had stopped binge eating and purging compared with 15% of those receiving psychoanalytic psychotherapy. Additionally, the effect of CBT was faster than that of psychoanalytic psychotherapy. At the end of the 5-month assessment point, only 6% of those receiving psychoanalytic psychotherapy had stopped binge eating and purging, compared with 42% of those receiving CBT. Researchers noted that the most likely reason for the different effects of the two treatments may relate to the differences in approach to bulimic core symptoms, referring to CBT’s symptom-focused treatment compared to psychoanalytic psychotherapy designed as a nondirective therapy - not specifically directed at the control of binge eating. They indicated a need for development and testing of a more structured, symptom-focused version of psychoanalytic psychotherapy for BN (Poulsen et al., 2014).
Another study provided evidence that CBT may work faster than other interventions in reducing eating disorder symptoms in patients with BN (Jones and Clausen, 2013). Researchers discussed the challenges of changing unhealthy eating behaviors in patients with BN who are often hesitant to enter treatment and who perceive their maladaptive eating behavior as necessary. They suggested that patients’ longer amounts of time exposed to their symptoms and time spent in therapy may lead to increased ambivalence and hopelessness. This study’s aim was the evaluation of a brief group CBT program in the treatment of new female patients aged 16-38 (n=205) diagnosed with BN. This 8-week program included groups of eight patients in one session per week. The program focused on changing pathological eating behavior while exploring its causes. Evaluation of weight occurred before each session and patients used an eating diary. The outcome measure, the Eating Disorder Examination, was used at initial assessment and at post-treatment. Results showed significant reductions in the frequency of the following: binging, self-induced vomiting, laxative use, physical exercise, and intended restrictive eating. Researchers noted the finding that CBT seemed to reduce concerns with body shape and weight at a lesser extent than eating concerns, suggesting that remission of shape and weight concerns are more challenging for the patient. Researchers encouraged future research to examine the optimal duration of psychotherapy in treating individuals with BN (Jones and Clausen, 2013).

**Binge Eating Disorder (BED)**

A recent exploratory study conducted secondary analyses of a published trial of guided self-help dialectical behavior therapy (DBT) for BED (Masson et al., 2013). It explored whether the change in self-reported emotion regulation during treatment was associated with abstinence from binge eating at post-treatment and four-, five-, and six-month follow-up in community-based men and women (n=60) with BED (Wallace et al., 2014). In the trial of guided self-help DBT, participants, with mean age of 42.8 years, were randomized to self-help DBT or wait-list, with participants receiving DBT treatment over a period of 13 weeks. Participants randomly assigned to immediate treatment reported significantly fewer past-month binge eating episodes and significantly greater rates of abstinence from binge eating than those assigned to delayed treatment (after a 3-month waiting period). These participants also demonstrated improved emotion regulation scores at post-treatment, but the researchers in the study did not examine an association between emotion regulation and binge eating. Analyzing the full sample from the trial, Wallace et al. utilized the data from the treatment trial, finding the amount of change in emotion regulation was associated with binge abstinence at post-treatment, four-, five-, and six-month follow-up. The change in emotion regulation from pre-treatment to post-treatment was about three times greater among participants who were binge-abstinent compared to those who were not binge-abstinent. Researchers suggested further research considering strategies to enhance emotion regulation across a range of individuals with BED and potentially improving treatment outcomes (Wallace et al., 2014).

A recent randomized placebo-controlled clinical trial examined the efficacy and safety of lisdexamfetamine dimesylate (Vyvanse®), approved in the U.S. to treat ADHD, to treat...
moderate to severe BED (McElroy SL, et al., 2014). Adults aged 15 -55 (n=260) with a diagnosis of BED were randomized to one of four groups: one group received 30 mg of lisdexamfetamine daily; the second group started with 30 mg/d, increasing to 50 mg within three weeks; the third group received 30 mg/day and increased to 70 mg/d within three weeks; and the fourth group received an inactive placebo pill. Outcomes studied in this trial included the change in binge eating behaviors (days per week) and binge eating cessation for 4 weeks. Results showed that at week 11, binge eating was not curtailed in the group with the lowest dosage. Lisdexamfetamine dimesylate treatment with 50 and 70 mg/d resulted in a significant decrease in weekly binge eating days per week compared with placebo. The number of binge eating episodes also decreased in the 50 and 70 mg/d groups. With all doses, a greater proportion of participants achieved 4-week cessation of binge eating episodes and global improvement of symptom severity than with placebo. Researchers suggested that these findings provide preliminary evidence of lisdexamfetamine’s effectiveness in treating moderate to severe BED. The types and frequency of adverse effect in the lisdexamfetamine treatment group were consistent with those seen in studies of lisdexamfetamine in adults with ADHD. Consistent with other studies of psychostimulants, small mean increases in heart rate were noted with lisdexamfetamine treatment. Researchers cautioned that lisdexamfetamine is a schedule II controlled substance with a black box warning noting its potential for abuse and dependence. They suggest further studies assessing lisdexamfetamine as a treatment option for BED (McElroy et al., 2014).

A later study examined longer-term effectiveness of fluoxetine and CBT for BED (Grilo et al., 2012). Overweight patients aged 18-60 with BED (n=81) randomized to fluoxetine only, CBT plus fluoxetine, or CBT plus placebo were assessed before, during, post-treatment, and 6- and 12-months after completing treatment. Follow-up remission rates at 12-months were 3.7%, 26.9%, and 35.7% for fluoxetine-only, CBT plus fluoxetine, and CBT plus placebo respectively. On clinical outcomes, e.g., eating and weight concerns, depression, global score, CBT and CBT plus fluoxetine were superior to fluoxetine-only. These findings support the longer-time effectiveness of CBT only through 12-months after treatment completion. Significant changes in body mass index did not occur with either treatment, although patients treated with CBT plus placebo had significantly lower body mass index at 12-month follow-up than those treated with fluoxetine only or combined fluoxetine and CBT. Researchers concluded that based on these findings, CBT, but not fluoxetine, has long-term effectiveness in treating BED (Grilo et al., 2012).

**Pica and Rumination Disorder**

Pica and rumination disorders are distinct categories in the DSM-5 chapter on feeding and eating disorders. Inclusion in this chapter indicates that the diagnosis can be made of individuals of any age. The overall prevalence of pica and rumination disorder is difficult to determine, as the definition of pica and the methodology of data collection vary among populations. A lack of reporting also affects inconclusive prevalence. Mishori and McHale reported that according to some estimates, 50% or more of children between the ages of 18 and 36 months ingest non-food items such as paper, chalk, and dirt. Although this practice
usually decreases with age, authors estimated that 10% of children older than 12 years engage in this activity. Pica occurring in persons with developmental disabilities such as autism is considered a psychiatric condition, whereas researchers disagree about whether some forms of pica, such as geophagia (eating soil or clay), are abnormal behaviors (Mishori and McHale, 2014).

In a study conducting structured interviews with adolescent and young adult females with a mean age of 18.1 years from a residential eating disorder center (n=149) and adult males and females with a mean age of 45.8 years with overweight or obesity from an outpatient weight-loss clinic (n=100), Delaney et al. found that pica and ruminating disorder were rare (Delaney et al, 2015). Researchers noted that according to DSM-5, a pica disorder diagnosis is possible in the presence of another eating disorder, as long the other eating disorder does not drive the motivation for eating the non-food item (e.g., suppression of hunger). Unlike pica, they point out that rumination disorder is not a diagnosis when another DSM-5 eating disorder is present. In this study, researchers found that frequency for both pica and rumination disorder was lower than in previous studies, possibly due to the stricter definitions of DSM-5 (e.g., addition of the “non-food” requirement). Delaney et al. highlighted the challenges of differential diagnosis with other forms of disordered eating (Delaney et al., 2015).

Epidemiology

Recent epidemiological data/trending on eating disorders in the United States has been published since the release of the APA guideline. According to the American Academy of Pediatrics (AAP) Clinical Report – Identification and Management of Eating Disorders in Children and Adolescents, ”The epidemiology of eating disorders has gradually changed; there is an increasing prevalence of eating disorders in males and minority populations in the United States as well as in countries in which eating disorders had not been commonly seen. Of particular concern is the increasing prevalence of eating disorders at progressively younger ages. A recent analysis by the Agency for Healthcare Research and Quality revealed that from 1999 to 2006, hospitalizations for eating disorders increased most sharply – 119 percent for children younger than aged 12 years” (Rosen and the Committee on Adolescence, 2010, p. 1240).

Other new important information on the determinants of eating disorder symptomatology in adolescents was garnered through a very large epidemiology health survey (n=2,036) conducted in the Portugal school system (Costa et al. 2008). This study concluded that higher body mass index and higher depressive symptomatology were associated with more severe eating disorder symptomatology in both sexes. Additionally, a sex effect on the association between socioeconomic status and eating disorder symptomatology was found. Girls with higher socioeconomic status and boys with lower socioeconomic status presented with more eating disorder symptomatology. These investigators also shared in their report that, “in the previous decade, the prevalence of eating disorders has progressively increased, whereas the severity of observed cases has decreased,” signaling a substantial number of subclinical and intermediate forms of dieting and eating concerns (Costa et al. 2008, p. 1126).
A later population-based study examined the prevalence and correlates of eating disorders using data from the National Comorbidity Survey Replication Adolescent Supplement (NCS-A), a large, cross-sectional sample of US adolescents (n=10,123) aged 13 to 18 years (Swanson et al. 2011). The NCS-A sample was based on both a household sample (n=879) and a school sample (n=9,244). Researchers found lifetime prevalence rates of anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED) of 0.3 percent, 0.9 percent and 1.6 percent respectively. The twelve-month prevalence rates of AN, BN and BED were 0.2 percent, 0.6 percent and 0.9 percent respectively. BN and BED were each more prevalent in girls, but there were no sex differences in the prevalence of AN. However, this study found that subthreshold anorexia nervosa was much more prevalent in girls than boys (15:1 ratio). Investigators explained how these results are different from those previously reported, stating, “The sex ratio for most eating spectrum disorders in this study was generally smaller than that in prior treatment-seeking samples and considerably smaller than the 9:1 ratio stated in the DSM-IV. The lack of a female preponderance of eating disorders could be attributable to either the methods of the present study or a true lack of a sex difference in eating disorders in adolescence. The large female to male ratio for SAN (subthreshold anorexia nervosa) provides one indication that the difference may be genuine. Future analyses will explore possible explanations for sex differences in eating symptoms and disorders.” (Swanson SA et al. 2011, page 718). The highest prevalence for BN was shown in Hispanic adolescents, while non-Hispanic white adolescents tended to have highest prevalence of AN. There was also a trend toward ethnic minorities reporting more BED. The majority of adolescents with an eating disorder also met criteria for at least one other lifetime DSM-IV disorder assessed in this study. Social impairment was reported in 88.9 percent of respondents with AN, and almost 20 percent reported severe social impairment associated with their eating or weight problems. A majority of adolescents with eating disorders sought treatment for emotional or behavioral problems, but only a small minority received treatment specifically for eating or weight problems.

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subthreshold AN, BN, and BED are associated with a similar degree of impairment as threshold AN, BN, and BED. Researchers suggested that the more descriptive diagnoses of atypical/subthreshold AN, BN, and BED, which replaced the DSM-IV classification of eating disorders not otherwise specified (EDNOS), may foster advances in prevention and treatment interventions for these psychiatric conditions. The researchers point out that 13% of female adolescents experiencing an eating disorder during the second decade of life necessitates effective prevention programs as well as screening to identify those needing treatment interventions (Stice et al., 2013).

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The new DSM-5 category replacing EDNOS is Other Specified Feeding or Eating Disorder, which applies to presentations not meeting full criteria for the disorders included in the feeding and eating disorders diagnostic class. The specific reason why the symptoms do not meet the criteria is communicated by the clinician. Another new category, Unspecified Feeding or Eating Disorder, applies to presentations not meeting full criteria for the disorders included in the feeding and eating disorders diagnostic, where the clinician chooses not to specify the reason that the criteria is not met.

**Anorexia Nervosa**

The APA guideline describes limited evidence for the use of medications in restoring weight, preventing relapse or treating chronic anorexia nervosa. It emphasizes that a clinician’s decision to use psychotropic medications for weight restoration in a patient with anorexia nervosa (AN) must be based on the patient’s individual presentation. The guideline notes that selective serotonin reuptake inhibitors (SSRIs) combined with psychotherapy are widely used in treating anorexia. The guideline also indicates that more research is needed to evaluate the efficacy of the second-generation antipsychotics (SGAs) where initial clinical impressions have suggested that they may be useful in patients with severe, unremitting resistance to gaining weight, severe obsessional thinking and denial of delusional proportions. Regarding this clinical issue, a randomized clinical trial of 34-day hospital patients with anorexia nervosa demonstrated that, compared with placebo, a
flexible dose regimen of the SGA, olanzapine (2.5 mg/day to 10 mg/day), resulted in a greater rate of increase in weight, earlier achievement of target body mass index and a greater rate of decrease in obsessive symptoms. Researchers reported that they found no serious adverse side effects, e.g., extrapyramidal symptoms, excessive sleepiness, dizziness or galactorrhea, during weekly medical examinations. Additionally, blood glucose levels randomly tested each week in all patients showed no evidence of impaired glucose tolerance or de novo development of diabetes mellitus in any participant (Bissada et al. 2008).

Due to the limitations of the small sample sizes of individual studies showing mixed results, a later meta-analysis of antipsychotic effects in patients with anorexia nervosa was performed (Kishi et al. 2012). Included in this meta-analysis were eight randomized controlled trials including anorexia nervosa patients (n=221) who were randomized to one of five different antipsychotics, i.e., olanzapine, quetiapine, risperidone, pimozide, sulpiride, placebo or usual care. Analysis of the pooled data showed no significant differences between antipsychotics and the comparison groups regarding efficacy outcomes, e.g., body weight, body mass index and psychopathology related to anorexia. Of all the antipsychotics included in the trials, olanzapine was the most weight-gain producing medication, but this result was nonsignificant. The eight trials were all of short duration (≤ 12 weeks); longer-term efficacy and safety data are needed in future studies. The APA Guideline Watch reports that the World Federation of Societies of Biological Psychiatry concluded that Grade B evidence, i.e., limited positive evidence from controlled studies, supports the use of olanzapine for weight gain.

In a recent study, a meta-analysis was performed on 18 randomized controlled intervention trials investigating the effectiveness of pharmacotherapy in the treatment of adults and adolescents with AN (n=869), with efficacy measured in terms of weight gain or weight restoration (de Vos et al., 2014). This study presented meta-analyses on pharmacotherapy for AN including: antidepressants (fluoxetine, amitryptyline, clomipramine), antipsychotics (olanzapine, sulpiride), and hormonal therapy (dehydroepiandrosterone, nutropin, insulin-like growth factor, recombinant human IGF-I + ovcon, recombinant human growth hormone, risedronate/testosterone, fysiologic estrogen replacement, norgestimate/ethinyl estradiol). Researchers first performed a meta-analysis comparing the three forms of pharmacotherapy with placebo, finding that when grouping all medications together, pharmacotherapy was insignificantly more effective than placebo. Meta-analyses for the three medicines apart showed that in the treatment of AN, hormonal therapy had a significantly larger effect on weight compared to placebo. Researchers pointed out that meta-regression suggested that patients with AN may benefit in the short term with hormonal medicine, but fail to have better recovery in the long term. Compared to placebo, antidepressants and antipsychotics had no significant effect on weight. Researchers suggested that clinicians consider not only weight, but also a broader definition of improvement related to treatment of patients with AN (de Vos et al., 2014).

The APA guideline indicates that for children and adolescents, evidence supports that family treatment is the most-effective intervention. The guideline also emphasizes that for
some outpatients, a short-term course of family therapy may be as effective as a long-term course if patients do not have severe obsessive-compulsive features or non-intact families. The efficacy of family therapy for adolescent anorexia was analyzed in a five-year follow-up of 40 patients in the United Kingdom who received either conjoint family therapy (CFT) or separated family therapy (SFT) – i.e., where the adolescent was seen individually and the parents attending separate sessions with the same therapist. Their analysis showed that overall there was little to distinguish the two treatments at five years, with more than 75 percent of subjects having no eating disorders symptoms. Other findings showed no deaths in the cohort and only 8 percent of those who had achieved a healthy weight by the end of treatment reported any relapse. Researchers suggested that those patients who respond well to outpatient family therapy generally stay well (Eisler et al. 2007).

The APA guideline also indicates that cognitive-behavioral, interpersonal and psychodynamic approaches, or a combination of these approaches, have the most evidence and consensus for use in the treatment of adults with anorexia. In addition, the APA guideline suggests that individual psychotherapy may be required for at least one year or many more, due to the enduring nature of the illness and the need for support during recovery. A more recent clinical trial was conducted to evaluate the relative efficacy of family-based treatment (FBT) versus adolescent-focused individual therapy (AFT) for adolescents with anorexia nervosa. Therapy sessions occurred in 24 outpatient hours over 12 months (Lock et al. 2010). The FBT modality was designed to focus on several goals: 1) helping parents not feel responsible for causing the disorder, 2) reinforcing positive aspects of parenting, 3) developing family strategies for weight restoration in the child with anorexia, 4) transitioning weight and eating control back to the child and 5) establishing a new and healthy adolescent relationship with the parents. The AFT modality was based on the theory that individuals with anorexia manifest ego deficits and confuse self-control with biological needs. This intervention was designed to help patients learn to identify/define their emotions and to tolerate them, rather than using starvation as a mechanism to numb the affective states. Both treatments led to considerable improvement and were similarly effective in producing full remission at the end of treatment. However, at both the six- and 12- month follow-up, FBT was significantly superior to AFT in facilitating full remission (Lock et al. 2010).

In a later two-site study, investigators examined moderators, mediators and predictors of remission for adolescents with anorexia nervosa (n=121) who participated in the above trial of FBT vs. AFT (Le Grange et al. 2012). Eating-related obsessionality and eating disorder-specific psychopathology were identified as moderators at end of treatment. Adolescents with higher levels of eating psychopathology and eating related obsessionality benefitted more from FBT than from AFT, and no mediators of treatment outcome were identified. Prior hospitalization, older age and duration of illness were identified as non-specific predictors of outcome. Investigators concluded that these exploratory findings may provide a rationale for examining treatment effects on outcomes for patients with different levels of eating-related psychopathology in future studies.
The Anorexia Nervosa Treatment of Outpatients (ANTOP) study, a multicenter, randomized controlled efficacy trial in adults with AN, assessed the efficacy and safety of two outpatient treatments for AN: focal psychodynamic therapy and enhanced cognitive behavior therapy (Zipfel et al., 2014). Adults with AN (n=242) were randomized to treatment over 10 months with either focal psychodynamic therapy, enhanced cognitive behavior therapy, or optimized treatment as usual including outpatient psychotherapy and structured care from a family doctor. Focal psychodynamic therapy focused on therapeutic alliance and attitudes/behavior viewed as acceptable, self-esteem, association between interpersonal relationships and eating behavior, and anticipation of treatment termination. Enhanced cognitive behavior included cognitive restructuring, mood regulation, social skills, shape concern, and self-esteem with enhancement of self-efficacy and self-monitoring as crucial elements of the treatment process. Optimized treatment as usual consisted of support in accessing therapy and included patients’ family doctors who took weight measurements and did blood tests. Hospital admissions occurred when body mass index fell below 14 kg/m². Body mass index (BMI) increased in all treatment groups from baseline to 12-month follow-up with no significant difference in weight gain between the groups. Focal psychodynamic therapy was most effective at 12-month follow-up with respect to global outcome measures (mean weight, BMI, and comorbidities), while enhanced cognitive behavior therapy was more effective with respect to the speed of weight gain and improvements in eating disorder psychopathology (Structured Interview for Anorexic and Bulimic Disorders [SIAB-EX total scores]). Researchers concluded that this study provides evidence supporting the use of manual-based interventions, and that optimized treatment as usual combining psychotherapy and structured care from a family doctor be regarded as a solid baseline treatment for adult outpatients with AN (Zipfel et al., 2014).

Dahlgren and Rø discussed a relatively new remediation therapy for AN: cognitive remediation therapy (CRT). This interactive treatment, an addition to treatment as usual and specifically tailored to improve cognitive flexibility and central coherence, encourages patients to reflect on their styles of thinking to enhance the neurocognitive skills relevant to overall recovery goals (Dahlgren and Rø, 2014). Researchers systematically reviewed 21 studies exploring CRT in adults and adolescents: 3 single case studies, each including a single, adult female inpatient aged 21, 31 and 41; 14 case series with great variety among them, including ages from 13 to adult, resulting in difficulty in comparisons and generalizations of results; and 4 randomized controlled trials including adults. Some specific results from single case studies demonstrated the CRT resulted in cognitive set-shifting while the case series showed improvement in cognitive performance. Results from the randomized controlled trials found CRT effective in improving neurocognitive function and enhancing the effectiveness of concurrent treatment. Based on their review, researchers concluded that evidence suggests the intervention is effective in “reducing attrition, enhancing the efficacy of concurrent treatment, improving cognitive set-shifting and quality of life, and reducing eating disorder psychopathology” (Dahlgren and Rø, 2014, page 9). They suggested future studies focusing on the long-term effects of CRT, influence of comorbidity, effectiveness of CRT for adolescents, transdiagnostic versions of CRT in larger samples, and family CRT as treatment for young girls with AN (Dahlgren and Rø, 2014).

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The APA guideline suggests that hospital-based programs for nutritional rehabilitation should be considered for children and adolescents who are markedly underweight and whose weight has deviated below their growth curve. It emphasizes that refeeding programs be implemented in nurturing emotional contexts. The guideline cautions that when severely malnourished patients undergo aggressive oral, nasogastric or parenteral refeeding, complications of nutritional rehabilitation, particularly the refeeding syndrome, can occur. This condition includes the occurrence of electrolyte abnormalities, e.g., hypophosphatemia, hypokalemia and hypomagnesemia (Kohn et al. 2011). More severe forms of refeeding syndrome can result in fluid retention and cardiovascular, pulmonary, neurologic and hematologic manifestations (Magellan Health: Technology Assessment Report 2012). Professional associations, i.e., American Dietetic Association (ADA), American Psychiatric Association, American Academy of Pediatrics (AAP), Society for Adolescent Medicine, United Kingdom National Institute for Clinical Excellence (NICE), and the Royal Australian and New Zealand College of Psychiatrists (RANZCP), have published clinical refeeding recommendations. These include conservative initial rates of refeeding with close monitoring of weight, vital signs, fluid shifts and serum electrolytes to avoid refeeding syndrome. Gradual increases in caloric prescription and oral multivitamin/mineral supplements are also recommendations. Short-term use of nasogastric feeding is recommended in severe malnutrition cases.

The APA recommends a conservative feeding approach with caloric intake levels starting at 30-40 kcal/kg per day (approximately 1000 to 1600 kcal/day), increasing gradually during the weight gain phase. Other professional associations named above also recommend conservative refeeding approaches at the inpatient level of care where the patient’s weight is more than 30 percent below the ideal body weight. The “start low, advance slow” dictum includes the following principles: 1) total energy expenditure (TEE) should never exceed twice the basal energy expenditure (BEE), 2) caloric intake should rarely exceed 70-80 kcal per kilogram of body weight, 3) a diet of 20-25 kcal per kilogram should be initiated for severely anorexic patients, 4) protein intake should not exceed 1.5-1.7 grams per kilogram of body weight, 5) carbohydrate intake should not exceed 7 mg/kg/minute when parental nutrition (TPN) or enteral feedings are used and 6) weight gain should be in the range of 2-3 pounds per week (Mehler et al. 2010).

Some researchers are now challenging the “start low, advance slow” approach, and aggressive refeeding clinical protocols are being developed and investigated. One study reported initial refeeding in 300 adolescents with anorexia nervosa using continuous nasogastric tube feedings with caloric intake levels starting at a minimum of 2000 kcal/day, graduating to intermittent daily oral feeds with phosphate supplementation (Kohn et al. 2011). No difficulties in reestablishing an oral diet were reported and weight gain in the first week was >2.1 kg.

In another study, 30 out of 33 hospitalized patients with severe anorexia nervosa and an initial body mass index (BMI) ≤ 12 kg/m² received nutritional support with temporary nasogastric feeding while the other three patients received oral supplementation (Gentile
et al. 2010). During refeeding, vitamins, potassium and phosphate supplements were administered. The amount of calories from enteral feeding plus glucose infusion was 28.5 ± 9.5 kcal/BW/day at 0 day, 38 ± 14 kcal/BW/day at 30 days, and 32 ± 11 kcal/BW/day after 60 days of refeeding treatment. Estimated amount of calories from oral diet was 14 ± 11 kcal/BW/day at 0 day, 32 ± 12 kcal/BW/day at 30 days, and 40 ± 8 kcal/BW/day at 60 days. None of the patients developed refeeding syndrome and the mean BMI and mean body weight increased from 11.3 ± 0.7 kg/m² to 13.5 ± 1 kg/m² and from 29.1 ± 3.2 kg to 34.5 ± 3.3 kg respectively after 60 days of intensive inpatient treatments.

A one-year retrospective chart review of 46 hospitalized patients (29 adolescents) with anorexia nervosa was undertaken to determine the incidence of hypophosphatemia (HP) in 12 to 18 year-old inpatients receiving aggressive refeeding treatment (Whitelaw et al. 2010). Results showed that 61 percent of admissions commenced on 1,900 kcal (8,000 kJ) and 28 percent on 2,200 kcal (9,300 kJ). Three patients commenced on rehydration therapy and one on 1,400 kcal (6,000kJ) as they were deemed at high risk for refeeding syndrome. None of the patients developed moderate or severe HP, although 37 percent developed mild HP.

An observational study by Garber et al. (2010) evaluated the daily weight trajectory of 35 hospitalized adolescents with anorexia nervosa, based on a recommended (conservative) refeeding protocol. A wide range of diets was prescribed at baseline from 800-2,200 calories, where 94 percent of patients were started on ≤ 1,400 calories. Mean prescribed calories were 1,205 on day one, and increased to 2,688 calories. Mean weight gain during the 17-day hospital stay was 2.42 kg or .15 kg/d and more than 80 percent of patients initially lost weight. Mean BMI did not increase significantly until day eight of hospitalization. Twenty percent of patients received phosphorus supplementation but there were no other clinical or electrolyte abnormalities noted. Investigators reported that higher calories prescribed at baseline were significantly associated with faster weight gain and shorter hospital stay. Based on this observational study of a very small number of adolescents with anorexia nervosa, investigators concluded that hospitalized adolescents demonstrated weight loss and slow weight gain on recommended (conservative) refeeding protocols in contrast to those prescribed higher caloric diets upon admission. Magellan has determined that large randomized controlled, multi-site trials are necessary to address questions of safety and efficacy for refeeding protocols that are more aggressive than currently recommended by professional association consensus guidelines. Magellan considers increased caloric inpatient refeeding protocols to be investigational for the treatment of anorexia nervosa.

The issue of relapse in anorexia nervosa is discussed only briefly in the APA guideline. An observation put forth in the guideline is that many clinicians who report seeing patients with chronic anorexia do see these patients experience substantial remission after many years of struggling with their disorder. In light of this, relapse in anorexia was an area of clinical study focusing on body composition as a predictor of relapse. A follow-up analysis of 32 weight-recovered subjects with anorexia nervosa from the New York site of the Fluoxetine to Prevent Relapse in Women With Anorexia Nervosa clinical trial and the
Energy Homeostasis in Anorexia Nervosa longitudinal study, examined the effect of percent body fat, body mass index (BMI), anorexia nervosa subtype, waist-to-hip ratio, and serum cortisol and leptin levels on treatment outcome. Findings revealed that percent body fat at the time of hospital discharge was the only clinical variable significantly associated with treatment outcome—i.e., lower percent body fat was associated with poorer long-term outcome. Investigators indicated that, while additional data linking percent body fat as a risk factor for relapse is necessary, their findings suggested that increased body fat may be protective against relapse (Mayer et al. 2007).

A recent study examined relapse and remission rates in a convenience sample of a subgroup from an original cohort of adolescents ages 12 to 18 with AN (n=121) who completed a randomized clinical trial comparing family-based therapy (FBT) with adolescent-focused individual therapy (AFT) (Le Grange et al., 2014). Remission was defined as “≥ 95% EBW for age, height, and gender, and a global Eating Disorder Examination (EDE) score within 1 SD of the community mean of 1.54 for adolescents” (Le Grange et al., p 1163). In this exploratory study, follow-up data at 2, 3, and 4 years post-treatment was assessed for participants (n=79) in the convenience sample. One-year follow-up data were available for 93 of the original cohort. Out of the 33 participants who had achieved full remission at 1-year post-treatment, 26 participants were assessed on average 2.68 years later and only 2 participants relapsed showing no significant main effect of treatment type. LeGrange et al. related this result to their hypothesis about the stability of remission (i.e., once achieved, it was stable regardless of treatment type). Out of the 66 participants who had not achieved full remission at 1-year post-treatment, 44 participants were assessed on average 2.49 years after 1-year follow-up and 10 participants achieved remission for the first time. Again, these results showed no significant main effects for treatment type. Researchers note that new remissions were few during the follow-up period, suggesting the need for future research investigating ways to enhance outcomes. They also stressed the importance of early and effective interventions for adolescents with AN (Le Grange et al., 2014).

**Bulimia Nervosa**

A large systematic review of 47 studies on the efficacy of treatments for bulimia nervosa (BN) was conducted to include studies of medication only, behavioral interventions only, and medication plus behavioral interventions for adults and adolescents. Findings of the review revealed that evidence for medication is strong in the use of fluoxetine (60 mg/day) for reducing core bulimic symptoms. While researchers noted that further studies are needed, preliminary evidence of efficacy exists for other second-generation antidepressants (trazodone and fluvoxamine), an anticonvulsant (topiramate), a tricyclic antidepressant (desipramine) and for a monoamine oxidase inhibitor (MAOI), brofaromine (prescribed with close dietary monitoring) in reducing vomiting in the treatment of bulimia. Similarly, the evidence was strong for the effectiveness of cognitive behavioral therapy (CBT) and interpersonal therapy (IPT) while the data showed promising results for dialectic behavioral therapy (DBT) and guided imagery. However, the supportive evidence for effectiveness of self-help groups was weak. In addition, the authors confirmed that the
evidence for combined treatments is weak and that outcome differentiation by socio-demographic factors is nonexistent (Shapiro et al. 2007).

The current APA guideline recommends the use of SSRIs for treatment of bulimia and indicates they may be helpful for depression, anxiety, obsessions, certain impulse disorder symptoms, and for those patients with a suboptimal response to appropriate psychosocial therapy. The APA Guideline Watch cites findings from a later systematic review including 36 randomized, controlled trials of medications for the treatment of bulimia nervosa. Aigner et al. recommended antidepressants, SSRIs in particular, as an effective part of the initial treatment program for most patients (Aigner et al. 2011). The guideline also specifically cautions prescribers that tricyclic antidepressants (TCAs) should generally be avoided, and their potential lethality and toxicity in overdose should be taken into consideration. Similarly, the guideline cautions that MAOIs should be avoided with chaotic binge eating and purging, and that bupropion should be avoided in patients with bulimia because of seizure risk.

The APA guideline does not address the use of neurostimulation in the treatment of eating disorders. Repetitive Transcranial Magnetic Stimulation (rTMS) has been studied primarily in the treatment of refractory depression. Researchers have just begun to research rTMS in the treatment of bulimia since it is believed to be often associated with depressive symptoms. It is postulated that there is a shared deficient serotonergic transmission in both syndromes and involvement of the left dorsolateral prefrontal cortex in the regulation of eating behavior (Walpoth et al. 2008). A small, randomized sample of 14 women with bulimia was submitted to sham treatment, followed by either three weeks of active or sham rTMS. Stimulation was delivered for three weeks with an intensity of 120 percent motor threshold using 20 Hz in one session per day. Ten trains of 10 seconds each, with a train interval of 60 seconds between trains, were performed per session. Patients got an amount of 2,000 stimuli per session up to a total of 30,000 stimuli in the actively treated group. Results of this study showed that the average number of binges per day declined significantly between baseline and the end of treatment in both groups. There was also no significant difference between sham and active stimulation, in terms of improvements in purging behavior, and depressive or obsessive-compulsive symptoms – indicative of a placebo effect (Walpoth et al. 2008).

A later randomized, double-blind controlled trial investigated whether rTMS of the left dorsolateral prefrontal cortex reduces food craving in patients with bulimia (n=38). Patients were randomly allocated to receive a single session of real rTMS or sham treatment. Patients in the real rTMS group reported lowered cue-induced food craving than those patients in the sham treatment group after neurostimulation. Compared with sham control, real rTMS was also associated with fewer binge-eating episodes during the 24 hours following stimulation. Investigators suggested the results provide a rationale for further research of rTMS as a treatment for bulimic eating disorders (Van den Eynde et al. 2010).
CBT is recognized in the APA guideline as the most efficacious short-term intervention in the treatment of bulimia when specifically directed at eating disorder symptoms and underlying maladaptive cognitions. The adopted guideline also suggests that psychodynamic and psychoanalytic approaches in individual or group format are useful once binging and purging symptoms have improved. The guideline indicates that family therapy should be considered whenever possible, especially for adolescents still living with parents or for older patients with ongoing conflicted interactions with parents. Additionally, the guideline indicates that support groups and 12-step groups may be helpful adjuncts to the initial treatment of bulimia and for subsequent relapse prevention, but are not recommended as the sole initial treatment approach.

In a recent, randomized controlled trial, researchers compared psychoanalytic psychotherapy and CBT in the treatment of BN (Poulsen et al., 2014). Patients with BN (n=70) received either weekly psychoanalytic psychotherapy over 2 years or 20 sessions of CBT over 5 months. This study aimed to test the efficacy of a longer-term psychoanalytic psychotherapeutic treatment by comparing it with an “enhanced” variant of CBT. An outcome measure, the Eating Disorder Examination interview, was administered at baseline, after 5 months, and after 2 years. Psychoanalytic psychotherapy focused on the therapeutic relationship, involving weekly 50-minute sessions over 2 years that invited the patient to talk freely. “Enhanced” CBT focused on modifying the patient’s eating disorder psychopathology, including twice-weekly sessions for the first 4 weeks, weekly for the next 10 weeks, and every 2 weeks for the remaining weeks. Although both treatments resulted in improvement, the improvement was greater in those receiving CBT. At end of respective periods of treatment, 42% of patients receiving CBT had stopped binge eating and purging compared with 15% of those receiving psychoanalytic psychotherapy. Additionally, the effect of CBT was faster than that of psychoanalytic psychotherapy. At the end of the 5-month assessment point, only 6% of those receiving psychoanalytic psychotherapy had stopped binge eating and purging compared with 42% of those receiving CBT. Researchers noted the most likely reason for the different effects of the two treatments may relate to the differences in approach to bulimic core symptoms, referring to CBT’s symptom-focused treatment compared to psychoanalytic psychotherapy designed as a nondirective therapy - not specifically directed at the control of binge eating. They indicated a need for development and testing of a more structured, symptom-focused version of psychoanalytic psychotherapy for BN (Poulsen et al., 2014).

Another study provided evidence that CBT may work faster than other interventions in reducing eating disorder symptoms in patients with BN (Jones and Clausen, 2013). Researchers discussed the challenges of changing unhealthy eating behaviors in patients with BN who are often hesitant to enter treatment and who perceive their maladaptive eating behavior as necessary. They suggest that patients’ longer amounts of time exposed to their symptoms and time spent in therapy may lead to increased ambivalence and hopelessness. This study's aim was the evaluation of a brief group CBT program in the treatment of new female patients aged 16 to 38 (n=205) diagnosed with BN. This 8-week program included groups of eight patients in one session per week. The program focused on changing pathological eating behavior while exploring its causes. Weight was evaluated
before each session and patients used an eating diary. The outcome measure, the Eating Disorder Examination, was used at initial assessment and at post treatment. Results showed significant reductions in the frequency of the following: binging, self-induced vomiting, use of laxatives, physical exercise, intended restrictive eating. Researchers noted the finding that CBT seemed to reduce concerns with body shape and weight at a lesser extent than eating concerns and suggested that remission of shape and weight concerns are more challenging for the patient. Researchers encouraged future research to examine the optimal duration of psychotherapy in treating individuals with BN (Jones and Clausen, 2013).

Two studies on the effectiveness of family therapy in treating adolescents with bulimia were conducted with mixed results. One clinical trial with 85 study participants conducted in the United Kingdom compared the efficacy and cost-effectiveness of family therapy versus CBT guided self-care. While the study results showed that at six months, binging had undergone a significantly greater reduction in the CBT guided self-care group than in the family therapy group – this difference disappeared at 12 months. There were no other differences between groups in behavioral or attitudinal eating disorder symptoms, but the direct cost of treatment was lower for CBT guided self-care than for family therapy (Schmidt et al. 2007).

Another study of 80 adolescents with bulimia evaluated the relative efficacy of family-based treatment (FBT) and supportive psychotherapy (SPT). In this trial, family therapy showed superior efficacy in that significantly more of these patients were binge-and-purge abstinent at the end of the study and at six months, and showed treatment effects in favor of FBT on all measures of eating pathological features (Le Grange et al. 2007). Researchers in this trial conducted a follow-up analysis of these results, which showed that lower eating concerns, as measured by the Eating Disorder Examination (EDE), are the best predictor of remission for adolescents with bulimia. Additionally, FBT may be most effective in those cases with low levels of eating disorder psychopathology (Le Grange et al. 2008).

Two transdiagnostic CBT modalities designed for patients with eating disorders, i.e., bulimia nervosa and eating disorder not otherwise specified, were studied in order to compare a treatment (CBT–Ef) focusing solely on eating disorder psychopathology against a more complex treatment (CBT-Eb) that also addressed additional problems – mood, clinical perfectionism, low self-esteem and interpersonal difficulties (Fairburn et al. 2009). Patients in the two treatment conditions exhibited substantial and equivalent change, which was maintained during follow-up. Investigators reported that at the 60-week follow-up assessment, 51.3 percent of the sample had a level of eating disorder features less than one standard deviation above the community mean. In addition, the treatment outcome was not dependent upon the specific eating disorder diagnosis and both types appeared to be suitable for the majority of outpatients with eating disorders. Further exploratory analysis conducted by the research team indicated that patients with substantial additional psychopathology, of the type targeted in CBT-Eb, did better with this treatment than the focused form, while the opposite was true for the remaining patients (Fairburn et al. 2009).
CBT focuses on targeting the overt symptoms of bulimia nervosa, e.g., binging and compensatory behaviors. A new group-based treatment for bulimia nervosa, Emotional and Social Mind Training Program (ESM), improves treatment by focusing on broader emotional and social/interpersonal issues underlying bulimia nervosa (Lavender et al. 2012). ESM, a non-symptom based treatment, is based on evidence from several small studies suggesting that emotional and social deficits, e.g., negative self-evaluation, difficulties in understanding the minds of others, poor interpersonal skills, a tendency to focus on negative or threatening socio-emotional information and shame, are factors triggering the onset of bulimia nervosa or as maintaining factors for the disorder. Lavender et al. conducted a randomized controlled trial to evaluate the efficacy of ESM compared to Group CBT. Adults (n=74) with bulimia nervosa were randomized to either CBT or ESM treatment programs, each of which included 13 group and four individual sessions. ESM was divided into three stages: 1) learning about inter- and intra-personal emotions including the social context of emotion, understanding self-esteem difficulties; 2) developing other ways of coping - self-compassion to manage shame, learning alternative coping strategies; and 3) relapse prevention and maintenance. It is noteworthy that in this study, ESM performed as well as CBT in terms of treatment outcomes and patients improved as significantly in ESM as in CBT. ESM and CBT were equally effective at the end of treatment as well as follow-up. The APA guideline recommends CBT as the most effective treatment for patients with bulimia. Researchers suggest that ESM may be a viable alternative to CBT for the treatment of some individuals with bulimia nervosa and conclude that further research is required to identify and preferentially allocate suitable individuals accordingly.

Another study investigated whether an appetite-focused dialectical behavior therapy (DBT-AF) is an effective alternative treatment for bulimia nervosa (Hill et al. 2011). DBT-AF combines appetite awareness training, i.e., redirecting patient's focus from monitoring the mount/type of foods consumed to internal appetite signals, with dialectical behavior therapy, i.e., acceptance-based strategies and emotion regulation skills. Participants with binge/purge episodes at least once per week (n=32) were randomly assigned to 12 weekly sessions of DBT-AF or to a six-week delayed treatment control. Therapy sessions focused on mindfulness practice, diary card/homework review and chain analyses and teaching, and practicing new skills. Results of this study showed that DBT-AF was acceptable to participants who preferred appetite monitoring to food monitoring, and DBT-AF participants showed greater improvement in focal and secondary symptoms of bulimia nervosa at six weeks than control group participants. Researchers suggested that DBT-AF may be useful for individuals who are not willing to comply with food monitoring or those needing to focus more on emotion regulation skills. Researchers suggested future studies directly comparing DBT-AF with CBT to determine if some individuals would benefit more from this alternative treatment.

Innovative modalities in the area of school-based, peer-led programs to prevent obesity and eating disorders have begun to emerge and gain credence. Two studies in this area were published with positive findings. One study evaluated peer teaching on healthy living, i.e., nutrition, physical activity and healthy body image, from older to younger children
Findings showed that all students improved their knowledge and that weight velocity was decreased in older students (Stock et al. 2007). Another study demonstrated the effectiveness of an interdisciplinary, school-based obesity prevention intervention where disordered weight control behaviors were reduced by two-thirds for the girls in early adolescence who participated (Austin et al. 2007). Similarly, an eating disorders prevention program using dissonance-inducing activities that reduce thin-ideal internalization showed superiority over another prevention program that promoted healthy weight management. Reductions in eating disorder risk factors, bulimic symptoms and obesity onset were seen through the 12-month and three-year follow-ups, suggesting public health potential (Stice et al. 2006, Stice et al. 2008).

Binge Eating Disorder

A published clinical review on binge eating disorder (BED) treatments reported that new epidemiological studies have shown BED to be the most common of the eating disorders, with lifetime prevalence estimates in the community of 3.5 percent among women and 2 percent among men (Yager 2008). The author noted that obesity occurs in approximately 65 percent of patients with BED where it increases progressively over time. BED was consigned to the “eating disorders not otherwise specified” (EDNOS) diagnosis in the Diagnostic and Statistical Manual (DSM)-IV, but achieved full status as a real, recognized mental disorder with an official diagnosis in the DSM-5 (American Psychiatric Association, 2013). According to the new criteria, binge eating disorder includes overeating at least once a week for three months, along with lack of control over eating and marked feelings of distress. It is also characterized by eating more than what most people would eat in a similar time-period under similar circumstances. Criteria differentiating binge eating disorder from normal periodic overeating include the following: episodes of eating much more rapidly than normal, recurring episodes of eating until feeling uncomfortably full, eating large amounts of food when not feeling physically hungry, eating alone because of feeling embarrassed by how much one is eating and/or feeling disgusted with oneself, depressed or very guilty afterward (Moran 2012). Binge eating does not occur exclusively with BN or AN, and is not associated with the recurrent use of inappropriate compensatory behavior (American Psychiatric Association, 2013). The APA notes that recurrent binge eating is much less common, much more severe and associated with more significant problems, physical and psychological, than the common phenomenon of overeating (American Psychiatric Association 2013). It often occurs in secrecy, as individuals with this disorder are typically ashamed of their eating problems. Negative self-evaluation and dysphoria are often a consequence (delayed) of the disorder.

Since binge eating is prevalent in overweight and obese individuals with type 2 diabetes mellitus, the impact of behavioral weight loss treatments on eating disorders symptomatology has been analyzed by investigators in the Look AHEAD (Action for Health in Diabetes) clinical trial (Gorin et al. 2010). Overweight and obese individuals aged 45 to 76 years (n=5,145), with and without BED symptoms, were treated with either intensive lifestyle intervention or to enhanced usual care (a diabetes support/education control condition). Investigators reported that participants who stopped binge eating (BE)
appeared to be just as successful at weight loss as non-binge eaters after one year of
treatment. Gorin et al. also noted that individuals reporting more BE also reported a more
depressed mood and worse physical health than their non-BE peers. Nevertheless,
investigators stressed that most individuals who reported BE at baseline stopped BE by
one year, and these individuals were just as successful at weight loss as those who reported
no BE. Additionally, they indicated that few individuals started BE during the one-year
study period. The study team concluded that BE is not exacerbated by behavioral weight
loss treatment and may be improved by participating in a structured weight loss program
targeting lifestyle changes (Gorin et al. 2010).

The APA guideline specifies that both group and individual formats of CBT, behavior
therapy, dialectical behavior therapy and interpersonal therapy all have been associated
with binge frequency reduction and abstinence rates along with evidence of maintenance
of this change over a year follow-up. Since publication of the guideline, a more recent study
(n=101) of Dialectical Behavior Therapy for Binge Eating Disorder (DBT-BED) by Safer et
al. was compared to an active comparison group therapy (ACGT) in order to evaluate it
against a credible control group (“active placebo”) (Safer et al. 2010). Both interventions
used specific manual-based treatment protocols and used the same therapists in both
conditions in order to minimize variability. The DBT-BED approach, which was based on
Linehan’s DBT for borderline personality disorder and modified by Telch et al. for binge
eating, consisted of three modules: mindfulness, emotional regulation and distress
tolerance, concluding with relapse prevention. The ACGT approach, which was modeled
after Markowitz and Sacks’ supportive therapy for chronic depression, was modified to
address binge eating for the current study while focusing primarily on bolstering self-
esteeem (Safer et al. 2010). Study results showed that both DBT-BED and ACGT reduced
binge eating, but DBT-BED showed significantly fewer dropouts and greater initial efficacy
at post-treatment, e.g., 64 percent abstinence rate for DBT-BED vs. 36 percent for ACGT.
Investigators reported that these differences, however, did not persist over the three-, six-
and 12-month follow-up assessments, e.g., 12-month follow-up abstinence rate equal to 64
percent for DBT versus 56 percent for ACGT (Safer et al. 2010).

Using the sample from the 2010 Safer et al. study, a later study by Safer et al. (2011)
investigated the role of rapid response as a predictor of outcome in the treatment of BED.
Investigators analyzed and compared rapid response and non-rapid response participants
across treatment conditions (DBT-BED and ACGT) as well as within the two treatment
conditions to investigate differences between rapid response and non-rapid response on
continuous treatment outcomes. They found that rapid response predicts improvement in
abstinence from binge eating at a 12-month follow-up and shows that rapid response is a
significant predictor of outcome in group therapy. Investigators concluded that rapid
response to treatment is a significant predictor of outcome in DBT-BED, a less established
therapeutic treatment for BED.

A recent exploratory study conducted secondary analyses of a published trial of guided
self-help dialectical behavior therapy (DBT) for BED (Masson et al., 2013). It explored
whether the change in self-reported emotion regulation during treatment was associated
with abstinence from binge eating at post-treatment and four-, five-, and six-month follow-up in community-based men and women (n=60) with BED (Wallace et al., 2014). In the trial of guided self-help DBT, participants, with mean age of 42.8 years, were randomized to self-help DBT or wait-list, with participants receiving DBT treatment over a period of 13 weeks. Participants randomly assigned to immediate treatment reported significantly fewer past-month binge eating episodes and significantly greater rates of abstinence from binge eating than those assigned to delayed treatment (after a 3-month waiting period). These participants also demonstrated improved emotion regulation scores at post-treatment, but the researchers in the study did not examine an association between emotion regulation and binge eating. Analyzing the full sample from the trial, Wallace et al. utilized the data from the treatment trial, finding the amount of change in emotion regulation was associated with binge abstinence at post-treatment, four-, five-, and six-month follow-up. The change in emotion regulation from pre-treatment to post-treatment was about three times greater among participants who were binge abstinent compared to those who were not binge abstinent. Researchers suggested further research considering strategies to enhance emotion regulation across a range of individuals with BED and potentially improving treatment outcomes (Wallace et al., 2014).

The adopted guideline acknowledges that CBT with the addition of exercise appears to augment both binge and weight reduction and that some guided self-help CBT programs show promise for binge remission. A more recent clinical study of obese patients with BED (n=205) compared interpersonal therapy (IPT) with behavioral weight loss treatment (BWL) and guided self-help based on cognitive behavior therapy (CBTgsh) where 20 sessions of each modality was conducted over six months. Results showed that there was no difference among the three interventions at post-treatment on binge eating, specific eating disorder psychopathology, i.e., body weight, shape and eating concern, or general psychopathology. At the two-year follow-up, both IPT and CBTgsh were significantly more effective than BWL in eliminating binge eating. Investigators suggested that guided self-help CBT should be considered a first-line treatment for most patients with BED and that IPT be use as the treatment of choice for the subset of individuals with BED with low self-esteem and high level of specific eating disorder psychopathology (Wilson et al. 2010).

Another clinical trial demonstrated that self-help approaches were a viable alternative to therapist-delivered treatment. Findings from a study of 259 adults with BED where therapist-led, therapist-assisted or self-help group treatments were compared to a wait-list condition showed that patients in the therapist-led group had the highest rate of abstinence and fewest dropouts at the end of treatment. However, there were no significant differences between treatment groups at follow-up on any of the primary or secondary outcome measures. Investigators concluded that while the presence of a therapist may enhance short-term abstinence and reduce the likelihood of dropout, they suggested groups for individuals with BED with reduced or no therapist involvement may be used as alternative treatments (Peterson et al. 2009).

The APA Guideline Watch cites studies supporting the APA guideline’s recommendation for individual and group CBT and self-help programs for binge-eating disorders. In a later
study, DeBar et al. (2011) replicated and extended results of one of the studies (Striegel-Moore et al. 2010) that examined the effectiveness and cost-effectiveness of a brief guided self-help treatment for binge eating disorders in a HMO setting. Participants, female health plan members (n=160) who expressed a desire to receive treatment for binge eating concerns, were randomly assigned into usual care or CBT-GSH. CBT-GSH was based on a six-step self-help program using self-monitoring, self-control strategies and problem solving to develop a pattern of moderate eating. Results of the study showed that participants in the CBT-GSH group showed greater remission from binge eating than usual care and had greater improvements in dietary restraint, eating, shape and weight concerns.

Maseb et al. (2011) performed a randomized, controlled trial to investigate the effects of a low-energy-density dietary approach, i.e., the consumption of more water- and fiber-rich foods such as fruits and vegetables with decreased consumption of fat, in obese individuals with BED who also received CBT to address binge eating and BED related outcomes. Participants (n=50) were randomized to one of two groups: six-month individual treatment of CBT plus a low-energy-density diet or CBT plus general nutrition counseling not related to weight loss. In this study, both treatments resulted in similar and significant outcomes: reductions in waist circumference and blood pressure; and improvements in total cholesterol. More than 30 percent of the sample achieved statistically and clinically significant weight losses and rates for remission from binge eating ranged from 52 percent to 72 percent for CBT plus low-energy-density diet and from 44 percent to 75 percent for CBT plus general nutrition counseling. Researchers concluded that dietary counseling can successfully be combined with CBT for obese patients with BED and that low-energy-density dietary counseling has promise for enhancing CBT for obese individuals with BED.

The APA guideline discusses the serotonin and norepinephrine reuptake inhibitor (SNRI) and appetite-suppressant drug, sibutramine, as a promising treatment based on findings of preliminary trials. Since release of the guideline, a large clinical trial of 304 patients with BED was conducted comparing sibutramine against placebo. The participants who received sibutramine had significantly greater reductions in weekly binge frequency, binge days, BMI and associated psychopathology (Wilfley et al. 2008). On October 8, 2010, the U.S. Food and Drug Administration (FDA) asked the drug manufacturer to withdraw voluntarily sibutramine from the U.S. market because of clinical trial data indicating an increased risk of cardiovascular adverse events, including heart attack and stroke, in the studied population. The manufacturer complied with the request and sibutramine no longer is available in the United States (FDA MedWatch, 2010).

Duloxetine is another SNRI evaluated for the treatment of binge eating disorder with comorbid current depressive disorders. It has not been associated with the adverse cardiovascular events triggering sibutramine’s withdrawal from the market. In a randomized, parallel-group, placebo controlled study by Guerdjikova et al. (2012), 40 patients with BED and a comorbid depressive disorder received duloxetine or placebo to assess the efficacy and safety of duloxetine during a 12-week course of treatment. Duloxetine was superior to placebo in reducing the frequency of binge eating episodes, weight and overall severity of illness related to BED and depressive disorder. In the
duloxetine group, the mean weight loss was 3.4 kg, compared with 0.3 kg in the placebo group. Researchers suggested that larger controlled trials of duloxetine and other SNRIs, in participants with BED and depressive disorders, are warranted.

The APA guideline also presented early positive findings of studies evaluating the efficacy of the anticonvulsant drug topiramate. More recently, findings of a large multi-center clinical trial with 407 patients with BED have been published. Patients receiving topiramate experienced highly significant rates of reduction in binge eating days and binge eating episode frequency, weight, BMI, overall severity and compulsive features of BED, compared with placebo. In addition, topiramate was associated with greater improvement in measures of hunger, impulsive features and disability (McElroy, Hudson et al. 2007). The novel antiepileptic drug agent zonisamide was also studied in a small single-center trial where it was associated with a significantly greater rate of reduction in binge eating episode frequency, body weight and severity of illness than placebo. However, researchers reported that zonisamide was associated with only fair tolerability and a relatively high treatment discontinuation rate (McElroy, Kotwal et al. 2006).

Treatment of BED with antidepressant medications, particularly the SSRIs, was recommended as a treatment option in the APA guideline with the cautionary note that while patients experience a short-term reduction in binge eating, there is usually no accompanying substantial weight loss. The guideline also indicates that use of SSRIs for this disorder is typically at the high end of the recommended dosage range. More recent clinical trials and meta-analyses have produced mixed results in their usage for this indication. A study comparing sertraline and fluoxetine in the treatment of obese patients with BED showed no differences between the two treatments and both demonstrated significant weight loss and improvement in binge eating core symptoms and psychopathology (Leombruni et al. 2008). Similarly, a trial of high-dose escitalopram was shown to be efficacious in reducing weight and global severity illness in obese patients with BED, but not in reducing obsessive-compulsive symptoms of BED (Guerdjikova et al. 2007). Conversely, a meta-analysis of seven antidepressant studies, i.e., fluoxetine, sertraline, citalopram, fluvoxamine and imipramine, concluded that their findings were not supportive in recommending the use of antidepressants as the only and first-choice therapy for remission of binge eating episodes and weight reduction of patients being treated for BED (Stefano et al. 2007). In another systematic review of studies, findings for SSRI antidepressant efficacy, i.e., sertraline, citalopram, were based primarily on a series of short-term, placebo-controlled medication trials. These agents demonstrated greater rates of reduction in target eating, and psychiatric and weight symptoms in individuals with BED than placebo. Researchers noted that these conclusions should be viewed tentatively due to high dropout rates and placebo response rates (Brownley et al. 2007).

Researchers have indicated that novel drug treatments that reduce binge eating, the associated psychopathology and body weight, and are well tolerated, are needed for the treatment of BED. In addition, several drugs used to treat BED, i.e., orlistat, sibutramine, topiramate and zonisamide, have problematic side effects and relatively high discontinuation rates (McElroy, Guerdjikova et al. 2007). The highly specific

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norepinephrine reuptake inhibitor, atomoxetine, used in the treatment of attention-deficit hyperactivity disorder (ADHD), is associated with anorexia and weight loss. Since this drug is generally well tolerated and may have antidepressant properties, it was chosen for study in a placebo-controlled clinical trial in order to determine its possible efficacy in the treatment of BED. Study results found atomoxetine to be superior to placebo in reducing binge frequency, weight and severity of illness. Researchers suggest further studies of atomoxetine are clearly warranted (McElroy, Guerdjikova et al. 2007).

A recent randomized placebo-controlled clinical trial examined the efficacy and safety of lisdexamfetamine dimesylate, approved in the U.S. to treat ADHD, to treat moderate to severe BED (McElroy SL, et al., 2014). Adults aged 15 -55 (n=260) with a diagnosis of BED were randomized to one of four groups: one group received 30 mg of lisdexamfetamine daily; the second group started with 30 mg/d, increasing to 50 mg within three weeks; the third group received 30 mg/day and increased to 70 mg/d within three weeks; and the fourth group received an inactive placebo pill. Outcomes studied in this trial included the change in binge eating behaviors (days per week) and binge eating cessation for 4 weeks. Results showed that at week 11, the lowest dosage, binge eating was not curtailed. Lisdexamfetamine dimesylate treatment with 50 and 70 mg/d resulted in a significant decrease in weekly binge eating days per week compared with placebo. The number of binge eating episodes also decreased in the 50 and 70 mg/d groups. With all doses, a greater proportion of participants achieved 4-week cessation of binge eating episodes and global improvement of symptom severity than with placebo. Researchers suggested that these findings provide preliminary evidence of lisdexamfetamine’s effectiveness in treating moderate to severe BED. The types and frequency of adverse effect in the lisdexamfetamine treatment group were consistent with those seen in studies of lisdexamfetamine in adults with ADHD. Consistent with other studies of psychostimulants, small mean increases in heart rate were noted with lisdexamfetamine treatment. Researchers cautioned that lisdexamfetamine is a schedule II controlled substance with a black box warning noting its potential for abuse and dependence. They suggested further studies assessing lisdexamfetamine as a treatment option for BED (McElroy et al., 2014).

The APA guideline indicates that although evidence is limited, combined pharmacotherapy and psychotherapy treatment for BED is frequently helpful in clinical practice. The systematic review of studies previously cited by Brownley et al. (2007) revealed that use of cognitive behavioral therapy (CBT) combined with medications, i.e. fluoxetine, orlistat, or medication (desipramine) along with weight loss therapy, was superior to medication or weight loss therapy alone or when combined with placebo in the treatment of patients with BED (Brownley et al. 2007). Similarly, a marked reduction in binge eating, short-term weight loss and a significant decrease in psychopathology were shown in a clinical trial of topiramate (target dose 200 mg) plus CBT in obese patients with BED (Claudino et al. 2007). Another study demonstrated that the combination of cognitive-behavioral weight loss therapy (BWL) and sibutramine, leads to comparable weight loss in individuals suffering from obesity and subclinical binge eating disorder (sBED) as in obese non-bingers. However, BWL alone was an effective treatment in significantly reducing binge-eating frequency in sBED without the augmenting effect of sibutramine (Bauer et al. 2006).
Modalities employing new technologies and psychosocial approaches continue to be developed and studied in the area of eating disorders treatment. One clinical trial of 105 male and female high school students examined the effects of an Internet-facilitated, weight management program on reducing binge eating and overeating, and preventing weight gain in a population of students at risk of being overweight. In comparing a 16-week online intervention compared to a wait-list control group, the study group found a strong effect for stabilization of weight gain and reduction in binge eating and overeating at the nine-month follow-up assessment. Researchers were encouraged with these findings using an easily disseminated, Internet-facilitated program (Jones et al. 2008). Adapted motivational interviewing (AMI) that was originally developed for addictive behaviors was studied in 108 women with BED. Both groups, where one was assigned to one session of AMI and use of a self-help handbook, or use of a self-help handbook only, showed improvement in binge eating and associated symptoms. After 16 weeks of intervention, the AMI group had a greater proportion of women who abstained from binge eating and no longer met the binge frequency criterion for BED DSM-IV diagnosis (Cassin et al. 2008).

A later study examined longer-term effectiveness of fluoxetine and CBT for BED (Grilo et al., 2012). Overweight patients with BED (n=81) randomized to fluoxetine only, CBT plus fluoxetine, or CBT plus placebo were assessed before, during, post-treatment, and 6 and 12 months after completing treatment. Follow-up remission rates were 3.7%, 26.9%, and 35.7% for fluoxetine-only, CBT plus fluoxetine, and CBT plus placebo respectively. On clinical outcomes, e.g., eating and weight concerns, depression, global score, CBT and CBT plus fluoxetine were superior to fluoxetine-only. These findings support the longer-time effectiveness of CBT only through 12-months after treatment completion. Significant changes in body mass index did not occur with either treatment, although patients treated with CBT plus placebo had significantly lower body mass index at 12-month follow-up than those treated with fluoxetine only or combined fluoxetine and CBT. Researchers concluded that based on these findings, CBT, but not fluoxetine, has long-term effectiveness in treating BED (Grilo et al., 2012).

**Pica and Rumination Disorder**

Pica and rumination disorders are distinct categories in the DSM-5 chapter on feeding and eating disorders. Inclusion in this chapter indicates that the diagnosis can be made of individuals of any age. The overall prevalence of pica and rumination disorder is difficult to access as it is generally not reported (Mishori and McHale, 2014). Both the definition of pica and the methodology of data collection may vary among populations. Mishori and McHale reported that according to some estimates, 50% or more of children between the ages of 18 and 36 months ingest non-food items such as paper, chalk, and dirt. Although this practice usually decreases with age, authors estimated that 10% of children older than 12 years engage in this activity. Pica occurring in persons with developmental disabilities such as autism is considered a psychiatric condition, whereas researchers disagree about whether some forms of pica, such as geophagia (eating soil or clay), are abnormal behaviors. The prevalence of rumination disorder, the recurrent and effortless regurgitation of food, is also unclear partly due to non-disclosure of symptoms. Delaney et
al. reported that evidence indicates that rumination disorder is more common in infants, children, and persons with developmental disabilities (Delaney et al., 2015).

In a study conducting structured interviews with adolescent and young adult females with a mean age of 18.1 years from a residential eating disorder center (n=149) and adult males and females with a mean age of 45.8 years with overweight or obesity from an outpatient weight-loss clinic (n=100), Delaney et al. found that pica and ruminating disorder were rare (Delaney et al, 2015). Researchers noted that according to DSM-5, a pica disorder diagnosis is possible in the presence of another eating disorder, as long the other eating disorder does not drive the motivation for eating the non-food item (e.g., suppression of hunger). Unlike pica, they point out that rumination disorder is not a diagnosis when another DSM-5 eating disorder is present. In this study, researchers found that frequency for both pica and rumination disorder was lower than in previous studies, possibly due to the stricter definitions of DSM-5 (e.g., addition of the “non-food” requirement). Delaney et al. highlighted the challenges of differential diagnosis with other forms of disordered eating (Delaney et al., 2015).

**Avoidant/Restrictive Food Intake Disorder**

Avoidant/restrictive food intake disorder (ARFID) is a category including both children as well as adults who have idiosyncratic preferences and requirements for food leading to psychological and/or nutritional problems. The DSM-IV listed this rarely used diagnosis as eating disorder of infancy or childhood, but it is included in the feeding and eating disorders chapter of the DSM-5. This disorder is characterized by DSM-5 as persistent failure to meet appropriate nutritional and/or energy needs associated with one or more of the following: significant weight loss (or failure to achieve expected weight gain or faltering growth in children), dependence on nutritional supplements or enteral feeding, significant nutritional deficiency, or marked interference with psychosocial functioning.

**Obtaining Copies of the APA Guidelines**

Copies of the APA Practice Guideline for the Treatment of Patients With Eating Disorders, Third Edition can be obtained through the APA at [http://psych.org/](http://psych.org/), by calling (800) 368-5777, or by U.S. mail at:

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