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Binge-eating disorder

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Abstract: Binge-eating disorder (BED) has the highest prevalence of any eating disorder in the US today. However, the condition is frequently not recognized as an eating disorder by healthcare providers or patients. Patients with this diagnosis often have significant psychiatric and medical comorbidities that might respond to evidence-based treatments. NPs in primary care with awareness of the diagnostic criteria for BED and knowledge of its assessment and treatment options can coordinate care for patients experiencing this health challenge.

Symptoms of an eating disorder such as binge-eating disorder (BED) could contribute to significant medical problems, psychiatric comorbidities, mental distress, lower health-related quality of life, and functioning difficulties.[1-3] At this time, BED has the highest lifetime prevalence (ranging from 1.9% to 2.6%) of all eating disorders in the US and worldwide, compared with anorexia nervosa (AN; 0.6%-0.8%) and bulimia nervosa (BN; 0.28%-1%).[4,5] The onset of BED can occur in late adolescence and early adulthood; a recent meta-analysis found an overall prevalence of 1.32% in children and adolescents, and when stratified by weight, the prevalence rose to 5% in children and adolescents with overweight.[3,6]

Keywords: binge eating, binge-eating disorder (BED), eating disorders, feeding and eating disorders, mental health, primary care

BED is categorized in the *Diagnostic and Statistical Manual, Fifth Edition, Text Revision* (*DSM-5-TR*) under the Feeding and Eating Disorders section, which also includes AN and BN.[4] Two main features are present in BED: 1) eating more food over a period of time than what most people would eat and 2) a sense of loss of control during this period of time. To meet diagnostic criteria, these binge episodes need to occur at least once per week for 3 months and include three or more of the following additional symptoms: 1) eating much more rapidly than normal, 2) eating until feeling uncomfortably full, 3) eating large amounts of food when not feeling physically hungry, 4) eating alone because of feeling embarrassed by how much one is eating, and 5) feeling disgusted with oneself, depressed, or very guilty after an episode.[4] Binge eating is not associated with the recurrent use of inappropriate compensatory behaviors (for example, purging, excessive exercising, and use of laxatives). Severity is indicated by the number of binge-eating episodes per week (mild: 1-3; moderate: 4-7; severe: 8-13; extreme: 14 or more).

Unfortunately, BED is underdiagnosed and therefore often left untreated.[7] Patients and healthcare providers (HCPs) might not recognize the existence of BED or understand its severity.[8] Patients with BED might present to NPs for help with weight loss; NPs might not be aware that these patients have an eating disorder.[9] It is estimated that only half of patients with BED symptoms see HCPs for help with an eating disorder, with even lower estimates of help-seeking among men and Black and Hispanic individuals.[9] Individuals with BED experience shame as a significant feature of the disorder, thereby decreasing their willingness to seek help for the problem.[1,10] Even if HCPs are aware of BED, they might not suspect it in affected patients, since individuals with the disorder often do not present with severe symptoms or sequelae as in AN (for example, severe underweight) and BN (for example, purging behaviors).[7] In one study, of 344 participants meeting *DSM-5* criteria for BED, only 3.2% (n = 11) reported receiving a formal diagnosis.[11] Family members might not be aware of the individual's binging episodes, since individuals with BED do not disclose their episodes and/or keep them secret.[10]

According to the US Preventive Services Task Force (USPSTF), insufficient evidence exists for or against universal screening for eating disorders in adolescents and adults without any signs or symptoms.[12] However, the USPSTF recommendation statement supports clinicians' need for awareness of risk factors, signs, and symptoms of eating disorders; listening to patient concerns about eating and ensuring treatment access; and the importance of referral. It is important for NPs to have knowledge and skills to identify patients with BED and assist them in getting appropriate treatment.

Neurobiology

It is suggested that various neurologic systems impact the development and maintenance of binging in BED. The endocannabinoid system has a significant role in food intake regulation by modulating the reward effects, not only in food, but also addictive drugs both centrally and peripherally.[13] Activation of the cannabinoid receptor CB1 increases motivation for food consumption through this mechanism. Other neurotransmitters including opioid and serotonergic systems are also involved in BED, and alterations of the homeostatic hormones ghrelin and leptin have been found to disturb the reward system information processing in BED.[13] The dopamine reward system seems to be altered in BED through structural and functional changes, with sensitization of this reward system leading to larger amounts of food being required to elicit the same reward. The complex neurobiology of BED continues to be studied for further understanding of mechanisms and subsequent treatment options.

Risk factors

BED occurs in all genders, ethnicities, and cultural groups, yet several risk factors are associated with BED that can assist NPs in identifying at-risk individuals who might need further screening for these symptoms.[1] Impulsivity significantly contributes to the development of overconsumption patterns in eating disorders, thereby impacting the physiologic changes in the disorder.[13] Individuals with BED might present with impulsive behaviors in multiple contexts, such as substance misuse, nonsuicidal self-injury, shoplifting, and risky sexual behaviors.[14] Up to 30% of individuals with obesity who seek behavioral treatment or bariatric surgery for weight loss meet criteria for BED.[9] However, it is important to note that more than 40% of individuals with BED are not obese.[2] Psychiatric comorbidities are a significant concern; 79% of individuals with BED meet diagnostic criteria for psychiatric disorders, including anxiety (65%), impulse control disorders (43%), depression (46%), and substance use

disorders (SUDs; 23%).[2] It is estimated that 23% of individuals with BED have attempted suicide.[9] These comorbidities are associated with BED symptom severity, not with excessive weight.[4] Difficulties with emotional regulation and overvaluation of body shape/weight have been associated with BED and can directly affect mental health quality of life.[15] Evidence suggests that BED may affect families independent of weight, pointing to a possible genetic vulnerability.[9] Individuals who have experienced poverty, violence, traumatic events, and/or combat seem to be at an increased risk for BED.[16-18] Adults with a history of or current food insecurity and limited or uncertain means of accessing nutritious food were more likely to report binge eating with high severity.[19]

Several medical issues are associated with BED. A review by Citrome identifies these comorbidities, which include pain (for example, musculoskeletal pain, headaches), sleep disturbances, gastrointestinal disorders, menstrual irregularities, shortness of breath, diabetes, and hypertension, which might occur in individuals with BED who are obese, overweight, or normal weight.[10] BED carries a risk of metabolic syndrome, and having BED can impact management of chronic conditions. Therefore, it is important for NPs to consider assessing for BED symptoms in these populations.

It is important to note that more than 40% of individuals with BED are not obese.

Assessment

Communication

NPs could include an assessment of eating disorders, including BED, in their practice.[20] This assessment could be targeted to patients who are at high risk for BED or based on patient treatments most frequently seen in the clinical practice (for example, weight management). Although the symptoms of BED develop around eating, the core issues are often patients' feelings and emotions.[21] A strong therapeutic relationship is essential, as evidence suggests that when these individuals are treated with a compassionate, focused approach, shame and stigma may be reduced.[22] Patients with BED might be reluctant to receive treatment due to shame. NPs could initiate a conversation about eating habits using techniques of motivational interviewing in order to adopt a nonjudgmental stance and estimate patients' readiness for change.[20] In one study, Lydecker and colleagues found that participants (68% of whom were women) with BED preferred certain terms that were identified as more neutral and less stigmatizing; it is thought that use of such terminology can aid in identification of this disorder and discussion of treatment options.[23] For example, the terms "weight" or "BMI" were preferred in a community sample rather than "obesity" or "excess fat." In regard to binge eating, "kept eating when not physically hungry" was a preferred phrase to describe the episodes, as opposed to "knew it was a large amount/didn't consider stopping," "out of control," and "lost willpower."

History and screening considerations

It is important to distinguish BED from overeating in general (for example, at holidays or parties); overeating does not include the loss of control and guilt/shame with binging.[1] Binge eating does not necessarily constitute eating low nutritional value foods (for example, junk food); rather, individuals with BED could be eating nutritional foods but eating it in excessive quantities with feelings of shame and lack of control in intake.[10] Therefore, it is important to assess food intake, appetite, and type of foods consumed in individuals with possible BED. NPs could develop questions, such as the following, for assessing binging patterns based on BED criteria to create the opportunity to discuss eating concerns in detail:

1) Do you often keep eating when you're not hungry?
2) Are there times during which you eat more rapidly than usual?
3) Do you tend to eat in secret?[10] If so, do you have negative feelings around eating?

As part of an assessment for depression and anxiety, NPs need to include appetite and food quantity, as both of these disorders can affect appetite and food intake and are linked to comorbid disorders such as BED. For example, individuals might say they eat more when they are stressed, anxious, or depressed. It is also important to differentiate BED from other eating disorders. BED does not include compensatory behaviors (for example, purging, as in BN). Patients with BED might state they make recurrent attempts at

dieting, but they do not have restrictive behaviors, as in AN.[10] Asking questions about dietary restrictions, exercise patterns, and purging episodes would help in identifying these other eating disorders. When completing a medication reconciliation, it is imperative to assess for adverse reactions that could contribute to increased appetite and weight gain. NPs need to assess for current and/or past substance use, since SUDs could coexist with or occur prior to BED symptoms.[24] NPs could include a complete review of systems to aid in identifying medical comorbidities, psychiatric comorbidities, and suicidal thoughts.[21] The National Action Alliance for Suicide Prevention and the Joint Commission identify the Ask Suicide-Screening Questions (ASQ) from the National Institute of Mental Health (NIMH) as one of the recommended tools for suicide assessment in primary care settings.[25] NIMH has a website that includes detailed information regarding implementation of the ASQ with an evidence-based decision path to guide the clinician in caring for those who screen positive.[26]

If binge-eating behaviors have been identified, NPs should investigate patients' attitudes toward body weight, appearance, food, and eating, while keeping in mind patients' readiness for change.[20,21] For optimal care, cultural beliefs and behaviors require consideration as potential influences on the presentation of BED.[24] With their patients, NPs should discuss and explore, as part of assessment, family influences on eating patterns, cultural experiences with eating, and thoughts on seeking treatment for eating disorders, including BED.[27] Assessment of food security, access to psychiatric and/or specialty care, and family and/or social support may be important for treatment considerations.

Although the USPSTF does not recommend universal screening of adolescents and adults, Dr. Carol Mangione, coauthor and Task Force vice chair, states that limited evidence is available on screening for eating disorders and that there is especially a need for studies with better representation of men, people of color, and the LGBTQ+ community.[28] If NPs have concerns when assessing eating patterns and appetite during history taking, options for further screening are available to them. The SCOFF questionnaire, which consists of five questions, is the most widely used screening tool to identify individuals with problematic eating symptoms in general, but it does not have overall effectiveness data to support screening for eating disorders beyond AN and/or BN in women.[29,30] One screening tool specifically developed for BED is the 7-item Binge Eating Disorder Screener (BEDS-7). This self-report instrument has shown 100% sensitivity and 39% specificity for BED.[31] The American Psychiatric Association (APA) recommends that, if the SCOFF is used for eating disorder screening, it should be supplemented with the initial question from the BEDS-7: "During the last 3 months, did you have any episodes of excessive overeating (i.e., eating significantly more than what most people would eat in a similar period of time)?"[24] NPs may also consider developing specific questions that may assist in self-disclosure among their patient population.

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Physical exam

The APA eating disorder practice guideline recommends collecting vital signs, height, weight, and BMI (BMI Z-score for children/adolescents) and documenting physical appearance for patients with a possible eating disorder.[24] NPs should order a complete blood cell count and comprehensive metabolic panel. NPs can consider potentially also ordering urine toxicology and vitamin D, iron, and thiamine tests for nutritional status. In patients presenting with abdominal discomfort from eating, an erythrocyte sedimentation rate aids in differentiating between BED and inflammatory conditions. Performing an ECG would be prudent if treating patients with medications that could contribute to QT prolongation.

Treatment

Planning and goals

The goal of treatment for BED is remission of binge-eating behavior, through which improvements are expected for quality of life, mood, and selected metabolic markers (weight, BP, or glucose).[9] Patients with BED who improve in the first month of treatment have the best prognosis.[9] Treatment for BED is often delivered in an outpatient setting; however, medical instability or a psychiatric crisis might require referral to a higher level of care.[24]

Table 1. Clinician and patient/family resources

Clinician	**Academy for Eating Disorders** www.aedweb.org/expert-directory *Provides educational resources for clinicians, including informational videos, continuing education, and webinars*
	National Eating Disorders Organization www.nationaleatingdisorders.org/ *Provides links to virtual and in-person providers for treatment within the US*
Patient/ family	***The Binge Code: 7 Unconventional Keys to End Binge Eating and Lose Excess Weight* by Alison C. Kerr** *Book about BED for patients*
	F.E.A.S.T. (Families Empowered And Supporting Treatment for Eating Disorders) www.feast-ed.org/ *Web resource for parents of children with eating disorders*

Individuals with BED benefit from specialized care due to the complexity of the disorder (biological, psychiatric, and social considerations). The National Institute for Health and Care Excellence (NICE), in the United Kingdom, recommends referral to specialty eating disorder care for continued assessment and treatment if an eating disorder is in the differential diagnosis.[32] However, in the US, many communities might not have access to this type of specialty care. The US Health Resources and Services Administration estimates that in 2023, only 27.19% of the more than 165 million Americans living in Health Professional Shortage Areas, which include both rural and urban settings, have adequate access to mental health providers.[33] To help patients achieve the goals of treatment, NPs might develop and coordinate an interdisciplinary team (IT) consisting of, for example, mental health clinicians, nutritionists/dietitians, and/or general medical providers.[20,21] Web resources are available for NPs to select telehealth providers as options for IT members. One resource is the National Eating Disorder Association (NEDA) website, which includes a directory for locating in-person and virtual resources for eating disorder treatments. *Table 1* highlights additional clinician and patient resources.

NPs in primary care have four important roles in planning, evaluation, and goal setting for BED treatment:

1) During patient visits, conduct social assessments, including attitudes about body weight and psychiatric conditions, and make referrals if necessary (for example, in patients at risk for suicide).
2) Conduct medical evaluations to monitor weight, vital signs, and medical comorbidities.
3) Educate patients and families regarding physical health, weight, health promotion, and nutrition.
4) Compile an IT for provision of coordinated care, development of evidence-based treatment plans, and prevention of recurrence in these patients.

ED-CBT, IPT, and dietary guidelines

APA and NICE guidelines' primary recommendation for BED are eating disorder-focused cognitive behavioral therapy (ED-CBT) or interpersonal therapy (IPT) in individual or group formats.[24,32] APA outlines three steps in ED-CBT programs for BED: 1) suggest three balanced meals with regular snacks, 2) record food intake and binge-eating episodes with associated thoughts and emotions, and 3) treat by challenging the individual's thoughts and emotions to promote behavior change and binge-eating cessation. Individual ED-CBT usually includes 16-22 weekly sessions, whereas group sessions range from 8 to 19 sessions. IPT usually has up to 24 sessions to identify BED symptoms and their connections with patients' interpersonal and social context, targeting one of four areas (grief, interpersonal role disputes, role transitions, and/or interpersonal deficits) as well as ways binge-eating behaviors relate to current interpersonal situations. A meta-analysis reports that at 12 months after psychotherapy treatment, 46% to 52% of patients with BED sustained reduced symptoms.[34] If these psychotherapies are not locally available, web-based CBT or guided self-help CBT has shown modest effect sizes.[24] Most individuals with BED benefit from a nutritionist referral, allowing further assessment of nutritional intake while developing structured meal plans that promote satiety, prevent craving, and reduce urges to binge eat.[24]

Medications

Pharmacologic studies examining the effectiveness of BED medications include mostly White women, thereby limiting the applicability of findings to other groups, such as men, people of color, and the LGBTQ+ community.[34] The NICE guideline does not recommend pharmacotherapy without concurrent psychotherapy.[32] The APA guideline recommends treatment with either lisdexamfetamine dimesylate or an antidepressant medication for

BED.[24] Lisdexamfetamine, which is FDA-approved for BED, is the prodrug of dextroamphetamine, and it is not active until it has been absorbed in the small intestine. It carries a boxed warning for the risk of abuse or dependence and is a DEA Schedule II drug. Before prescribing lisdexamfetamine, NPs need to consider its adverse reaction profile and the patient's comorbidities that might be improved, such as attention-deficit/hyperactivity disorder, or worsened, such as Raynaud syndrome and anxiety disorders, by it. Data have shown modest efficacy in reduction of short-term binging behavior, and studies have included mostly individuals with obesity in primary care settings, thus limiting knowledge of benefits for other populations. However, continued treatment with lisdexamfetamine was associated with less relapse risk than with discontinuing lisdexamfetamine.[35] For individuals with BED, the initial dosing is 30 mg once daily in the morning with upward titration in increments of 20 mg at weekly intervals to a therapeutic target dose of 50 mg to 70 mg once daily.[34] As with many psychotropic medications, limited studies have been conducted on lisdexamfetamine use during pregnancy and breastfeeding; therefore, NPs need to discuss risks and benefits of this medication with patients and families.

Adverse reactions of lisdexamfetamine are similar to those of other stimulants and include insomnia, nausea, dry mouth, tremors, irritability, headaches, anorexia, bowel changes, and weight loss. Patients need to be assessed for presence or history of cardiac disease and monitored for BP and heart rate changes during treatment.

Antidepressant therapy, such as with selective serotonin reuptake inhibitors (SSRIs) or serotonin-norepinephrine reuptake inhibitors (SNRIs), is another option for BED treatment. It is important to consider that many patients have underlying psychiatric comorbidities, such as anxiety and depression, although antidepressant therapy has been shown to be effective for BED regardless of whether these conditions are present. The APA does not offer any recommendation for a specific antidepressant drug for BED.[24] However, it is important to note that lisdexamfetamine carries a risk of serotonin syndrome when used with certain other drugs, including SSRIs and SNRIs. Another consideration is that patients might not disclose purging episodes during the initial assessment due to shame, so it can be difficult to determine whether patients have BED or BN. Due to this possible differentiation problem, bupropion may not be an ideal choice for treating depression and anxiety in individuals with suspected BED, since bupropion is contraindicated in patients with BN (who might be misdiagnosed as having BED), given the increased risk of seizures from purging with use of this medication.[24] In deciding on an antidepressant medication, NPs could consider its adverse reaction profile, especially its potential for weight gain and increased appetite (for example, as seen with paroxetine and mirtazapine) that could impact treatment success.

APA suggests topiramate as a possible off-label medication for BED.[24] Topiramate in combination with phentermine is FDA-approved for chronic weight management and might be a good choice for individuals with at least one weight-related comorbid condition. One meta-analysis suggests topiramate may decrease the number of binge episodes and body weight with a small effect size.[36] However, the drug has many adverse reactions that can cause treatment cessation (for example, sedation, concentration problems, fatigue, dizziness, and tremors). Topiramate needs to be tapered before discontinuation. Studies have found increased risks of birth defects, preterm birth, and low birth weight in patients taking topiramate during pregnancy.[37]

Conclusion

BED is a serious eating disorder with detrimental effects on individuals' functioning, quality of life, physical health, and psychiatric health. NPs are able to identify this disorder through awareness of risk factors and communication techniques. Due to BED's complex interface of social, psychological, neurological, and medical factors, NPs should work with other HCPs to assist individuals with BED in achieving success in treatment.

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