FEEDING AND EATING DISORDERS

Introduction

Eating disorders are a significant problem in the United States among children and adolescents of all ethnic groups (Nicholls & Viner, 2005). The incidence of eating disorders among adolescent females has grown at an alarming rate over the past several decades (American Dietetic Association [ADA], 2001). The American Psychiatric Association (APA) has reported that eating disorders are now the third most common form of chronic illness in the adolescent female population (2000), with prevalence rates as high as ten percent (American Academy of Child and Adolescent Psychiatry [AACAP], 2013). Males also struggle with eating disorders, as they account for approximately 10 percent of the bulimia nervosa population and 35 percent of the anorexia nervosa population (APA, 2013, Anorexia Nervosa and Related Eating Disorders, Inc. [ANRED], 2004; Spitzer et al., 1993).

Although anorexia nervosa (AN) predominantly affects adolescent and young adult females, there are reports of children as young as six years of age affected by the disorder (ANRED, 2004). Similarly, bulimia nervosa (BN) generally affects adolescents, although there have been cases reported for children much younger (International Eating Disorder Referral Organization, n.d.). A recent assessment of eating disorder trends in London suggests that the number of young adult females with the diagnoses of AN has stabilized and the number of reported BN diagnoses has decreased (Currin et al., 2005). However, this is not the case for adolescents, as incidence rates for AN continue to rise (Herpertz-Dahlmann, 2008). A further telling statistic is the fact that only 10 percent of diagnosable individuals actually receive treatment for their disorder (Eating Disorders Coalition [EDC], n.d.). AN has the highest mortality rate of any mental health disorder (Hoek, 2006). It is important to note that there is significant variance on the reported number of deaths because these individuals may ultimately die from serious medical complications associated with feeding and eating disorders.

Recent Changes from the DSM-IV to the DSM-5

In 2013, the American Psychiatric Association released the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*). The *DSM-5* introduced a chapter titled "Feeding and Eating Disorders," which takes a life-span approach to diagnosing eating disorders and contains all related

diagnoses (Kenny, Ward-Lichterman, & Abdelmonem, 2014). Disorders now included in this category are pica and rumination and avoidant/restrictive food intake disorder. Additionally, the *DSM-5* recognizes binge-eating disorder (BED) as an official disorder. While pica and rumination disorder remain unchanged, AN and BN experienced some criteria changes. The *DSM-5* also includes a system for classifying the severity of several eating disorders (mild, moderate, and severe) and attempts to address the number of cases of eating disorders that do not meet criteria.

The *DSM-5* is a manual for assessment and diagnosis of mental health disorders and does not include information for treatment of any disorder. In the future, more evidence supporting treatments of disorders with *DSM-5* classifications will be available as clinical studies utilizing *DSM-5* criteria are conducted. As a result, this *Collection* will reference studies that utilize *DSM-IV* diagnostic criteria to explain symptoms and treatments.

This section of the *Collection* will focus on the three most prevalent eating disorders that affect children and adolescents; AN, BN, and Binge-eating Disorder (BED). This is because the prevalence rates of the other Feeding and Eating Disorders are unclear and two of the classifications are more likely to be present with a comorbid intellectual disability (APA, 2013).

Table 1 outlines the changes to the "Feeding and Eating Disorders" classification.

Categories

This section describes the three most prevalent eating disorders that affect youth: anorexia nervosa, bulimia nervosa, and binge-eating disorder.

Anorexia Nervosa (AN)

The primary characteristic/criterion of AN is intense fear of gaining weight or becoming fat, even when the individual is underweight. Individuals with AN resists maintaining their body weight at or above a minimally normal weight for their age and height. Youth with AN will often exhibit "significantly low weight," which is defined as weighing less than what is minimally expected (APA, 2013). The APA (2013) outlines the likely symptoms of youth having AN. These symptoms include:

- Disturbance in perceptions of personal body weight;
- Undue influence of body weight and shape in self-evaluation; and
- Denial of the seriousness of the current low body weight.

The *DSM-5* recognizes two AN subtypes:

Restricting – Weight loss is accomplished by dieting, fasting, or excessive exercise with no binging or purging; and

Binge-eating/purging – The youth binge eats, purges, or both. Purging is defined as the use of laxatives or the act of self-induced vomiting to clear the stomach of any ingested food (APA, 2013).

Calculating body mass index (BMI) for children and adolescents is useful for determining normal weight (APA, 2013). BMI is not completely determinative because children all grow at different rates and other factors, including growth trajectories, should be taken into consideration (APA). For adults, a BMI under 17 is considered significantly underweight. However, for children, the general rule is that if the child's BMI is below the fifth percentile for their age, they are significantly underweight (APA).

Table 1
***DSM-5* Expansion and Clarification of Feeding and Eating Disorder Criteria**

Disorder	*DSM-IV*	*DSM-5*
Anorexia Nervosa (AN)	Required food refusal	No longer requires food refusal because it is difficult to diagnose
	Required amenorrhea (absence of at least three menstrual cycles)	No longer requires amenorrhea because it cannot be applied to males, premenarchal females, post-menopausal females, or females on birth control
Binge Eating Disorder (BED)	Not an official diagnosis. Although research criteria was included in Appendix B, disorder had to be diagnosed as Eating Disorder Not Otherwise Specified (EDNOS)	Included in the "Feeding and Eating Disorders" section based on studies that suggest that many individuals diagnosed with EDNOS fit into the binge eating disorder diagnostic criteria
Bulimia Nervosa (BN)	Required binge eating and compensatory behaviors twice weekly	Reduces symptom requirement to once a week
Avoidant/Restrictive Food Intake Disorder	Previously named "Feeding Disorder of Infancy or Early Childhood"	Added to "Feeding and Eating Disorders" section and expanded so it could be applied to all individuals, not just children
Other Specified Feeding or Eating Disorder	Previously considered "Eating Disorder Not Otherwise Specified" (EDNOS)	A new classification that replaces EDNOS; this disorder addresses individuals with symptoms that do not meet the full criteria for any of the other eating disorders; the clinician must specify why the presentation does not meet the full criteria
Unspecified Feeding or Eating Disorder	Previously considered "Eating Disorder Not Otherwise Specified" (EDNOS)	A new classification that replaces EDNOS; this disorder addresses individuals with symptoms that do not meet the full criteria for any of the other eating disorders; used when the clinician is unable to provide the specific reason why the clinical presentation does not meet full criteria
Pica	Located in the "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" section	No change to diagnosis; moved to the "Feeding and Eating Disorders" section to indicate that the diagnosis can be made for individuals of any age
Rumination Disorder	Located in the "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" section	No change to diagnosis; moved to the "Feeding and Eating Disorders" section to indicate that the diagnosis can be made for individuals of any age

Source: APA, 2013; Kenny, 2014.

Bulimia Nervosa (BN)

BN consists of recurrent episodes of binge eating, characterized by consumption of excessive amounts of food within a discrete period of time, and lack of control in overeating during the episode. In order to prevent weight gain, the binges are followed by recurrent inappropriate responses, such as self-induced vomiting or misuse of laxatives and other medications (often referred to as purging), fasting, or excessive exercise. The binge eating and compensatory behaviors both occur, on average, at least once a week for three months or more. Finally, like other eating disorders, the individual's self-evaluation is unduly influenced by body shape and weight (APA, 2013). Recognizing BN can be challenging because many individuals with BN are within their normal weight range. Youths affected with BN are often embarrassed by their compulsion to eat and may also attempt to hide their symptoms (APA).

BN ranges in severity. The *DSM-5* outlines four levels:

- Mild: 1-3 episodes of inappropriate compensatory behaviors weekly;
- Moderate: 4-7 episodes of inappropriate compensatory behaviors weekly;
- Severe: 8-13 episodes of inappropriate compensatory behaviors weekly; and
- Extreme: 14 or more episodes of inappropriate compensatory behaviors weekly (APA, 2013).

Binge-Eating Disorder (BED)

For the first time, the *DSM-5* has included the diagnosis of BED as an official disorder (APA, 2013). In the previous edition, BED was classified within the category Eating Disorder Not Otherwise Specified (EDNOS), with research criteria outlined in the appendices (APA, 2000). With the publication of the *DSM-5*, BED was promoted to a full-fledged diagnosis. This addition is highly significant because BED is likely to be the most prevalent eating disorder (Striegel-Moore & Franko, as cited by Kenny, Ward-Lichterman, & Abdelmonem, 2014).

BED shares the binge-eating criterion of BN of consuming an objectively large quantity of food in a relatively short time while experiencing a loss of control (Kenny, 2014). The disorder differs from BN, however, in that individuals with BED do not engage in compensatory behaviors, such as vomiting or laxative use, after binge eating. In addition, for an individual to be diagnosed with BN, body weight and shape must unduly influence his or her self-concept. This is not necessary for a diagnosis of BED (APA, 2013).

The second criterion for BED describes behaviors, emotions, and thoughts associated with binge eating. BED includes recurrent episodes of binge eating followed by marked distress. Binge eating is accompanied by an uncontrollable feeling that one cannot stop eating. Binge eating episodes must include three or more of the following:

- Eating more rapidly than normal;
- Eating until uncomfortably full;
- Eating large amounts of food when not hungry;
- Eating alone because of embarrassment from the amount of food being consumed; or,
- Feeling disgusted with oneself, depressed, or very guilty afterwards (APA, 2013).

The binge eating occurs, on average, at least once a week for three months (APA).

Prevalence

Table 2 outlines the prevalence of AN, BN, and BED.

Table 2
Prevalence by Disorder

Disorder	Prevalence Rates	
Anorexia Nervosa	Young Females	Approximately 0.4%
	Young Males	Far less common than in young females. Diagnosis ratio: 10:1 females to males.
Bulimia Nervosa	Young Females	1% to 5%; peaking in older adolescence and young adulthood
	Young Males	Far less common than in young females. Diagnosis ratio: 10:1 females to males.
Binge-Eating Disorder	Prevalence data is not available for young people.	
	Adult Females	1.6%
	Adult Males	0.8%
	BED is more frequent in individuals seeking weight loss treatment than in the general population.	

Source: APA, 2013.

Causes and Risk Factors

Attempts to identify a single cause of eating disorders have been abandoned and replaced by a more multifaceted etiological theory. Studies suggest disordered eating typically develops from a complex interaction of psychological risk factors, sociocultural influences, and biological or genetic predispositions (Striegel-Moore & Bulike, 2007; Mazzeo & Bulik, 2008; Rosen and the Committee on Adolescence, 2010).

Psychological Risk Factors

Psychological factors include negative affect, low self-esteem, and intense dissatisfaction with appearance (Stice, 2002). In fact, body dissatisfaction is "one of the most consistent and robust risk and maintenance factors for eating pathology" (Stice). Perfectionist or impulsive traits and rigid cognitive styles have also been identified as risk factors (Herpertz-Dahlmann et al., 2001; Klump et al., 2004). In addition, factors such as dysfunctional families and relationships (e.g., conflict avoidance, significant parental enmeshment, and/or rigid/overprotective parenting) have been highly correlated with developing an eating disorder (American Psychological Association HealthCenter, 1998; Gonzalez, Kohn & Clarke, 2007).

Individuals diagnosed with eating disorders are also more likely than the general population to have a history of abuse or trauma (ADA, 2001). Specifically, sexual abuse has been reported in 20 to 50 percent of individuals with AN and BN, but BN may be more common in adolescents reporting sexual abuse

during childhood. Adolescents who reported one episode of childhood sexual abuse were 2.5 times more likely to exhibit symptoms of BN than those who did not; this prevalence increased to 4.9 times more likely when two or more episodes of childhood sexual abuse were reported (Sanci et al, 2008). Females with eating disorders who have suffered from sexual abuse also demonstrate higher rates of comorbid psychiatric conditions (APA, 2000). Studies of national samples of girls and boys exposed to physical and sexual abuse have shown that, although binge and purge behaviors were nearly twice as prevalent among girls (13 percent) as boys (7 percent), boys who had experienced both physical and sexual abuse were nearly twice as likely as girls to report these behaviors to friends or family (Ackard, 2001). Inadequate coping mechanisms (e.g., poor distress tolerance and emotion regulation difficulties) are also common in those with disordered eating and may explain an individual's adoption of maladaptive eating patterns in response to trauma (Mazzeo & Bulik, 2008).

Personality traits may also affect the onset, type, and persistence of eating disorders. Traits including perfectionism, obsessive-compulsiveness, neuroticism, negative emotionality, avoiding harm, lack of self-direction, lack of cooperation, and avoidant personality disorder traits often accompany AN and BN (Cassin & von Ranson, 2005).

Sociocultural Influences

The sociocultural model of eating disorders (Striegel-Moore & Bulik, 2007) asserts that exposure to the Western concept of the ideal body type ⸺through magazines, television, and the Internet — promotes internalization of the thin ideal. The thin ideal is the internalized desire to have a body or body image similar to those portrayed in the mass media (Ferguson et al., 2014). Peer competition is the major driving force for body dissatisfaction. While social media may not drive body dissatisfaction, it may be used as an outlet for youth to compete (Ferguson et al.). When individuals evaluate their own body size negatively because it is thought to vary from the ideal, body dissatisfaction may ensue. Subsequently, elevated body mass index and increased awareness of body size have been linked to the onset of excessive dieting and body dissatisfaction, both of which are prominent risk factors for eating disorders (Neumark-Sztainer et al., 2007; Stice, 2002; Striegel-Moore & Bulik).

The media has a strong influence on how individuals self-identify. They can feel either empowered or rejected due to messages relayed through mass media outlets. The power of sociocultural influences is exemplified in females as young as age nine, 40 percent of whom report a history of dieting (Maier, 2003). Objectification of the female body further reinforces the importance of achieving the thin ideal, particularly among young women (Moradi, Dirks, & Matteson, 2005). The most frequent drivers of the thin ideal are family characteristics and media such as television, movies, and advertising (Mancilla-Díaz, et al., 2012). However, the greatest influence on the thin ideal is peer pressure (Mancilla-Díaz, et al.).

Athletes, models, dancers, and performers also have a high prevalence of eating disorders (ADA, 2001). One study concluded that females participating in aesthetic sports (those that emphasize appearance, such as gymnastics) versus non-aesthetic sports or no sports experienced higher weight concerns (Davison, Ernest, Birch, as cited by Natenshon, 2016). Males who are jockeys, wrestlers, and runners have a need to be thin or to be a certain weight to compete in their respective sports. Because of this, these athletes are at increased risk of developing an eating disorder (Torres-McGehee et al., 2011). Thus, the risk of developing disordered eating symptoms increases when dietary restraint and the thin ideal assume great personal importance. This sociocultural theory may also help explain why adolescent females are more likely to develop AN and BN (Striegel-Moore & Bulik, 2007).

Biological or Genetic Factors

Genetic factors may contribute to the development of maladaptive eating behaviors (APA, 2013; Mazzeo & Bulik, 2008; Striegel-Moore & Bulik, 2007). Specifically, first-degree female relatives and identical twin siblings of individuals with AN, BN, or BED have higher rates of eating disorder diagnoses than the

general population, suggesting the existence of a biological predisposition (APA; Striegel-Moore & Bulik). Inheritance patterns, however, remain unclear. Genes can be one the largest determinants of an individual's likelihood of developing an eating disorder (Rosen and the Committee on Adolescence, 2010).

Genetic predisposition may interact with sociocultural influences to serve as a catalyst for the development of disordered eating (Mazzeo & Bulik, 2008). For example, a young woman with a family history of eating disorder patterns may seek out appearance-related feedback and/or engage in image-focused activities (e.g., swimming or cheerleading), thereby interacting in environments in which the importance of her appearance is reinforced. In this way, exposure to image-focused media may serve as an additional factor in the development of weight and shape concerns (Bulik, 2004; Mazzeo & Bulik). Molecular genetic studies found that binge eating and vomiting behaviors are highly heritable, whereas weight and concerns on self-evaluation for BN appears to be a separate environmental factor (Striegel-Moore & Bulik, 2007).

Striegel-Moore and Bulik (2007) further propose that various neonatal complications may lead to an increased risk for AN. Longitudinal studies have shown that poor maternal feeding behaviors, such as food restriction and weight control behaviors, may lead to premature births and be an indicator of the future onset of AN. Finally, some researchers have found that abnormal serotonin metabolism may play a greater role in individuals with BN than those with AN, suggesting biological differences in individuals with these two diagnoses (Murphy, Cowan & Sederer, 2001).

Comorbidity

Comorbidities for eating disorders can be medical and/or psychiatric in nature. Both issues are discussed in the paragraphs which follow.

Medical

While feeding and eating disorders are considered to be psychiatric in nature, accompanying nutrition and medical problems may make them life-threatening (ADA, 2001). As noted by the National Institute of Mental Health (NIMH), of particular concern is the increased mortality rate of individuals with eating disorders, particularly those diagnosed with AN (2001). Recent studies suggest that individuals diagnosed with AN are more likely to suffer premature death (Steinhausen, 2008). The mortality rate attributed to AN in females aged 15 to 24 is approximately 12 times higher than the annual death rate for all causes. According to NIMH, the most common cause of death in those with AN are complications of the disorder, such as starvation, cardiac arrest, electrolyte imbalance, and even suicide. Mortality rates for BN are lower than AN, but remain a serious danger (Fichter & Quadflieg, 2004).

Adolescents with eating disorders face the risk of potentially irreversible medical complications, including:

- Growth retardation when the eating disorder occurs prior to closure of the epiphyses;
- Pubertal delay or arrest;
- Impaired acquisition of peak bone mass during adolescence;
- Increased risk of osteoporosis in adulthood; and
- Lost brain tissue and increased cerebrospinal fluid (ADA, 2001; Scudder, 2011).

Malnutrition and excessive exercise may also contribute to loss of bone mass in those suffering from AN and BN (Herpertz-Dahlmann, 2008). The effects on bone density may be permanent, and increase the risk of fractures through adolescence and throughout life (Scudder, 2011). The changes in the brain caused by eating disorders will alter mood and cognitive ability, both of which resolve upon weight recovery

(Scudder). However, there is question about the long-term effects on brain mass; most brain mass returns after weight restoration, but some deficits do remain (Scudder).

In chronic eating-disordered behaviors, additional physical comorbidities are common. For example, some individuals with eating disorders experience amenorrhea, constipation, abdominal pain, cold intolerance, lethargy, emaciation, permanent dental damage, and/or cardiovascular problems, typically the result of semi-starvation and/or purging (APA, 2013). Symptoms associated with dehydration, such as the imbalance of electrolytes, require immediate medical attention, including hospitalization, when it is necessary to address the side effects of dehydration and/or to restore weight (APA).

Psychiatric

It is common for individuals suffering from eating disorders to experience additional significant distress due to comorbid psychological conditions. Disorders comorbid to BED are comparable to those comorbid to AN and BN; the severity of the comorbid disorder is linked to the severity of binge eating, not to the degree of obesity (APA, 2013). Psychological disorders such as bipolar, depressive, and anxiety disorders often co-occur with AN, BN, or BED (APA, 2013). As high as 50 percent of individuals with a feeding and eating disorder also have depression (National Association of Anorexia Nervosa and Associated Disorders [ANAD], n.d.).

Mood disorders frequently occur at the same time BN presents, and many individuals attribute mood disturbances to BN (APA, 2013). The mood disorders often end after effective BN treatment (APA). Substance abuse disorders may be present in as high as 30 percent of those with BN and 12 to 18 percent of those with AN, the latter of which may be employed to suppress appetite (APA, ADA, 2001). Alcohol and substance use disorders are more likely to be found with the binge eating/purging subtype of AN (APA). Research by Herpetz-Dahlmann (2008) suggests that female youth diagnosed with attention-deficit/hyperactivity disorder (ADHD) may also be more likely to develop maladaptive eating patterns and distorted body image. Researchers have yet to determine the order of onset of psychological comorbidities. It is unclear whether conditions develop because of the isolation, stigma, and physiological changes brought on by eating disorders or whether they existed prior to the development of unhealthy eating habits (American Psychological Association HealthCenter, 1998).

Many individuals with AN may be diagnosed with an anxiety disorder or related symptoms prior to the eating disorder onset (APA, 2013). Anxiety may also accompany BN, including fear in social situations, but, as with mood disorders, anxiety frequently remits after effective BN treatment (APA). Additionally, obsessive-compulsive disorder (OCD) may accompany AN, especially the restricting type (APA). Furthermore, in the majority of participants the onset of anxiety disorders preceded symptoms of eating disorders (Swinbourne et al., 2012). Further research is needed, but there seems to be a strong correlation between the two disorders.

The risk of suicide in individuals diagnosed with an eating disorder is substantial. Individuals with an eating disorder are significantly more likely to attempt suicide than those not diagnosed with an eating disorder (Pompili et al., 2006). One study of adult females with eating disorders suggests that those with recurring suicidal thoughts usually developed their disorders at younger ages (Ham, 2004). Individuals with BN report a greater number of suicidal attempts (25 to 35 percent), compared to those with AN (10 to 20 percent) (Herpertz-Dahlmann, 2008). Researchers speculate that the link between purging and suicidal attempts may point to a general lack of impulse control, whereas the higher prevalence of suicidal thoughts among individuals with AN suggests chronic self-harming behavior (Ham).

Assessment

The earlier an eating disorder is diagnosed and subsequently treated, the more likely a full recovery will be made (Rosen and the Committee on Adolescence, 2010; Scudder, 2011). The American Academy of

Pediatrics recommends that pediatricians also ask pre-adolescents and adolescents about eating patterns and body image (Rosen and the Committee on Adolescence). When weight is regularly tracked, pediatricians can look for a change in weight to determine whether a youth is losing, gaining, or maintaining weight in a healthy manner (Rosen and the Committee on Adolescence; Scudder). Comprehensive symptom assessment requires the utilization of multiple cognitive and behavioral measures, as well as a thorough medical examination. This physical examination typically includes assessments of heart rate, blood pressure, body temperature, blood count, biochemical profile (e.g., electrolytes), electrocardiogram (ECG), electroencephalogram (EEG), magnetic resonance imaging (MRI), and computed tomography (CT) (Herpertz-Dahlmann, 2008).

For AN and BN, often the first physical signs of an eating disorder are changes in the mouth, including enlarged salivary glands, changed tooth color, tissue loss or lesions, heightened sensitivity to temperature, and tooth decay from induced vomiting (NEDA, 2002). Dental practitioners are typically the first to identify signs of BN. According to the NEDA, tooth erosion is evident in approximately 89 percent of individuals with BN. Other frequent indicators of BN are an enlarged parotid/salivary gland, scars on the back of the hand from induced vomiting, and dehydration.

For AN, youth may present the following physical symptoms: dry skin that, when pinched and released, stays pinched; dehydration; abdominal pain; constipation; lethargy; dizziness; fatigue; infrequent or absent menstrual periods in females who have reached puberty; intolerance to cold temperatures; emaciation; development of lanugo (fine, downy body hair); and yellowing of the skin (University of Virginia Health System, 2009; NIMH, 2001).

Typically, clinicians use self-report questionnaires and structured/semi-structured clinical interviews to assess cognitive and behavioral eating disorder symptoms, as well as other psychiatric comorbidities. Valid and reliable interview tools are included in Table 3.

For assessment purposes, it is important to understand that individuals with disordered eating symptoms tend to self-evaluate their symptoms as compatible with their attitudes, behaviors, and beliefs (Keel & Haedt, 2008). Therefore, self-report outcomes may be biased and should be considered in conjunction with findings from a physical examination. Family history of disordered eating behaviors and attitudes should also be explored in order to gain a comprehensive understanding of the individual's predisposition to disordered eating behaviors and cognitions (Mazzeo & Bulik, 2008). Assessing parental feeding patterns is also important, as caregivers will likely be integral components of the treatment program and may themselves encounter difficulties initiating and maintaining a healthy relationship with food and weight.

The Eating Disorder Examination (EDE), once regarded as the "gold standard" for determining BN symptomology, is now considered to be more effective at determining body dissatisfaction (Sandberg & Erford, 2013). Without questioning additional informants, such as parents, adolescents are more likely to downplay aspects of their eating disorder and score lower on the EDE (House, et al., 2008). These adolescents deny their symptoms and do not desire help (Mariano et al., 2013). However, when clinicians pair the EDE with recent modifications by Couturier, et al., the results more accurately diagnose AN in adolescents (House, et al.). The Development and Well-Being Assessment (DAWBA) may be a more effective assessment tool, and clinicians should consider both when diagnosing potential eating disorders (House, et al.; Moya et al., 2005).

The *DSM-5* suggests using body mass index (BMI) as a preliminary indicator of AN or BN. Table 4 outlines the new guidelines to be used when BMI is taken into consideration.

Table 3
Suggested Assessment Tools

Name of Measure	Measure Type	Who Completes	Generated Information
Interview for the Diagnosis of Eating Disorders (4th Edition) (IDED-IV)	Valid & reliable interview tools	Clinician	Diagnoses of AN, BN, and BED with symptom severity, including concern with eating, weight and shape, and dietary restraint
Eating Disorder Examination (12th Edition) (EDE)			
Eating Disorder Diagnostic Scale (EDDS)	Empirically supported, self-rating scales	Youth	Symptom ratings
Binge Eating Scale (BES)			
Eating Disorder Examination Questionnaire (EDED-Q)			
Eating Attitudes Test (EAT)			
Eating Disorder Inventory-Revised (EDI-3)			
Bulimia Test-Revised (BULIT-R)			
Multiaxial Assessment of Eating Disorder Symptoms (MAEDS)			
Stirling Eating Disorder Scale (SEDS)			
Eating Inventory (EI)			

Sources: Commission on Youth Graphic of references listed in text.

Table 4
BMI Severity Ranges for Underweight Individuals

Severity	BMI
Mild	$\geq$ 17 kg/m^2
Moderate	16 – 16.99 kg/m^2
Severe	15 – 15.99 kg/m^2
Extreme	< 15 kg/m^2

Source: APA, 2013.

Treatment

The earlier an eating disorder is identified and treated, the better the chances for recovery (Levine & Maine, 2005; Steinhausen, 2008; Scudder, 2011). However, individuals with eating disorders are among the least likely to seek treatment (American Psychological Association HealthCenter, 1998). Pediatricians are crucial not only in identifying eating disorders, but also in managing the treatment process, including coordinated care with nutrition and mental health professionals (Rosen and the Committee on Adolescence, 2010; Scudder). A comprehensive treatment plan should include medical care and monitoring, psychosocial interventions, nutritional counseling and, when appropriate, medication management (NIMH, 2001). Treatment providers should also discuss with both the individual and his/her family the role genetics may play in these disorders (Mazzeo & Bulik, 2008); this can minimize the guilt family members may experience and increase their willingness to be active participants in the treatment process.

Treatment locations range from intensive patient settings, in which general medical consultation is readily available, to partial hospital and residential programs with varying levels of outpatient care. The individual's weight, cardiac, and metabolic status are the most important physical parameters for determining treatment setting. Individuals who weigh under 85 percent of their estimated healthy weights are likely to require a highly structured program and possibly 24-hour hospitalization. Hospitalization should occur before the onset of medical instability, as manifested by severely abnormal vital signs. Specifically, once the youth begins to display a rapid decline in food intake and dramatic loss of weight, treatment providers should seriously consider hospitalization. Furthermore, the presence of external stressors or comorbid psychiatric disorders may have a significant impact on this decision.

Many individuals have a limited response to treatment and require long-term monitoring and intervention (U.S. Department of Health and Human Services, 1999). Because AN, in particular, is chronic in nature, those diagnosed with AN may struggle with the disorder for five to ten years or longer (Medscape Internal Medicine, 2006). Individuals with AN may be particularly difficult to treat because they are highly resistant to weight gain and are likely to exhibit a fear of losing control (Murphy, Cowan, & Sederer, 2001). Thus, ethical considerations may arise during the course of treatment, and involuntary hospitalization may be the necessary course. The prognosis in adolescents with eating disorders is much better than that in adults (Rosen and the Committee on Adolescence, 2010). Even with a higher probability of success, families should be aware that it might take as long as 10 years from the commencement of treatment to behavioral cure, including normal eating and normal weight (Rosen and the Committee on Adolescence).

The majority of studies have been conducted with adolescents over age 15, although evaluation of adolescent males is limited (Keel & Haedt, 2008). The limitations of research of eating disorder interventions for males and young children should be acknowledged when considering the course of treatment.

Unless otherwise cited, information in the rest of this section is taken from APA (2000).

Anorexia Nervosa (AN)

According to the APA (2000), the treatment methods described in the paragraphs that follow and in Table 5 are the most empirically supported for individuals with AN. The treatment of AN generally occurs in three primary phases:

- Restoring the weight lost by severe dieting and purging;
- Treating psychological disturbances, such as distorted self-perception, low self-esteem, and interpersonal issues; and
- Achieving long-term, full recovery (NIMH, 2001).

What Works – Evidence-based Treatments

Nutritional rehabilitation – Evidence suggests that nutritional monitoring is effective in helping individuals return to a healthy weight, so long as it is conducted in a setting that meets the individual's needs. Increasing calories consumed may be difficult, but smaller, frequent meals, calorie dense foods, and substituting fruit juice for water may help negate psychological barriers, such as aversion to a feeling of fullness (Rosen and the Committee on Adolescence, 2010). For severely underweight individuals, individual treatment has been found to be most effective. Clinicians have reported that, as weight is restored, other eating disorder and psychiatric comorbid symptoms diminish; however, they often do not disappear completely. Psychoeducational nutrition groups have also been associated with positive outcomes (Herpertz-Dahlmann & Salbach-Andrae, 2008). Although helpful, it is important that nutrition counseling serve as only one component of a multidisciplinary treatment approach.

Family-based psychotherapy – Family-based psychotherapy is considered the gold standard of treatment for AN in adolescents (Bailey et al., 2014; Murray, Thornton, & Wallis, 2012). The goal of family therapy is to involve family members in symptom reduction and to deal with family relational problems that may contribute to AN. Some studies have found that family therapy is associated with greater long-term benefits and better retention rates compared to individual psychotherapy (Bulik et al., 2007; Keel & Haedt, 2008; Lock et al., 2010). This seems to be especially true when the family is treated as part of the treatment team. However, these findings are limited to generalizations because the individuals in these studies often did not receive both family and individual treatment, which commonly occurs in practice. Family-based therapy occurs over the following three stages:

1. Parents, along with the therapist, take responsibility to ensure the adolescent is eating sufficiently and controlling other pathologic weight control methods. Substantial weight recovery occurs before moving to the second phase.
2. Parents and the therapist help the adolescent gradually take over responsibility for his or her eating. Weight is restored in the second phase, and then the family moves onto the third phase.
3. The family addresses more general issues of the adolescent's development and how they were disrupted by the eating disorder (Rosen and the Committee on Adolescence, 2010).

Family psychotherapy may not be appropriate for families in which one or both parents exhibit psychopathy or hostility to the affected child, and it may not be appropriate for the most medically compromised adolescents (Rosen and the Committee on Adolescence, 2010).

In-Patient behavioral programs – These programs commonly provide a combination of nonpunitive reinforcers, such as privileges linked to weight goals and desired behaviors. They have been shown to produce good short-term therapeutic effects. Adolescents with AN may have the best outcomes after structured in-patient or partial hospitalization treatment. For example, one study found that adolescents who had received systematic in-patient treatment with close cooperation among parents and the pediatric and child and adolescent psychiatry departments had good outcomes even three to 14 years after treatment (APA, 2000).

What Seems to Work

Cognitive Behavioral Therapy (CBT) – When specifically directed at the eating disorder symptoms and underlying conditions, CBT appears quite promising. However, the long-term effects are not yet well known (Butler, et al., 2005 citing Wilson & Fairburn, 1998). Results from the treatment of adolescent depression and anxiety disorders suggest that age appropriate modifications to adult CBT treatment programs for eating disorders may well be effective (Gowers, 2006).

Pharmacological treatments – No medication is currently approved by the Food and Drug Administration (FDA) to treat AN (Powers & Bruty, 2008). The most typical medications prescribed are

antidepressants; however, they should not be used in the acute phase of treatment for severely malnourished individuals as they are more sensitive to their side effects. Psychological symptoms, particularly those related to mood disorders, seem to be exacerbated during periods of semi-starvation and significant weight loss (Keys, 1950). Thus, before prescribing psychopharmaceuticals to relieve symptoms associated with these individuals' comorbidities, clinicians should first work towards minimizing the occurrence of purging behaviors and begin the refeeding process (Herpertz-Dahlmann, 2008).

Selective serotonin reuptake inhibitors (SSRIs) are frequently used for individuals whose depressive, obsessive, or compulsive symptoms persist in spite of or in the absence of weight gain. However, studies have not shown SSRIs to be effective for purposes of restoring weight or preventing relapse (Kuo, 2006). The use of SSRIs for adult AN has not produced enough encouraging results, with safety concerns and lack of outcome data that makes application to younger populations problematic (Bailey et al., 2014).

Preliminary evidence suggests that some atypical antipsychotics (e.g., olanzapine) may minimize some AN symptoms, especially in those diagnosed with the binge-purge subtype (Powers & Bruty, 2008). However, the benefits must be weighed while accounting for side effects, such as metabolic disorders and weight gain, which may prompt poor treatment adherence in resistant clients.

Not Adequately Tested

Individual psychotherapy – The efficacy of this form of treatment remains uncertain. No controlled studies have reported whether specific psychotherapeutic interventions are effective for nutritional recovery. Clinicians generally agree that psychotherapy is almost always beneficial during acute refeeding; however, in starving individuals, who are often negative, obsessive, or mildly cognitively impaired, this form of treatment may often be ineffective. Psychotherapy may be a useful method in treating co-occurring disorders. Keel and Haedt (2008) present a review of various individual treatment programs that, based on preliminary analyses, may prove to be efficacious in the future (e.g., self-psychology, CBT, virtual reality).

What Does Not Work

Group psychotherapy – Practitioners have found that group psychotherapy programs conducted during an acute phase among individuals with AN may be ineffective and can have negative therapeutic effects, as individuals in the group may compete to be the thinnest or exchange counter-therapeutic techniques on simulating weight gain or hiding food.

12-step programs – No data regarding the short- or long-term effectiveness of this form of treatment is available. However, use of addiction-based programs in isolation is discouraged, as individuals will deprive themselves of the benefits of conventional treatments and may also be exposed to misinformation by well-meaning individuals in these groups.

Somatic treatments – Vitamin and hormone treatments, electroconvulsive therapy, and other somatic treatments have been tried in uncontrolled studies. Both calcium/vitamin D supplements and hormone replacement therapy have been effective in improving bone mass (Golden, 2003). However, hormone injections also initiate the return of females' menses, thereby falsely representing their return to biological health. Still, none have been shown to have any significant therapeutic value to individuals with AN.

Contraindicated Medications – The use of tricyclic antidepressants (TCA) for adult AN has not produced enough encouraging results, with safety concerns and lack of outcome data that makes application to younger populations problematic (Bailey et al., 2014). Tricyclic antidepressants should be avoided in underweight individuals and in individuals who are at risk for suicide (APA, 2000).

Table 5
Summary of Treatments for Anorexia Nervosa

What Works	
Nutritional rehabilitation	Entails developing meal plans and monitoring intake of adequate nutrition to promote healthy weight gain.
Family psychotherapy	Family members are included in the process to assist in reduction of symptoms and modify maladaptive interpersonal patterns.
In-patient behavioral programs	Individuals are rewarded for engaging in healthy eating and weight-related behaviors.
What Seems to Work	
Cognitive behavioral therapy (CBT)	Needs further study to be well established; it is used to change underlying eating disorder cognitions and behaviors.
Pharmacological treatments	Used primarily after weight restoration to minimize symptoms associated with psychiatric comorbidities.
Not Adequately Tested	
Individual psychotherapy	Controlled trials have not supported this treatment; however, it may be beneficial during the refeeding process and to minimize comorbid symptoms.
What Does Not Work	
Group psychotherapy	May stimulate the transmission of unhealthy techniques among group members, particularly during acute phase of disorder.
12-step programs	Not yet tested for their efficacy; discouraged as a sole treatment.
Tricyclic antidepressants	Tricyclic antidepressants are contraindicated and should be avoided in underweight individuals and in individuals who are at risk for suicide
Somatic treatments	To date, treatments such as vitamin and hormone treatments and electroconvulsive therapy show no therapeutic value.

Bulimia Nervosa (BN)

The primary goal of treatment with individuals with BN is to reduce or eliminate binge eating and purging behavior. According to NIMH (2001), nutritional rehabilitation, psychosocial intervention, and medication management strategies are therefore often used. Specifically, treatment includes establishing regular, non-binge meals, improving attitudes related to the disorder, encouraging healthy but not excessive exercise, and resolving any co-occurring mental health disorders such as anxiety or mood disorders. The treatments most commonly utilized in individuals with BN are listed in Table 6 and described in the paragraphs that follow.

What Works – Evidence-based Treatments

Cognitive behavioral therapy (CBT) – This form of psychotherapy, when specifically directed at BN symptoms and underlying conditions, is the intervention for which there is the most evidence of efficacy. It has been found to lead to significant reductions in binge eating, vomiting, and laxative abuse (Keel &

Haedt, 2008). Some consider CBT the "gold standard" of therapy. It involves a combination of psychoeducation, self-monitoring, adjusting reactions to cues, confronting and restructuring automatic thoughts, problem solving, exposure while preventing response, and preventing relapse (Bulik et al., 2012).

Combined treatments – There is generally a better response to CBT than pharmacotherapy; however, the combination of these two methods has been found to be superior to either alone (APA, 2000).

What Seems to Work

Pharmacological treatments – Individuals with BN are typically more responsive to pharmacologic interventions than individuals with AN (Berkman et al., 2006). For adult BN, SSRIs have produced positive findings with moderate effects on binge/purge frequency and reviews indicate their potential utility with young people (Bailey et al., 2014). However, this needs to be balanced with the lack safety data in this younger population, particularly given the controversy surrounding the use of SSRIs with adolescents and young adults in the depression field (Bailey et al.). CBT, however, appears to be superior to antidepressants; therefore, current recommendations support the use of medications for youth who refuse CBT or who do not have an optimal response to CBT (Lock, La Via & the American Academy of Child and Adolescent Psychiatry [AACAP] Committee on Quality Issues [CQI], 2014).

The SSRI fluoxetine is the only medication approved by the FDA for the treatment of BN in adults (Powers & Bruty, 2008; NIMH, 2011). Pharmacological treatments have been found to be especially effective for individuals with symptoms of depression or anxiety and for those who have not responded well to psychotherapy alone (NIMH, 2001; NIMH, 2011).

Not Adequately Tested

Individual psychotherapy – While there is support for some individual therapies aside from CBT in case studies and reports, the efficacy of these methods has not been supported by controlled trials. When compared to CBT, most short-term trials have been found it to be less effective (Keel & Haedt, 2008, Lock, 2010).

Family therapy – Recently, literature suggests that family therapy may be more beneficial (i.e., lower rates of remission) than individual supportive psychotherapy for young adolescents with a BN diagnosis (Keel & Haedt, 2008; Lock, 2010). However, outcomes should be considered preliminary at this time.

What Does Not Work

12-step programs – Addiction-based programs are not recommended as the sole treatment approach for individuals with BN, as they do not attend to nutritional considerations or behavioral deficits (APA, 2000).

Contraindicated medications – The following medications should not be used to treat individuals with BN:

- **Bupropion** has been associated with seizures in purging individuals with BN and should not be used in this population (APA, 2000).
- **Monoamine oxidase inhibitors (MAOIs)** are also potentially dangerous in individuals with chaotic binging and purging; therefore, their use should be limited (APA, 2000).

Table 6
Summary of Treatments for Bulimia Nervosa

What Works	
Cognitive behavioral therapy (CBT)	The most effective independent treatment option; it is used to change underlying eating disorder cognitions and behaviors.
Combined treatments	A combination of CBT and pharmacotherapy seems to maximize outcomes.
What Seems to Work	
Pharmacological treatments	Antidepressants, namely SSRIs, have effectively reduced binge/purging behaviors, as well as comorbid psychiatric symptoms.
Not Adequately Tested	
Individual psychotherapy	Compared to CBT, few individual therapeutic approaches have been effective in reducing symptoms.
Family therapy	May be more beneficial than individual psychotherapy, but outcomes should be considered preliminary at this time.
What Does Not Work	
Bupropion	Bupropion has been associated with seizures in purging individuals with BN and is contraindicated
Monoamine oxidase inhibitors (MAOIs)	MAOIs are potentially dangerous in individuals with chaotic binging and purging and their use is contraindicated.
12-step programs	Discouraged as a sole treatment because they do not address nutritional or behavioral concerns.

Binge Eating Disorder (BED)

The treatment goals and strategies for BED are similar to those for BN. The primary difference in the two disorders is that individuals with BED may present with difficulties associated with being overweight rather than being malnourished. Consequently, the treatment strategies tend to diverge only in the nature of medical interventions. However, BED has been relatively unexamined in younger patients and no treatments yet meet evidence-based criteria.

What Seems to Work

Cognitive Behavioral Therapy (CBT) – Research in adults supports the effectiveness of CBT for treatment of BED, and CBT is the most studied and well-established psychological treatment for BED (Iacovino et al., 2012).

CBT, both individual and group setting, has been shown to be effective in reducing binge eating (Berkman, et al., 2006). Effective treatments that disrupt the binge-eating cycle and establish a structured pattern of eating allow the individual to experience less hunger, deprivation, and negative feelings about food and eating. Additionally, hunger and negative feelings, which most likely prompt binge eating, must also be reduced, decreasing the frequency of binges (NIMH, 2001).

Interpersonal Psychotherapy (IPT) – Preliminary studies support the use of interpersonal psychotherapy (IPT) to treat BED (Lock, La Via & the American Academy of Child and Adolescent

Psychiatry [AACAP] Committee on Quality Issues [CQI], 2014). The interpersonal model of binge eating asserts that social problems create an environment in which binge eating develops as a coping mechanism, serving to reduce negative affect in response to unfulfilling social interactions (Iacovino et al., 2012). Binge eating may actually worsen interpersonal problems by increasing social isolation and weakening relationships, thereby maintaining the eating disorder. People with BED may binge to cope instead of expressing this negative affect. IPT helps youth acknowledge and express this so that they can better manage negative feelings without turning to food (Iacovino et al.). IPT also seeks to reduce binge eating pathology by supporting the development of healthy interpersonal skills that can replace maladaptive behaviors and promote a positive self-image.

Table 7
Summary of Treatments for Binge Eating Disorder

What Works	
There are no evidence-based practices at this time	
What Seems to Work	
Cognitive behavioral therapy (CBT)	The most effective independent treatment option; it is used to change underlying eating disorder cognitions and behaviors
Interpersonal psychotherapy (IPT)	Attempts to reduce the use of binge eating as a coping mechanism by supporting the development of healthy interpersonal skills
Pharmacological treatments	Antidepressants, namely SSRIs, have effectively reduced binge/purging behaviors, as well as comorbid psychiatric symptoms
Not Adequately Tested	
Dialectical behavior therapy (DBT) Mindfulness and yoga-based interventions	These treatments are suggested as future areas of research
What Does Not Work	
Pharmacological treatments	Although may reduce binge eating in high doses, does not necessarily help with weight loss; in addition, very high placebo response rate and relapse rate
Nutritional rehabilitation and counseling	Although initial weight loss is associated with these treatments, weight is commonly regained
12-step programs	Discouraged as a sole treatment because they do not address nutritional or behavioral concerns

Not Adequately Tested

Mindfulness techniques and dialectical behavior therapy (DBT) have also been suggested as future areas of treatment research for BED (Mazzeo & Bulik, 2008). Furthermore, compared to youth in the control group, youth who participated in a yoga-based intervention employing mindfulness and dissonance-based exercises experienced reductions in body dissatisfaction and uncontrolled eating (Scime & Cook-Cottone,

2008). The newly created diagnostic classification will allow for additional study of CBT from a clinical research perspective.

What Does Not Work

Nutritional rehabilitation and counseling – Restrictive diets used with group behavioral weight control programs have been associated with substantial initial weight loss but are often less effective during or following the refeeding stage. Weight is commonly regained during this period.

12-Step Programs – Discouraged as a sole treatment because many do not address nutritional or behavioral concerns.

Pharmacological treatments – Antidepressants may be used to treat BED and related syndromes. Patients may reduce binge eating, but not necessarily lose weight, while taking high doses of antidepressants (Yager, 2009). However, there is a very high placebo response rate (around 70 percent), and individuals tend to relapse after medication is discontinued.

Cultural Considerations

Individuals with eating disorders represent a wide range of demographics (ADA, 2001). Disorders appear to be more prevalent among Native Americans and in Latinos and Caucasians and less common among Asians and African Americans (APA, 2000). Researchers have also found that African American females are more likely to develop BN than AN and are more likely to purge with laxatives than by vomiting (APA). Moreover, African American male youth engage in BED behaviors more frequently than female Caucasian youth (Johnson, Rohan, & Kirk, 2002). However, methods for assessing disordered eating symptoms in culturally diverse populations are limited (Bardone-Cone & Boyd, 2007), as are evidence-based treatment options (Keel & Haedt, 2008).

The *DSM-5* warns clinicians to consider that certain cultural groups do not utilize mental health services for eating disorders frequently, including Latinos, African Americans, and Asian Americans (APA, 2013). Additionally, clinicians should be aware of different presentations across cultures. Asian populations may be more "fat phobic," but may also complain of gastrointestinal discomfort rather than an eating disorder (APA). Because values concerning weight and shape vary among cultures, clinicians must be mindful of varying standards of beauty, acceptance, and what it means to be "perfect" in the modern world (APA, 2000). It is also important to note that AN is detectable in all socioeconomic classes. Thus, higher socioeconomic status does not appear to be a major factor in the incidence of these disorders, as once was surmised (ADA, 2001).

Males with an eating disorder often go undiagnosed due to their embarrassment about not living up to the image of the ideal male body. In particular, males who binge or overeat compulsively may go undiagnosed, given society's unwillingness to accept such behavior in a male (Knowlton, 1995). Relatively little is known about males with eating disorders; thus, clinicians should be careful not to avoid overlooking eating disorder symptoms in males.

Overview for Families

Table 8 summarizes the primary features of eating disorders for families. Table 9 summarizes signs and symptoms of eating disorders.

Table 8
Summary of Primary Features of Eating Disorders for Families

Disorder	Description of Primary Features
Anorexia Nervosa	Distorted body image • Causes children and adolescents to severely restrict their food intake May lead to: • Significant weight loss, and • Dangerous side-effects including malnutrition and dehydration
Bulimia Nervosa	Excessive eating followed by purging methods like: • Laxatives, • Enemas, • Diuretics, • Vomiting, and/or • Exercising
Binge Eating Disorder	Frequent episodes of out-of-control eating • The youth cannot control his or her eating • The youth eats significantly more than most people would in the same time No purging like in bulimia nervosa New diagnosis in *DSM-5*

Source: APA, 2013.

Table 9
Summary of Signs and Symptoms of Eating Disorders for Families

Disorder	Signs and Symptoms
Anorexia Nervosa	• Perfectionist traits; • Often a high achiever; • Low self-esteem, irrationally believing he or she is fat regardless of how thin he or she becomes; • Desperate need for a feeling of mastery over his or her life; and • Starving oneself, sometimes to the point of seriously damaging one's body, which can lead to death.
Bulimia Nervosa	• Binging on huge quantities of high-caloric food; and/or • Purging calories by self-induced vomiting and often by using laxatives. • The child or adolescent may alternate binges and severe diets and, as a result, have severe weight fluctuations. • Teens may run water while spending long periods of time in the bathroom to hide the signs of vomiting. • Purging may seriously damage health, causing dehydration and hormonal imbalance, depleting important minerals, and damaging vital organs.
Binge Eating Disorder	• The child or adolescent eats copious amounts of food, but does not purge. • Binge eating can lead to future purging.

Source: Rosen and the Committee on Adolescence, 2010.

Resources and Organizations

Academy for Eating Disorders (AED)

https://www.aedweb.org/home

Eating Disorders Coalition for Research, Policy & Action (EDC)

http://www.eatingdisorderscoalition.org/

Eating Disorders Treatment

http://www.eating-disorder.com/

EDReferral.com (Eating Disorder Referral and Information Center)

https://www.edreferral.com/

Johns Hopkins Eating and Weight Disorders Program

https://www.hopkinsmedicine.org/psychiatry/specialty_areas/eating_disorders/index.html

Maudsley Parents

http://www.maudsleyparents.org/

National Association of Anorexia Nervosa and Associated Eating Disorders

http://www.anad.org/

National Eating Disorders Association (NEDA)

Information & Referral Helpline: 800-931-2237

https://www.nationaleatingdisorders.org/

National Institute of Mental Health (NIMH)

https://www.nimh.nih.gov/index.shtml

Society for Adolescent Health and Medicine (SAHM)

https://www.adolescenthealth.org/Home.aspx

Substance Abuse and Mental Health Services Administration (SAMHSA)

National Mental Health Information Center

https://www.samhsa.gov/

Virginia Resources and Organizations

James Madison University

Help Overcome Problems with Eating and Exercise (HOPE)

https://www.jmu.edu/healthcenter/PreventionandEducation/hope-multiregion.shtml

University of Virginia

Elson Student Health Center

http://www.virginia.edu/studenthealth/

Virginia Commonwealth University Health System

Department of Psychiatry

https://psych.vcu.edu/

Virginia Treatment Center for Children (VTCC)

http://www.chrichmond.org/Services/Outpatient-Programs.htm

Virginia Polytechnic Institute and State University (VA Tech)

Cook Counseling Center

http://ucc.vt.edu/self_help_support_stategies/help_eating_disorders.html

References

American Academy of Child and Adolescent Psychiatry (AACAP). (2013). Facts for families: Teenagers with eating disorders. Retrieved from https://www.aacap.org/App_Themes/AACAP/docs/facts_for_families/02_teenagers_with_eating_disorders.pdf

Ackard, D. M., Neumark-Sztainer, D., Hannan, P. J., French, S., & Story, M. (2001). Binge and purge behavior among adolescents: Associations with sexual and physical abuse in a nationally representative sample: The Commonwealth Fund survey. *Child Abuse & Neglect, 25*, 771-785.

American Dietetic Association (ADA). (2001). Position of the American Dietetic Association: Nutrition intervention in the treatment of anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified. *Journal of the American Dietetic Association, 101*(7), 810-819.

American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.) (DSM-5). Washington, DC: Author.

American Psychiatric Association (APA). (2000). *Practice guidelines for the treatment of individuals with eating disorders* (2nd ed.). Washington, DC: Author.

American Psychological Association (APA). (2006). Report of the working group on psychotropic medications for children and adolescents: Psychopharmacological, psychosocial, and combined interventions for childhood disorders: Evidence base, contextual factors, and future directions. Retrieved from http://www.apa.org/pi/families/resources/child-medications.pdf

American Psychological Association HealthCenter. (1998). Eating disorders: Psychotherapy's role in effective treatment, in *How therapy helps: Get the facts.* Retrieved from http://www.healthyplace.com/eating-disorders/menu-id-58. *Not available December 2017.*

Anderson, D., Williamson, D., Duchmann, E., Gleaves, D., & Barbin, J. (1999). Development and validation of a multiaxial treatment outcome measure for eating disorders, *Assessment, 6,* 7-20.

Anorexia Nervosa and Related Eating Disorders, Inc. (ANRED). (2002). *Athletes with eating disorders: An overview*. Retrieved from http://www.anred.com/ath_intro.html. *Not available December 2017*.

Anorexia Nervosa and Related Eating Disorders, Inc. (ANRED). (2005). *Males with eating disorders.* Retrieved from http://www.anred.com/males.html. *Not available December 2017.*

Anorexia Nervosa and Related Eating Disorders, Inc. (ANRED). (2004). *Statistics: How many people have eating disorders?* Retrieved from http://www.anred.com/stats.html. *Not available December 2017.*

Austin, S. B., Ziyadeh, N., Kahn, J. A., Camargo, C. A., Colditz, G. A., & Field A. E. (2004). Sexual orientation, weight concerns, and eating-disordered behaviors in adolescent girls and boys. *Journal of American Academy of Child and Adolescent Psychiatry, 43*(9), 1115-1123.

Bailey, A. P., Parker, A. G., Colautti, L. A., Hart, L. M., Liu, P., & Hetrick, S. E. (2014). Mapping the evidence for the prevention and treatment of eating disorders in young people. *Journal of Eating Disorders, 2*(5).

Bardone-Cone, A., & Boyd, C. (2007). Psychometric properties of eating disorder instruments in black and white young women: Internal consistency, temporal stability, and validity. *Psychological Assessment, 19*(3), 356-362.

Berkman, N., Bulik, C., Brownley, K., Lohr, K., Sedway, J., & Rooks, A. (2006). Management of eating disorders. Evidence report/technology assessment No. 135, RTI International-University of North Carolina Evidence-Based Practice Center. Retrieved from http://www.maudsleyparents.org/images/eatdis-1.pdf

Bulik, C. (2004). Genetic and biological risk factors. In J. K. Thompson (Ed.), *Handbook of eating disorders and obesity* (pp. 3-16). Hoboken, NJ: John Wiley & Sons.

Bulik, C., Berkman, N., Brownley, K., Sedway, J., & Lohr, K. (2007). Anorexia nervosa treatment: A systematic review of randomized controlled trials. *International Journal of Eating Disorders, 40*, 310-320.

Bulik, C., Marcus, M., Zerwas, S., Levine, M., La Via, M. (2012). The changing "weightscape" of bulimia nervosa. *American Journal of Psychiatry, 169*(10), 1031-1036.

Butler, A., Chapman, J., Forman, E., & Beck, A. (2005). The empirical status of cognitive-behavioral therapy: A review of meta-analyses. *Clinical Psychology Review, 26*, 17-31.

Cassin, S., & von Ranson, K. (2005). Personality and eating disorders: A decade in review. *Clinical Psychology Review, 25*(7), 895-916.

Currin, L., Schmidt, U., Treasure, J., & Jick, H. (2005). Time trends in eating disorders incidence. *British Journal of Psychiatry, 186*, 132-135.

Derenne, J., & Beresin, E. (2006). Body image, media, and eating disorders. *Academic Psychiatry, 30*, 257-261

Eating Disorders Coalition (EDC). (n.d.). Facts about eating disorders: What the research shows. Retrieved from http://eatingdisorderscoalition.org.s208556.gridserver.com/couch/uploads/file/Eating%20Disorders%20Fact%20Sheet.pdf

Fairburn, C., & Beglin, S. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders*, *16*, 363-370.

Fairburn, C., & Cooper, Z. (1993). The eating disorder examination. In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating: Nature, assessment and treatment* (12th ed.) (pp. 317-360). New York: Guilford.

Fichter, M., & Quadflieg, N. (2004). Twelve-year course and outcome of bulimia nervosa. *Psychological Medicine*, *34*, 1395-1406.

Ferguson, C. J., Munoz, M. E., Adolfo, G., & Galindo, M. (2014). Concurrent and prospective analyses of peer, television and social media influences on body dissatisfaction, eating disorder symptoms and life satisfaction in adolescent girls. *Journal of Youth and Adolescence, 43*(1), 1-14.

Garner, D. (2004). *Eating disorder inventory—3. Professional manual*. Lutz, FL: Psychological Assessment Resources.

Garner, D., & Garfinkel, P. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, *9*, 273-279.

Golden, N. (2003). Eating disorders in adolescence and their sequelae. *Best Practice & Research Clinical Obstetrics & Gynecology, 17*, 57-73.
Gormally, J., Black, S., Daston, S., & Rardin, D. (1982). The assessment of binge eating: Eating severity among obese persons. *Addictive Behavior, 7*, 47-55.
Gonzalez, A., Kohn, M., & Clarke, S. (2007). Eating disorders in adolescents. *Australian Family Physician, 36*(8), 614-619.
Gowers, S. (2006). Evidence based research in CBT with adolescent eating disorders. *Child and Adolescent Mental Health, 11*(1), 9-12.
Ham, B. (2004). Eating disorder behaviors linked to suicide risks. Retrieved from http://www3.scienceblog.com/community/older/2004/2/20041606.shtml
Herpertz-Dahlmann, B. (2008). Adolescent eating disorders: Definitions, symptomatology, epidemiology, and comorbidity. *Child and Adolescent Psychiatric Clinics of North America, 18*, 31-47.
Herpertz-Dahlmann, B., & Salbach-Andrae, H. (2008). Overview of treatment modalities in adolescent anorexia nervosa. *Child and Adolescent Psychiatric Clinics of North America, 18*, 131-145.
Herpertz-Dahlmann, B., Müller, B., Herpertz, S., Heussen, N., Hebebrand, J., & Remschmidt, H. (2001). Prospective 10-year follow-up in adolescent anorexia nervosa—Course, outcome, psychiatric comorbidity, and psychosocial adaptation. *Journal of Child Psychology and Psychiatry, 42*(5), 603-612.
Hilbert, A. (2013). Cognitive-behavioral therapy for binge eating disorder in adolescents: Study protocol for a randomized controlled trial. *Trials, 14*, 312.
Hoek, H. (2006). Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Current Opinion in Psychiatry, 19*(4), 389-394.
House, J., Eisler, I., Simic, M., & Micali, N. (2008). Diagnosing eating disorders in adolescents: A comparison of the eating disorder examination and the development and well-being assessment. *International Journal of Eating Disorders, 41*, 535-541.
Howell, M., Schenck, C., & Crow, S. (2009). A review of nighttime eating disorders. *Sleep Medicine Reviews, 13*, 23-34.
Iacovino, J. M., Gredysa, D. M., Altman, M., & Wilfley, D. E. (2012). Psychological treatments for binge eating disorder. *Current Psychiatry Reports, 14*(4), 432-446.
International Eating Disorder Referral Organization. (n.d.). Treatment—There is hope. Retrieved from https://www.edreferral.com/treatments
Johnson, W., Rohan, K., & Kirck, A. (2002). Prevalence and correlates of binge eating in White and African American adolescents. *Eating Behaviors, 3*(2), 179-189.
Keel, P., & Haedt, A. (2008). Evidence-based psychosocial treatments for eating problems and eating disorders. *Journal of Clinical Child and Adolescent Psychology, 37*(1), 39-61.
Kenny, M. C., Ward-Lichterman, M., & Abdelmonem, M. H. (2014). The expansion and clarification of feeding and eating disorders in the DSM-5. *The Professional Counselor, 4*, 246-256.
Keys, A. (1950). The residues of malnutrition and starvation. *Science, 112*(2909), 371-373.
Klump, K., Strober, M., Bulik, C., Thornton, L., Johnson, C., & Devlin, B. (2004). Personality characteristics of women before and after recovery from an eating disorder. *Psychological Medicine, 34*(8), 1407-1418.
Knowlton, L. (1995). Eating disorders in males. *Psychiatric Times*, Vol. XII.
Kuo, I. (2006). Fluoxetine for anorexia nervosa following weight restoration: Psychiatry viewpoint. *Medscape Psychiatry & Mental Health, 11*(2).
Kutlesic, V., Williamson, D., Gleaves, D., Barbin, J., & Murphy-Eberenz, K. (1998). The interview for the diagnosis of eating disorders-IV: Application to DSM-IV diagnostic criteria. *Psychological Assessment, 10*, 41-48.
Levine, M., & Maine, M. (2005). Eating disorders can be prevented. National Eating Disorders Association. Retrieved from https://www.chapman.edu/students/health-and-safety/psychological-counseling/_files/eating-disorder-files/10.50eds-Pprev.pdf
Lock, J., (2010). Treatment of adolescent eating disorders: Progress and challenges. *Minerva Psichiatrica, 51*(3), 207-216.
Lock, J., Le Grange, D., Agras, W. S., Moye, A., Bryson, S. W., & Jo, B. (2010). Randomized clinical trial comparing family-based treatment to adolescent focused individual therapy for adolescents with anorexia nervosa. *Archives of General Psychiatry, 67*(10), 1025-1032.
Lock, J., La Via, M., & the American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI). (2014). *Practice parameter for the assessment and treatment of children and adolescents with eating disorders*. Retrieved from

http://www.aacap.org/App_Themes/AACAP/docs/practice_parameters/Eating%20Disorders%20JAACAP%20Submit%20final.pdf

Maier, A. (2003). Myths and facts about eating disorders: What we know from research and treatment. Congressional Briefing, U.S. House of Representatives.

Mancilla-Díaz, J. M., López-Aguilar, X., Franco-Paredes, K., Alvarez-Rayón, G., Vázquez-Arévalo, R., Ocampo Téllez-Girón, M. T., & Amaya-Hernández, A. (2012). Role of peer influence and thin-ideal internalization on body dissatisfaction and disordered eating in Mexican girls. *Revista Colombiana de Psicología, 21*(2), 343-353.

Mariano, P., Watson, H., Leach, D., McCormack, J., & Forbes, D. (2013). Parent-child concordance in reporting of child eating disorder pathology as assessed by the eating disorder examination. *International Journal of Eating Disorders, 46*(6), 617-625.

Mazzeo, S., & Bulik, C. (2008). Environmental and genetic risk factors for eating disorders: What the clinician needs to know. *Child and Adolescent Psychiatric Clinics of North America, 18,* 67-82.

Medscape Internal Medicine. (2006). Eating disorders and the challenge of treatment: An expert interview with Nancy D. Berkman, Ph.D. *Medscape*, *8*(2).

Moradi, B., Dirks, D., & Matteson, A. (2005). Roles of sexual objectification experiences and internalization of standards of beauty in eating disorder symptomatology: A test and extension of objectification theory. *Journal of Counseling Psychology, 52*(3), 420-428.

Moya, T., Fleitlich-Bilyk, B., Goodman, R., Nogueira, F. C., Focchi, P. S., Nicoletti, M., & Neto, F. L. (2005). The eating disorders section of the Development and Well-Being Assessment (DAWBA): Development and validation. *Revista Brasileira de Psiquiatria*, *27*(1), 25-31.

Murphy, M., Cowan, R., & Sederer, L. (2001). *Blueprints in psychiatry* (2nd ed.). Malden, MA: Blackwell Science.

Murray, S., Thornton, C., & Wallis, A. (2012). A thorn in the side of evidence-based treatment for adolescent anorexia nervosa. *Australian and New Zealand Journal of Psychiatry, 46*(11), 1026-1028.

Natenshon, A. (2016). When young kids have eating disorders. International Eating Disorder Referral Organization. EDReferral.com. Retrieved from https://www.edreferral.com/blog/adolescents-and-children-and-eating-disorders-134

National Association of Anorexia Nervosa and Associated Disorders (ANAD). (n.d.). Eating disorders statistics. Retrieved from http://www.anad.org/get-information/about-eating-disorders/eating-disorders-statistics/

National Eating Disorders Association (NEDA). (2002). Dental complications of eating disorders: Information for dental practitioners. Retrieved from https://www.nationaleatingdisorders.org/dental-complications-eating-disorders

National Institute of Mental Health (NIMH). (2001). *Eating disorders: Facts about eating disorders and the search for solutions*, NIH Publication No. 01-4901. Retrieved from http://www.carf.org/WorkArea/DownloadAsset.aspx?id=22448. *Not available December 2017.*

National Institute of Mental Health (NIMH). (2011). *Eating disorders*. NIH Publication No. 11 -490. Retrieved from http://www.nimh.nih.gov/health/publications/eating-disorders/eating-disorders.pdf. *Not available December 2017.*

Neumark-Sztainer, D., Wall, M., Haines, J., Story, M., Sherwood, N., & van den Berg, P. (2007). Shared risk and protective factors for overweight and disordered eating in adolescents. *American Journal of Preventive Medicine, 33*(5), 359-369.

Nicholls, D., & Viner, R. (2005). Eating disorders and weight problems. *BMJ, 330*(7497), 950-953.

Pompili, M., Girardi, P., Tatarelli, G., Ruberto, A., & Tatarelli, R. (2006). Suicide and attempted suicide in eating disorders, obesity and weight–image concern. *Eating Behaviors, 7*, 384-394.

Powers, P., & Bruty, H. (2008). Pharmacotherapy for eating disorders and obesity. *Child and Adolescent Psychiatric Clinics of North America, 18,* 175-187.

Rosen, D., & the Committee on Adolescence. (2010). Identification and management of eating disorders in children and adolescents. *Pediatrics, 126*, 1240-1253.

Sanci, L., Coffey, C., Olsson, C., Reid, S., Carlin, J., & Patton, G. (2008). Childhood sexual abuse and eating disorders in females: Findings from the Victorian adolescent health cohort study. *Archives of Pediatric and Adolescent Medicine, 162*(3), 261-267.

Sandberg, K., & Erford, B. T. (2013). choosing assessment instruments for bulimia practice and outcome research. *Journal of Counseling & Development, 91*, 359-366.

Scime, M., & Cook-Cottone, C. (2008). Primary prevention of eating disorders: A constructivist integration of mind and body strategies. *International Journal of Eating Disorders, 41*, 134-142.

Scudder, J. (2011). Eating disorders in pediatric primary care, an expert interview with David S. Rosen, MD, MPH. Retrieved from http://www.medscape.com/viewarticle/735215_3

Spitzer, R., Yanovski, S., Wadden, T., Wing, R., Marcus, M. (1993). Binge eating disorder: Its further validation in a multisite study. *International Journal of Eating Disorders, 13(2),* 137-153.

Steinhausen, H. (2008). Outcome of eating disorders. *Child and Adolescent Psychiatric Clinics of North America, 18,* 225-242.

Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*, 825-848.

Stice, E., Telch, C., & Rizvi, S. (2000). Development and validation of the eating disorder diagnostic scale: A brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment, 12,* 123-131.

Striegel-Moore, R., & Bulik, C. (2007). Risk factors for eating disorders. *American Psychologist 62(3),* 181-198.

Stunkard, A., & Messick, S. (1985). The three-factor eating questionnaire to measure dietary restraint and hunger. *Journal of Psychosomatic Research, 29*, 71-83.

Swinbourne, J., Hunt, C., Abbott, M., Russell, J., Clare, T., & Touyz, S. (2012). The comorbidity between eating disorders and anxiety disorders: Prevalence in an eating disorder sample and anxiety disorder sample. *Australian and New Zealand Journal of Psychiatry, 46*(2), 118-131.

Thelen, M., Farmer, J., Wonderlich, S., & Smith, M. (1991). A revision of the bulimia test: The BULIT-R. psychological assessment. *A Journal of Consulting and Clinical Psychology, 3*, 119-124.

Torres-McGehee, T. M., Monsma, E. V., Gay, J. L., Minton, D. M., & Mady-Foster, A. N. (2011). Prevalence of eating disorder risk and body image distortion among national collegiate athletic association division I varsity equestrian athletes. *Journal of Athletic Training, 46*(4), 431-437.

U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General*. Rockville, MD.

University of Virginia Health System. (2009). Conditions and treatment: Anorexia nervosa. Retrieved from http://uvahealth.com/services/childrens-hospital/conditions-treatments/atproxiedcontent.2009-12-16.3557926620. *Not available December 2017.*

Wilson, G. T., & Fairburn, C. G. (1998). Treatments for eating disorders. In P. E. Nathan, & J. M. Gorman (Eds.), *A guide to treatments that work.* Oxford: Oxford University.

Williams, G., Power, K., Miller, H., Freeman, C., Yellowlees, A. (1994). Development and validation of the Stirling eating disorders scales. *International Journal of Eating Disorders, 16*(1), 35-43

Yager, J. (2009). binge eating disorder: The search for better treatments. *FOCUS, 7*, 499-501.