EATING DISORDERS AND SUICIDE

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ABSTRACT

Eating disorders includes a group of specific diagnoses that are characterized by a
disturbance in eating and one’s relationship with food that causes a spectrum of physical
and emotional consequences that ultimately have a significant impact on one’s
psychosocial functioning. This review serves to describe the definitions and prevalence in
the adolescent population, as well as, illuminate the relationship between suicide and
eating disorders.

INTRODUCTION

Eating disorders (ED) including anorexia nervosa (AN), bulimia nervosa (BN), binge eating
disorder and eating disorder NOS. There are specific subtypes in these categories. The
classification and diagnoses of eating disorders changed in 2013 with the revised edition of
DSM, 5th ed. (1). The diagnostic criteria for AN and BN were broadened, as well as the
inclusion of binge eating disorder (BED) (1).

The epidemiology for eating disorders in the pediatric population is changing with higher
rates of eating disorders in younger children, boys, and minority groups (2, 3). The lifetime
prevalence of AN is 0.5-2.0% (4) with a peak age of onset 13-18 years of age (5). The
lifetime prevalence of BN is higher, 0.9-3% and age of onset is 16-17 years of age (6, 7). The
lifetime prevalence of eating disorders NOS, compromising the most common eating disorder

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diagnosis in adolescents, is 4.8% (4, 8). Although males are less affected by eating disorders compared to their female counterparts, the revised edition of DSM-V allows for a more specific diagnosis to be made as there is elimination of amenorrhea and changing of the weight criterion (9). The rate ratio of lifetime prevalence of anorexia and bulimia nervosa in males versus females is often reported to be equal or less than 1:10 (10).

Western culture has an obsession with dieting, weight, exercise and body image. During the adolescence, there is a rapid growth of physical and cognitive development which predisposes teens to a unique vulnerability. In an age of social media, this vulnerability and societal trend of weight obsession, it is clear adolescents are at risk for developing an eating disorder. It is important for caregivers and clinicians to be aware of the spectrum of eating disorders and the varied presentation of disordered eating. Pediatricians are often the first health care provider diagnosing these disorders. An ED should be suspected in any patient who presents with weight loss, unexplained growth stunting or pubertal delay, restrictive or abnormal eating behaviors, recurrent vomiting, excessive exercise, trouble gaining weight, or body image concerns (2). As mentioned previously, the subthreshold of the clinical diagnosis of AN and BN is eating disorder NOS. It represents the largest population of the disordered eating among adolescents. Having this diagnosis characterized in DSM-V does help to broaden the ability to identify adolescents with disordered eating; however there is a large population of disordered eating behaviors that does not necessarily meet the criteria for a diagnosis (11).

It is important to still recognize disordered eating as it may be a represent a coping mechanism or be a part of an underlying psychiatric condition such as anxiety or depression (11). A screening tool, the brief SCOFF questionnaire can be used in the primary care setting for ED screening in adolescents (see Table 1) (12).

### Table 1. The SCOFF questionnaire

<table>
<thead>
<tr>
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<th>Question</th>
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<tbody>
<tr>
<td>1</td>
<td>Do you make yourself Sick because you feel uncomfortably full?</td>
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<tr>
<td>2</td>
<td>Do you worry you have lost Control over how much you eat?</td>
</tr>
<tr>
<td>3</td>
<td>Have you recently lost more than One stone (14 lb/6.3 kg) in a 3 month period?</td>
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<tr>
<td>4</td>
<td>Do you believe yourself to be Fat when others say you are too thin?</td>
</tr>
<tr>
<td>5</td>
<td>Would you say that Food dominates your life?</td>
</tr>
</tbody>
</table>

One point for every “yes”; a score of > or equal to 2 indicates a likely case of anorexia nervosa or bulimia.

When diagnosing an eating disorder it is imperative to not only screen for disordered eating behavior, but to assess overall mental health. It is difficult to determine often the relationship of a comorbid psychiatric disorder and the eating disorder and there is a paucity of research in the adolescent field concerning this relationship. What has shown; however, is that depression is a significant factor in eating disorders with either anorexia nervosa or bulimia nervosa (13). The current theory is that depression is a psychiatric comorbidity of the eating disorder versus that depression is secondary to malnutrition or as a result of the eating disorder (14).

As is screening for eating disorders is extremely important, screening for depression among children and adolescents is also extremely important considering the widespread prevalence and impact it can have on an individual and family without proper recognition and
treatment. The American Medical ASsociations’s Guideline for Adolescent Preventive Services (GAPS) and Bright Futures suggest that primary care providers in pediatric settings begin screening for depression at age 11 years and continue to do so annually thereafter (15).

Depression screening can be a part of the psychosocial evaluation. The “HEEADSSS” acronym can encompass factors of such an evaluation including Home, Education and Employment, Eating, Activities with peers, Drugs, Sexual activity, Suicide, Depression and Safety. The acronym easily allows the practitioner to ensure that all aspects of the psychosocial evaluation are included. It is important to note that in the “HEEADSSS” exam “eating” is also included to represent screening for eating disorders, food insecurity and healthy diets (16). When asking the adolescent specific questions regarding depression and suicide one may state: “Have you had any thoughts of wanting to hurt yourself”; “Have you had any thoughts of not wanting to be here anymore”; and if so, “Have you had a plan?” If there is concern of suicidality the appropriate steps need to be taken including a safety plan, possible hospitalization and inquiring if there are firearms in the home.

The Patient Health Questionnaire (PHQ-9) is an easy to administer, short screening tool that can be given in the clinical setting. It consists of nine items related to major depression. Although it was developed for use in adults, it has shown evidence for its applicability in the adolescent population (17). The PHQ is free and available to the public (http://www.agencymeddirectors.wa.gov/Files/depressoverview.pdf).

While screening for depression is recommended for all children and adolescents, it is imperative when evaluating patients with a known or suspected eating disorder. Research shows that depression plays a central role in suicidality in eating disordered adolescents (14). Suicidality represents associated thoughts and behaviors which encompass a spectrum from contemplating suicide to suicidal attempts to completed suicide. Understanding the relationship between suicide and eating disorders is extremely important because the rate of suicide is much higher in adolescents and adults with eating disorders. A long term study found that eating disorders in adolescents constitute a specific risk factor for suicide later in life thus reinforcing the need for screening for disordered eating behavior at an early age (18).

Suicide is the second leading cause of death in patients with eating disorders. Suicide accounts for more than 25% of all fatalities in AN (19); the rates are lower in BN. Suicidal behavior is common in people with eating disorder with rates for at least one attempted suicide ranging from from 5.7% in anorexia nervosa to 28% in bulimia nervosa (20). In 2003 Keel and colleagues reported that patients with AN have a more than 50-fold increase in risk of completed suicide compared with the general population (21). There is also an increase risk of suicide in patients with bulimia nervosa, but there does not seem to be an increased risk of suicide in patients with binge-eating disorder (22).

In a larger group of patients, there is an increased risk of suicide in patients diagnosed with eating disorder not otherwise specified. The question arises as to what characteristics of patients pose the greatest risk of suicide among those diagnosed with an eating disorder. This question was studied by Potzky and others in 2014. In a patient population of 1,436 patients with a diagnosis of an eating disorder, 11.8% had at least one suicide attempt. Furthermore, 43.5% had lifetime prevalence of suicidal thoughts. Patients with the highest risk of suicide attempts were patients with bulimia nervosa, followed by patients with anorexia nervosa (binge-purging type). There was significant correlation between symptoms of depression and purging behavior (23).
Considering the well-documented positive correlation between suicidality and eating disorders, it is imperative that practitioners consider this during their evaluation with patients. Assessing other psychiatric morbidities specifically depressive symptoms can alert clinicians to patients who are at higher risk for suicide, especially if the patient has a history or is currently binging and purging. Self-injurious behavior has also been shown to be related to eating disorders. Similar to the relationship between suicide and eating disorders, there is a need for further research; however, the causative factors involved in the relationship between self-injurious behavior and eating disorders include impulsivity, obsessive-compulsive characteristics, affect dysregulation, dissociation, self-criticizing cognitive style, and the need for control. Early trauma such as childhood sexual abuse may also contribute to the development of this association.

Early recognition and treatment is important to prevent long-term consequences of the disorders. Treatment of eating disorders is a multidisciplinary approach. Patients can be cared for in the outpatient clinic setting (which can include intensive outpatient treatment). If patients have a medical indication for hospitalization, they are often hospitalized for medical stabilization and then cared for either in an inpatient psychiatric hospital or possible partial hospitalization. Residential programs have increased in number over the last several years and provide a homelike environment that can care for patients requiring more intense treatment than an outpatient clinical setting, but do not require the medical stabilization in a hospital. In 2005, the American Academy of Pediatrics released criteria for inpatient hospitalization in patients with Anorexia nervosa and Bulimia nervosa (see Table 2).

**Table 2. American Academy of Pediatrics criteria for inpatient hospitalization in eating disorders**

<table>
<thead>
<tr>
<th>Anorexia nervosa</th>
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<tbody>
<tr>
<td>Heart rate &lt;50 beats/min daytime; &lt;45 beats/min nighttime</td>
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<tr>
<td>Systolic blood pressure &lt;90 mmHg</td>
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<tr>
<td>Orthostatic changes in pulse (&gt;20 beats/min) or blood pressure (&gt;10mmHg)</td>
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<tr>
<td>Arrhythmia</td>
</tr>
<tr>
<td>Temperature &lt;96 degrees F</td>
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<tr>
<td>&lt;75% ideal body weight or ongoing weight loss despite intensive management</td>
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<tr>
<td>Body fat &lt;10%</td>
</tr>
<tr>
<td>Refusal to eat</td>
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<tr>
<td>Failure to respond to outpatient treatment</td>
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<table>
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<tr>
<th>Bulimia nervosa</th>
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<tr>
<td>Syncope</td>
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<tr>
<td>Serum potassium &lt;3.2 mmol/L</td>
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<tr>
<td>Serum chloride &lt;88 mmol/L</td>
</tr>
<tr>
<td>Esophageal tears</td>
</tr>
<tr>
<td>Cardiac arrhythmias including prolonged QTc</td>
</tr>
<tr>
<td>Hypothermia</td>
</tr>
<tr>
<td>Suicide risk</td>
</tr>
<tr>
<td>Intractable vomiting</td>
</tr>
<tr>
<td>Hematemesis</td>
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<tr>
<td>Failure to respond to outpatient treatment</td>
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As mentioned previously, treatment for eating disorders is a multidisciplinary approach including the care of a physician or medical provider, dietician and/or psychologist or therapist. The forms of psychotherapy are individual therapy, cognitive based therapy, and family based therapy. Research has shown family based therapy to be the most effective treatment in the adolescent and young adult anorexia nervosa populations (25). Family based therapy gives the main role of bringing a child back to health to the family and the therapists and medical providers are consultants to direct the family through treatment.

There are few studies demonstrating a strong role for pharmacological agents in the treatment of eating disorders. There have been adult trials showing benefit with the use of antidepressants, but research is needed to demonstrate the efficacy in children and adolescents (26). Medication does play an important, evidence based role when treating comorbid conditions such as depression.

Screening and early recognition is key for children and adolescents, specifically in the primary care setting. Considering the significant role of depression, and other comorbid conditions, it is also important to include screening for depression in the psychosocial evaluation. With research showing such a close relationship between suicide and the presence of depression with a coexisting eating disorder, it is imperative to identify these disorders and seek intervention. Future research is needed to better define these relationships as well as to provide effective treatment.

REFERENCES