



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.2545822>Available online at: <http://www.iajps.com>

Review Article

EATING DISORDERS IN CHILDREN

Abdullah Waheed Calacattawi ¹, Salma Zaki Jastaniah ², Sahar Ghazi Almatrafi ³,
Moatasem Mohammed Modhish ⁴, Abdulrahman Abdulaziz Kaki ⁵, Rayed Abdullah
alosaimi ², Ibrahim Abdullah J Sumili ⁶, Mohammid Abdullah A Alzain ⁷, Rakan Tariq
alrfaai ⁸, Doha Abdulrazak Makkawi ⁹, Ayad Yousif M Alahmadi ¹⁰

¹King Abdulaziz University, ²Umm AlQura University, ³Pediatric resident, East Jeddah hospital,
⁴October 6 University in Egypt, ⁵Ohud Hospital in Al Madinah, ⁶Jazan University, ⁷Prince Saud
Bin Jalawai Hospital, ⁸Maastricht University, ⁹Al-Noor Specialist Hospital.

Abstract:

Introduction: Upsurges in the incidence and prevalence of eating disorder such as anorexia nervosa (AN), bulimia nervosa (BN), and other eating disorders in kids and adolescents make it highly important that pediatricians be familiar with early screening and proper treatment of these clinical conditions. Results of epidemiologic studies have shown that the numbers of kids and adolescents with eating disorders have increased constantly since the 1950s. Only in the last decade, the prevalence of obesity in children and adolescents has increased significantly, accompanied by further emphasis on dieting and weight loss among children and adolescents. The epidemiology of eating disorders has slowly modified; there is an increasing prevalence of eating disorders in men and in minor populations in the US and worldwide. Of specific importance is the growing prevalence of eating disorders at progressively younger ages. A new analysis by the Agency for Healthcare Research and Quality revealed that from 1999 to 2006, hospitalizations for eating disorders increased most rapidly for children younger than twelve years. It is projected that about less than one percent of adolescent girls in the US have AN, that approximately one to two percent meet diagnostic criteria for BN, and that up to five percent to ten percent of all cases of eating disorders occur in males.

Aim of work: In this review, we will discuss eating disorders in children. **Methodology:** We did a systematic search for eating disorders in children using PubMed search engine (<http://www.ncbi.nlm.nih.gov/>) and Google Scholar search engine (<https://scholar.google.com>). All relevant studies were retrieved and discussed. We only included full articles. **Conclusions:** There has been an increase in the incidence and prevalence of eating disorders in children and adolescents in recent decades, making it critical for pediatricians to take into consideration these clinical conditions in appropriate clinical settings, to assess patients suspected of having these disorders, and to manage patients in whom eating disorders are diagnosed. We included a discussion of diagnostic criteria and outlines the initial evaluation of the patient with disordered eating. Complications of eating disorders are variable and could affect any organ system, therefore careful monitoring for these complications is needed and recommended. The range of management options, including medications. Pediatricians are advised to advocate for legislation and policies that make sure proper services for patients with eating disorders, including medical care, nutritional intervention, mental health treatment, and care coordination

Key words: Eating disorders, presentation, management, recent advances, children.

Corresponding author:

Abdullah Waheed Calacattawi,
King Abdulaziz University.

QR code



Please cite this article in press Abdullah Waheed Calacattawi et al., *Eating Disorders in Children.*, Indo Am. J. P. Sci, 2019; 06(01).

INTRODUCTION:

Upsurges in the incidence and prevalence of eating disorder such as anorexia nervosa (AN), bulimia nervosa (BN), and other eating disorders in kids and adolescents make it highly important that pediatricians be familiar with early screening and proper treatment of these clinical conditions. Results of epidemiologic studies have shown that the numbers of kids and adolescents with eating disorders have increased constantly since the 1950s. [1-2] Only in the last decade, the prevalence of obesity in children and adolescents has increased significantly, [3-4] accompanied by further emphasis on dieting and weight loss among children and adolescents. [5]

The epidemiology of eating disorders has slowly modified; there is an increasing prevalence of eating disorders in men [6] and in minor populations in the US [7] and worldwide. [8] Of specific importance is the growing prevalence of eating disorders at progressively younger ages. [9] A new analysis by the Agency for Healthcare Research and Quality revealed that from 1999 to 2006, hospitalizations for eating disorders increased most rapidly for children younger than twelve years. It is projected that about less than one percent of adolescent girls in the US have AN, that approximately one to two percent meet diagnostic criteria for BN, and that up to five percent to ten percent of all cases of eating disorders occur in males.

In this review, we will discuss the most recent evidence regarding eating disorders in children.

METHODOLOGY:

We did a systematic search for eating disorders in children using PubMed search engine (<http://www.ncbi.nlm.nih.gov/>) and Google Scholar search engine (<https://scholar.google.com>). All relevant studies were retrieved and discussed. We only included full articles.

The terms used in the search were: eating disorders, presentation, management, recent advances, children

What are eating disorders?

DSM-IV-TR for AN or BN and are categorized as having “partial syndromes” or “eating disorder not otherwise specified” (ED NOS). [10] There are more patients with ED NOS than there are patients with AN or BN; the prevalence is suggested to be between Less than one percent and fourteen percent, depending on the definition used. These patients usually have the same physical and psychological

outcomes as do those who reach the threshold for diagnosis of AN or BN. [11] Athletes and performers, specifically those who participate in sports and activities that reward a lean body habitus could be at more risk of developing partial syndrome eating disorders. [12]

The cause of eating disorders is believed to be multifactorial, and there is more evidence from both family and twin studies for a strong genetic part that is shared between AN and BN. The mechanism(s) by which genetic factors affect risk have not been eliminated, however different hypotheses have been suggested. Genetic predisposition to various trait disturbances such as behavioral rigidity, perfectionism, or harm avoidance may be more salient than genetic influences on eating, hunger, or satiety. [13]

Dieting has also been associated as a potent proximal risk factor in the development of disordered eating and eating disorders. In a study, dieters at 5-year follow-up were at significantly more risk of disordered eating behaviors than nondieters and were also at increased risk of obesity as well. In another study, dieters were five times more likely to have an eating disorder and severe dieters were eighteen times more likely to an eating disorder than nondieters. [14]

SCREENING FOR EATING DISORDERS IN PRACTICE:

Primary care physicians are in an exclusive position to check and diagnose the onset of eating problems as early as possible and to stop their progress. Pediatricians should screen for eating disorders annually. The *Bright Futures* guidelines add examples for tackling this matter with adolescents of different ages. [15] The SCOFF questionnaire, although validated only in adults, could provide a framework for screening.56 Weight, height, and BMI should be determined regularly and plotted on appropriate growth charts. Deviations from normal are easier to check visually, because nutritional insufficiency may be manifest by falloff in either height or weight percentiles rather than actual weight loss.

INITIAL EVALUATION OF THE PATIENT WITH DISORDERED EATING:

When screening is suspicious of an eating disorder, starting evaluation involves confirming the diagnosis,

assessing medical and nutritional status, determining severity, and start psychosocial assessments. This extensive assessment is usually conducted in the pediatric primary care setting, and primary care clinicians who feel competent and comfortable in performing this assessment are encouraged to do so. Others should refer to proper medical subspecialists and mental health personnel to make sure that a complete evaluation is done. Eating disorders is believed to affect every organ system and the medical complications could serious or even life-threatening this is why an extensive history should be taken into consideration and a comprehensive physical examination should be done. The most often seen medical complications are listed in Table 6 and are detailed in the following section.

Most laboratory tests will be normal in patients with eating disorders; but, these tests cannot exclude serious medical illness or medical instability. yet, an initial laboratory evaluation should involve a complete blood cell count; measurement of serum electrolytes, calcium, magnesium, and glucose; liver function tests; urinalysis; and measurement of thyrotropin level.

MEDICAL COMPLICATIONS IN PATIENTS WITH EATING DISORDERS:

Major clinical complications are observed in both outpatients and inpatients. Most of the medical complications of eating disorders resolve with refeeding and/or resolution of purging. [16] But, there is increasing concern that some complications— especially growth retardation, structural brain changes, and low bone mineral density—could, with time, become irreversible. Malnutrition causes many of the somatic symptoms seen initially, and these variations are frequently adaptive to the associated energy deficits. Adaptation fails eventually and signs and symptoms indicate the inability to compensate for insufficient nutrition.

Common cardiac signs and symptoms consist of orthostasis with blood pressure and/or pulse changes, bradycardia, and poor peripheral perfusion characterized by cold extremities, delayed capillary refill, and sometimes acrocyanosis. Conduction abnormalities could result because of myocardial atrophy and are believed to be the most common proximal cause of death with AN. Repolarization abnormalities, characterized by QTc prolongation and/or increased QT dispersion, have been reported with commonly variable prevalence and seem to be more frequent in older patients and with increasing duration of illness. [17] Repolarization abnormalities are hypothetically life threatening and should be

treated immediately.

TREATMENT CONTINUUM FOR CHILDREN AND ADOLESCENTS WITH EATING DISORDERS:

Many adolescent patients with eating disorders will be managed in outpatient clinics. Pediatricians play an essential role in the treating these patients, evaluating management progress, screening for and managing medical complications, and coordinating care with nutrition and mental health colleagues. Some pediatricians in primary care practice will feel comfortable in coordinating care; others will choose to refer some or all patients with eating disorders to those with special expertise. Depending on the availability of local resources, these health care physicians could be a specialty eating disorders program.

Collaborative Outpatient Care

Many kids and adolescents with eating disorders will be treated in an outpatient clinic by a multidisciplinary team coordinated by a pediatrician or medical subspecialist with expertise in the care of children and adolescents with eating disorders.

It is generally agreed on that medical stabilization and nutritional rehabilitation are the most essential factors of short-term outcomes and are essential for correcting cognitive deficits to allow for effective mental health interventions. Components of nutritional rehabilitation needed in treating patients with eating disorders have been presented in several reviews. [18] In the US, oral refeeding is the preferred modality for nutritional rehabilitation. But, for patients who are unwilling or unable to eat, supplements or nasogastric feeding may be life-saving.

Family-Based (“Maudsley”) Therapy

Over the past years, specialized eating disorder-focused family-based plans, based on work originally conducted at the Maudsley Hospital in London, have gained attention in the management of adolescent AN because it showed promising short-term and long-term outcomes. Though the cause underpinnings of this management approach have lost much of their support over time, however family-based interventions remain an effective and evidence-based treatment strategy for adolescent AN in both open trials and randomized controlled studies. [19]

Day-Treatment Programs

Day-treatment programs i.e. day hospitalization or

partial have been suggested to add an intermediate level of care for patients with eating disorders who require more than outpatient care but less than twenty-four-hour hospitalization. These programs have been utilized in an attempt to prevent the need for hospitalization.

Hospital-Based Treatment

Hospital-based management for eating disorders is much less common when intensive outpatient or day-treatment programs are available. Hospitalization is much more often needed for adolescent patients with AN than for patients with BN. Criteria for hospitalization of children and adolescents with eating disorders have been listed by the Society for Adolescent Medicine.

Pharmacotherapy

No drugs have been authorized by the US Food and Drug Administration for the management of AN. Pharmacotherapy is somehow prescribed however is typically targeted at comorbid symptoms of depression and anxiety. Selective serotonin-reuptake inhibitors (SSRIs) are usually utilized but may not be effective in severely malnourished patients. There is also very limited evidence for the use of SSRIs for relapse prevention in AN. [20]

PROGNOSIS:

The prognosis of eating disorders in adolescents is vary widely, and outcomes have depended on ways, definitions of recovery, and duration of follow-up in the studies reported. Adolescent outcomes are much better than the outcomes reported in adults. Longitudinal studies showed a more promising result. Most of patients fully recovered, and an even more people have a behavioral cure. But these results accrue only after more than ten years of follow-up; so, patients, their families, and physicians must be ready to stay involved. [21]

CONCLUSIONS:

There has been an increase in the incidence and prevalence of eating disorders in children and adolescents in recent decades, making it critical for pediatricians to take into consideration these clinical conditions in appropriate clinical settings, to assess patients suspected of having these disorders, and to manage patients in whom eating disorders are diagnosed. We included a discussion of diagnostic criteria and outlines the initial evaluation of the patient with disordered eating. Complications of eating disorders are variable and could affect any organ system, therefore careful monitoring for these

complications is needed and recommended. The range of management options, including medications. Pediatricians are advised to advocate for legislation and policies that make sure proper services for patients with eating disorders, including medical care, nutritional intervention, mental health treatment, and care coordination

REFERENCES:

1. **Whitaker AH.1992** An epidemiological study of anorectic and bulimic symptoms in adolescent girls: implications for pediatricians. *Pediatr Ann.* 1992;21(11):752–759.
2. **Lucas AR, Beard CM, O’Fallon WM, Kurland LT.1991** 50-year trends in the incidence of anorexia nervosa in Rochester, Minn.: a population-based study. *Am J Psychiatry.* 1991;148(7):917–922.
3. **Troiano RP, Flegal KM.1998** Overweight children and adolescents: description, epidemiology, and demographics. *Pediatrics.* 1998;101(3 pt 2):497–504.
4. **Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM.1999** Prevalence of overweight and obesity in the United States, 1999 –2004. *JAMA.* 2006;295(13): 1549 –1555.
5. **Strauss RS.1999** Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National Health and Nutrition Examination Survey III. *Arch Pediatr Adolesc Med.* 1999;153(7):741–747.
6. **Dominé F, Berchtold A, Akre C, Michaud PA, Suris JC.2009** Disordered eating behaviors: what about boys? *J Adolesc Health.* 2009; 44(2):111–117.
7. **Robinson TN, Killen JD, Litt IF, et al.1996** Ethnicity and body dissatisfaction: are Hispanic and Asian girls at increased risk for eating disorders? *J Adolesc Health.* 1996;19(6): 384 – 393.
8. **le Grange D, Telch CF, Tibbs J.1998** Eating attitudes and behaviors in 1435 South African Caucasian and non-Caucasian college students. *Am J Psychiatry.* 1998;155(2): 250 –254.
9. **Field AE, Camargo CA Jr, Taylor CB, et al.1999** Overweight, weight concerns, and bulimic behaviors among girls and boys. *J Am Acad Child Adolesc Psychiatry.* 1999;38(6): 754

- 760.
10. **American Psychiatric Association.2000** Diagnostic and Statistical Manual of Mental Disorders, 4th ed., Text Revision (DSM-IVTR). Washington, DC: American Psychiatric Association; 2000.
 11. **Herpertz-Dahlmann B. 2009** Adolescent eating disorders: definitions, symptomatology, epidemiology, and comorbidity. *Child Adolesc Psychiatr Clin N Am.* 2009;18(1):31–47.
 12. **Nichols JF, Rauh MJ, Lawson MJ, Ji M, Barkai H.2006** Prevalence of the female athlete triad syndrome among high school athletes. *Arch Pediatr Adolesc Med.* 2006; 160(2):137–142.
 13. **Attia E, Walsh BT.2007** Anorexia nervosa. *Am J Psychiatry.* 2007;164(12):1805–1810.
 14. **Patton GC, Selzer R, Coffey C, Carlin JB, Wolfe R.1999** Onset of adolescent eating disorders: population based cohort study over 3 years. *BMJ.* 1999;318(7186): 765–768.
 15. **Hagan JF, Shaw JS, Duncan PM, eds.2008** Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; 2008.
 16. **Brambilla F, Monteleone P.2003** Physical complications and physiological aberrations in eating disorders: a review. In: Maj M, Halmi K, Lopez-Ibor JJ, Sartorius N, eds. *Eating Disorders.* Chichester, England: John Wiley and Sons; 2003:139–192.
 17. **Panagiotopoulos C, McKrindle BW, Hick K, Katzman DK.2000** Electrocardiographic findings in adolescents with eating disorders. *Pediatrics.* 2000;105(5):1100–1105.
 18. **American Dietetic Association.2006** Position of the American Dietetic Association: nutrition intervention in the treatment of anorexia nervosa, bulimia nervosa, and other eating disorders. *J Am Diet Assoc.* 2006;106(12):2073–2082.
 19. **le Grange D, Eisler I.2009** Family interventions in adolescent anorexia nervosa. *Child Adolesc Psychiatr Clin N Am.* 2009;18(1): 159–173.
 20. **Kaye W, Nagata T, Weltzin TE, et al.2001** Double blind placebo controlled administration of fluoxetine in restricting type anorexia nervosa. *Biol Psychiatry.* 2001;49(7):644–652.
 21. **Steinhausen HC.2009** Outcome of eating disorders. *Child Adolesc Psychiatr Clin N Am.* 2009;18(1):225–242.