The Importance of a Primary Care Medical Home for Adolescents Diagnosed with Anorexia Nervosa

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OBJECTIVES

1. Explain the pathophysiology and symptomology of anorexia nervosa.
2. Apply evidence-based eating disorder screening tools into daily clinical practice.
3. Implement the medical home model into care for patients diagnosed with anorexia nervosa.

Abstract

Anorexia nervosa is a complex, chronic illness that affects many adolescents. A recent global study suggested that up to 22% of children and adolescents experience disordered eating (López-Gil et al., 2023). Disordered eating has been shown to begin in childhood or adolescence and continue to impact individuals throughout their lifespan (Crone et al., 2023). The management of anorexia nervosa requires a multidisciplinary approach, typically consisting of a primary care provider, therapist, and nutritionist (Hornberger et al., 2021). Due to the level of care coordination and resources required for these patients and their families, the primary care medical home model is an appropriate framework for pediatric providers caring for patients with anorexia nervosa. This manuscript uses a hypothetical case presentation to demonstrate the function of the medical home model for this patient population. Using the case presentation the pathophysiology, symptomology, screening tools, and implications for the medical home are discussed. The purpose of this manuscript is to educate providers on the presenting symptoms and screening tools used for early identification of anorexia nervosa, with an emphasis on the need for structured care coordination that can be provided with the medical home model.

Introduction

From a global study investigating eating disorders, it is estimated that 22% of children and adolescents display disordered eating (López-Gil et al., 2023). Since the COVID-19 pandemic, the diagnosis of eating disorders has doubled among adolescents and young adults (Hartman-Munick et al., 2022). It is imperative that pediatric primary care providers are able to screen for, diagnose, and manage eating disorders within this population. This complex chronic illness requires the utmost care and coordination through the medical home model.

The American Academy of Pediatrics reaffirmed its 2014 statement in 2023 regarding patient- and family-centered care coordination using the medical home model. The medical home is considered the standard of care for pediatric patients. This type of care model helps patients navigate a complex healthcare system by providing access to other members of the multidisciplinary care team to better address specific healthcare needs. Another role of the medical home is connecting patients and their families to community resources. The medical home also considers the child's medical, social, behavioral, educational, and financial needs during this coordination to optimize health and wellness (Council on Children with Disabilities & Medical Home Implementation Project Advisory Committee, 2014).

The medical home model is especially essential for patients with eating disorders. The purpose of this paper is to discuss a typical presentation of an adolescent patient with anorexia nervosa and how pediatric primary care providers can better support this population through the medical home model.

Case Presentation

Chief Complaint and History of Present Illness

This is a hypothetical patient scenario created to highlight a common presentation of anorexia nervosa and issues that primary care providers may face.

An 11-year-old Caucasian female presents to the clinic with her mother after "passing out in gym class" at school. Both the mother and daughter deny that this has occurred previously. The patient states that she was running in gym class when she "blacked out." The school informed the patient's mother that she was unconscious for approximately 30 seconds before the nurse arrived at the gym. The patient recalls being placed in a wheelchair and taken to the front office and denies any additional injuries. She rested and sipped water until her mother arrived. She reports feeling "fine" now. Her mother also reports that the patient has been exercising more frequently, eating less, and has been increasingly irritable.

Past Medical, Family, and Social History

The patient herself has no significant past medical history. Her mother and maternal grandmother have a history of anxiety and depression. Her social history reveals that she is a dancer and has an upcoming recital. She has been running 3–5 miles daily in addition to dance practice.

In the review of systems, she endorsed decreased appetite, headaches, dizziness, syncope, sore throat, hoarseness, heartburn, nausea, constipation, and food intolerance. All other review of

systems questions were negative. In a 24-hour dietary recall, the patient reported drinking approximately 120 oz of water, one serving of Greek yogurt, and a salad without dressing.

Pertinent Physical Exam Findings

The patient appears well-developed and well-appearing. Vital signs demonstrate bradycardia, hypotension, and bradypnea. The patient had previously been following her weight growth curve but has recently dropped in percentiles. Her BMI is slightly underweight. No dental caries were noted; however, the patient demonstrated a hypersensitive gag reflex.

The abdomen was scaphoid with hypoactive bowel sounds and tenderness upon palpation. No neurological deficits were appreciated, though the patient exhibited a flat affect. Respiratory and cardiac examinations were otherwise unremarkable. Her skin showed no lesions, rashes, or abrasions.

Diagnostics

The initial evaluation was conducted to rule out underlying medical conditions. This included a physical examination and a laboratory workup consisting of a complete blood count, comprehensive metabolic panel, liver enzymes, and a renal function test.

An electrocardiogram was performed due to the syncopal episode to rule out any underlying arrhythmia. The laboratory and electrocardiogram results were normal for this patient; therefore, the diagnosis was based on the DSM-5 diagnostic criteria for anorexia nervosa (Appendix A, Table 1).

Management

The patient was referred to a nutritionist and a therapist. She was also prescribed daily calcium and vitamin D supplementation. The patient had weekly nurse visits at the primary care office for blind weight checks. The primary care provider scheduled monthly follow-up appointments with the goal of weight stabilization and improvement of physical symptoms.

Discussion

Pathophysiology of Anorexia Nervosa

The exact cause of anorexia nervosa is currently unknown. There is no one cause that triggers an eating disorder. It is believed to be a multifactorial and complex disorder involving genetic, neurobiological, environmental, and social factors see Figure 1 in Appendix B.

There is a genetic factor that is linked to anorexia nervosa. If an individual has a relative who has been diagnosed with anorexia, that individual is 11 times more likely to develop the disease in comparison to an individual with no family history. Twin-based studies have shown hereditability of anorexia nervosa to approximately 50%-60%. It has been suggested that up to 25 different genes play a role in the development of anorexia nervosa (de Jorge Martinez et al., 2021).

It has been shown that anorexia nervosa affects two neuropathways: the 5-hydroxytrptamine system and the dopaminergic system. The 5-hydroxytryptamine system affects the amount of food intake, personal mood, and body weight. Anorexia nervosa changes the dopaminergic system by altering cognitive processes, the brain's reward center, substance dependence, feeding, and motor activity (Bozzola et al., 2024).

Neural imaging has revealed alterations in the interoceptive-processing regions across the subcortical and anterior midline cortical regions of the brain (Bozzola et al., 2024). Interoception is important because it allows the body to feel its own internal signals such as hunger or thirst (Cleveland Clinic, 2025). The patient in the case presentation has lost the ability to feel hungry which will only exacerbate this disease process.

Environmental and social factors play a critical role in an individual developing anorexia nervosa. Since the COVID-19 pandemic, there has been an increase in eating disorders. Social media is often linked to anorexia nervosa. Self-esteem and socialization issues are directly related to the onset of eating disorders. A stressor is typically related to the onset of this disorder, such as social stressors like bullying regarding weight and body type. Sexual minorities (gay, lesbian, and bisexual) and gender minorities (transgender or non-gender conforming) are more likely to develop an eating disorder (Bozzola et al., 2024).

In an initial appointment regarding an eating disorder, the provider should take careful consideration of the patient's current social history. While in the case presentation, this patient has hobbies such as dance that seem harmless. It is important that a provider can recognize social situations that may make a patient at higher risk for developing an eating disorder.

Common Presenting Signs of Anorexia Nervosa

Anorexia nervosa affects every system in the body. There are common physiological findings that are related directly related to anorexia nervosa see Table 2 in Appendix C. With any of these findings, an underlying medical condition must first be ruled out. According to the American Psychiatric Association Guidelines suggest that the initial physical exam should include vital signs (temperature, heart rate, blood pressure, orthostatic pulse, orthostatic blood pressure,

height, weight, and BMI) and physical assessment of malnutrition and potential purging behaviors. In the initial laboratory workup for anorexia includes complete blood count, comprehensive metabolic panel (with electrolytes), liver enzymes, and renal function test. If there are restrictive eating behaviors, an electrocardiogram is warranted to further investigate potential arrhythmias (Crone et al., 2023). This patient came into the office with some of the body systems affected by malnutrition, so a workup to rule out other physiological causes was completed. After completing the initial workup and ruling out other medical causes, the primary care provider can then begin addressing the patient's needs regarding the eating disorder.

Screening for Anorexia Nervosa

The AAP recommends further investigation with screeners if a child reports on dieting, body image dissatisfaction, weight-based stigma, or changes in eating or exercise habits. (Hornberger et al., 2021). Currently, the US Preventive Services Task Force (USPSTF) has insufficient evidence to recommend universal screening for adolescents and adults for eating disorders (Golden et al., 2022). Pediatric primary care providers should be aware of current screening tools available to help early identify children who are at risk for anorexia nervosa. Two helpful tools include the HEADSS Assessment and the SCOFF Questionnaire.

HEADSS Assessment

The HEADSS is a full psychosocial assessment that is recommended by the American Academy of Pediatrics for all adolescent patients. The acronym stands for home, education, activities, drugs/diet, sexuality, suicidality/depression (Hornberger et al., 2021). With the multifactorial element of eating disorders, this assessment will help identify at risk adolescents for eating disorders. It will also help determine suicidality risk, which is the highest comorbidity of

anorexia nervosa (Hornberger et al., 2021). For the patient in the case presentation, the HEADSS assessment would identify disordered eating in the diet history as well as increased exercise relating to her dance recital which requires further investigation.

SCOFF Questionnaire

The SCOFF Questionnaire, see Figure 2 in Appendix D, is a validated tool to help detect an eating disorder. It contains 5 questions and if a patient scores two or higher, it indicates a high suspicion of disordered eating. The patient in the case presentation would potentially have scored a 4 out of 5. This gives a quantitative measurement to the diagnosis that can be tracked over time. This score would indicate further investigation and follow-up for an eating disorder.

Current Treatment Recommendations for Anorexia Nervosa

There are many different management guidelines. To determine the best course of action, the provider should take into consideration the specific needs and severity of the symptoms of each individual patient. The American Psychiatric Association focuses on family involvement. The parents need an involved caregiver for family-based treatment with parent education that includes normalizing eating, understanding weight-control behaviors, and restoring weight. The patient management should include a referral to psychotherapy and a nutritionist (Crone et al., 2023).

The American Academy of Pediatrics guidelines focus on patient and family education. Education should include the physiological and psychological effects of the disease process. They should be involved in their recovery and help with food portions. Family-based therapy is recommended (Hornberger et al., 2021); Family therapy does not focus on the root cause of anorexia, but rather recovery from the disease. The underlying principle of this therapy is that

parents should be involved in recovery, parents should not blame their child for the eating disorder, and eating disorders are not caused by family dysfunction. The entire family meets with the therapist. There are 3 phases of this type of therapy. The goal of the first phase is weight restoration. Parents should be meal planning and preparing meals for the child. In phase 2, weight recovery has occurred, and the child is taking more responsibility for their eating. In phase 3, weight recovery has been achieved and the focus of therapy switches to address the child's psychological needs (Hornberger et al., 2021). Primary care providers should be aware of therapists within their geographical locations that offer this type of therapy, so they can make appropriate referrals.

Currently, there are no FDA medications specifically designed to treat anorexia nervosa, but medications may help some co-morbid conditions such as anxiety and depression. Since adolescents are still growing to optimize bone health, a calcium and Vitamin D supplements are appropriate. (Hornberger et al., 2021). The patient in the case presentation was referred to a therapist and nutritionist, and prescribed appropriate treatment. However, there is a national shortage of mental health providers.

Medical Home Implications

The diagnosis of anorexia nervosa is complex and requires a multidisciplinary team for effective management. This includes the patient, family, providers, nutritionist, and therapist. This disease process highlights the needs for anorexic patients to have a primary care medical home. These patients are medically and socially complex and require through and frequent follow up. The primary care provider's role will be to refer this patient to each service and confirm that they are using the services. The primary care medical home will also help coordinate the patient's needs

within the school system, their family, and transition into adult care to provide optimal patient outcomes.

School

Pediatric primary care providers should advocate for appropriate school accommodations. An adolescent with an eating disorder would qualify for a 504 plan. A 504's goal is to provide school-based accommodations to promote learning in the least restrictive environment (Lipkin and Okamoto, 2015). Some examples of appropriate learning accommodation include allowing the nurse to check the weekly weight, as needed anxiety medication, unlimited snacks and water, restriction to the restroom to only a specific bathroom, modification of gym activities, and extended time to make up schoolwork (Department of Education, 2024). Pediatric providers can also provide education to non-medical personal at the school by providing an emergency action plan. This is a plan set in place if needs relating to the eating disorder arises at school and gives the school and exact protocol. See Appendix E Figure 3 for an example.

Family Involvement

Anorexia nervosa is a diagnosis that affects the entire family system, and the primary care provider can help assist the family in managing this disease. In children with chronic complex medical needs, the family unit needs should also be addressed. Common issues that families face when one child has a complex medical need are: physical and mental health strains, financial constraints, time limitations, and difficult family dynamics. Often chronic illnesses can feel like isolating to these families (Teicher et al., 2023). To follow the medical home model, providers should have open communication with the parents and siblings to address the family dynamics.

Providers should also provide these families with additional resources and access to support groups to better address their individual needs, see Appendix F, Table 3.

Transition into Adult Health Care

The medical home model also advocates for appropriate transition into the adult healthcare system. The primary care provider can assess the adolescent's ability to coordinate and manage one's own healthcare using screening tools such as Transition Readiness Assessment Questionnaire or TRAQ (Partnership to Improve Children's Health, 2023). According to the American Academy of Pediatrics, prognosis for adolescent eating disorders is limited. But suicide continues to be the leading cause of mortality in adolescents and into adulthood (Hornberger et al., 2021). An adult provider would also need to be equipped to screen for relapses in eating disorders and monitor mental health.

Limitations

The limitations for this disease process include provider education, appropriate timing of screening, and access to mental health professionals.

Many health professionals may not have had appropriate education in identifying and treating eating disorders. In a recent study that addressed eating disorder education in medical schools, it determined that most medical school students have limited education regarding eating disorders (Laboe et al., 2025). Increased education regarding disease and management will help in early diagnosis and intervention for this patient population.

For earlier diagnosis of eating disorders, there are improved patient outcomes due to earlier intervention (Laboe et al., 2025). Since USPSTF has insufficient evidence for universal

screenings for eating disorders, providers may not identify eating disorders. Further investigation should be conducted to determine if universal screening would be beneficial due to the current increase in eating disorders.

The National Council of Well-Being states that there are more than 122 million Americans that currently do not have access to mental health services (Carter, 2025). This may provide limited accessibility to in-person therapy for adolescents diagnosed with anorexia nervosa. Providers should be aware of online resources that exist for adolescents with eating disorders.

Conclusion

In conclusion, anorexia nervosa is a complex, multifactorial disease where the patient and family would benefit from a primary care medical home. The role of this medical home is to screen for the disease, conduct a thorough assessment, and provide recommended treatment and referrals. With the use of a medical home, the provider can ensure that the individual with anorexia nervosa is maintaining appointments with other providers and continuing to improve instead of relapsing the disease. Due to the minimal number of providers that specialize in eating disorders, pediatric primary care providers have the unique opportunity to serve as this patient's medical home to promote optimal health outcomes across the lifespan.

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Appendix A

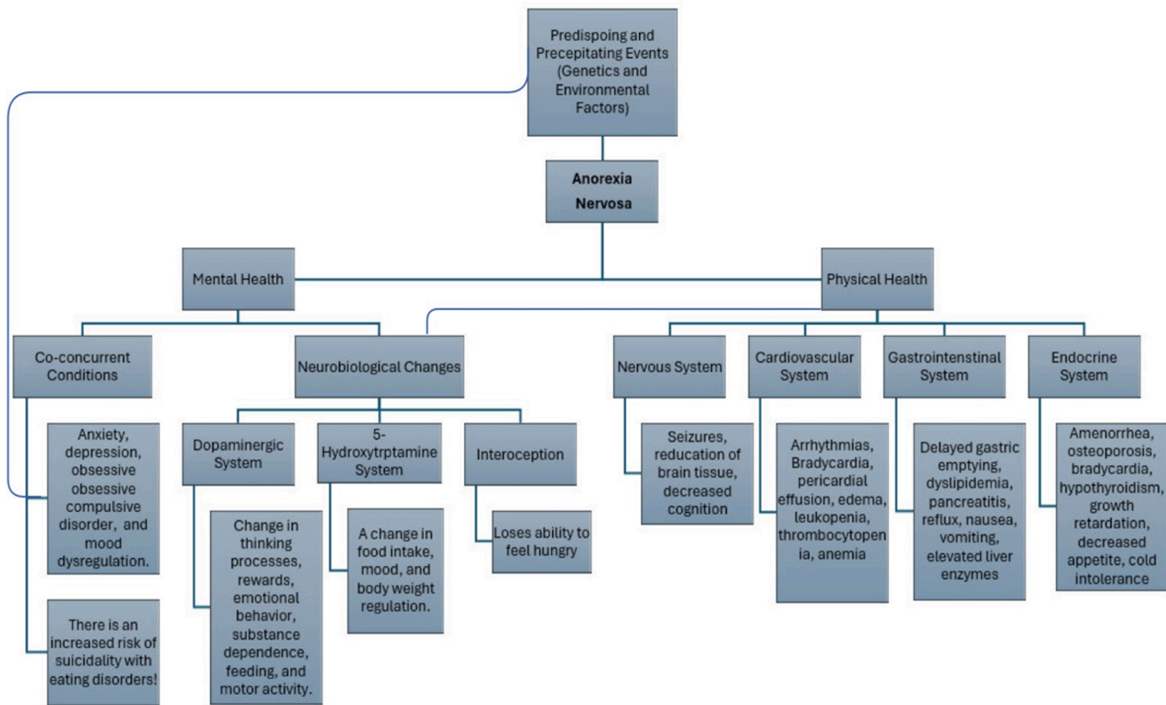
Table 1: DSM-5 Diagnostic Criteria for Anorexia Nervosa

Must display all three of the following characteristics to be diagnosed with anorexia nervosa:
● Restriction of energy intake relative to requirements, which leads to a low body weight in the context of age, sex, developmental trajectory, and physical health. ● Intense fear of gaining weight or becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight. ● Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

(Harrington et al., 2015)

Appendix B

Figure 1: Multisystem Concept Map of Anorexia Nervosa



Appendix C

Table 2: Physiological Impacts of Anorexia Nervosa

Body System Affected	**Physiologic Impacts**
Fluid and Electrolytes	Dehydration Hypokalemia Hyponatremia
Nervous System	Cerebral atrophy Decreased cognition Seizures
Cardiovascular System	Bradycardia Cardiac dysrhythmias Cardiac conduction disorders Pericarditis Congestive heart failure Edema
Gastrointestinal System	Gastroparesis Pancreatitis Dyslipidemia Elevated liver enzymes
Endocrine System	Delayed growth Delayed sexual maturation Amenorrhea Testicular Atrophy Hyperlipidemia Poor glycemic control Decrease bone density
Hematological System	Leukocytopenia Erythrocytopenia Thrombocytopenia
Dermatologic	Hair thinning Lanugo Dry skin Brittle nails Acrocyanosis
Oral and Dental	Dental erosions Dental caries Hypertrophy of parotid or salivary glands
Mental Health	Depression Mood dysregulation Obsession compulsion tendencies Anxiety Increased risk for suicidality

(Hornberger et al., 2021)

Appendix D

Figure 2. SCOFF Questionnaire

Question	Response
S – Do you make yourself **S**ick (throw up) because you feel uncomfortably full?	Y/N
C – Do you worry you have lost **C**ontrol over how much you eat?	Y/N
O – Have you recently lost more than **O**ne stone (approximately 14 pounds) in a 3-month period?	Y/N
F – Do you believe yourself to be **F**at when others say you are too thin?	Y/N
F – Would you say you have thoughts and fears about **F**ood and weight that dominate your life?	Y/N

(Morgan et al., 1999)

Appendix E

Figure 3: School Emergency Action Plan for Anorexia Nervosa

Zone Color	Warning Signs	Action to Take
GREEN Stable	The student is actively engaged with peers and in the classroom. The student is eating meals and snacks. No excessive exercise is noted.	No action is necessary.
YELLOW Early Warning Signs – Seek Help	1. Self-induced vomiting or laxative use. 2. Refusal to eat. 3. Depressed mood or low energy levels.	Send the student to the nurse with another student. Nurse will assess student and report findings to provider and parent. Depending on severity, the nurse may involve guidance counselor or school psychologist.
RED Immediate Action Required	1. Suicidal ideation. 2. Fainting or passing out.	Do not leave the student alone. The student should be immediately taken to nurse for assessment. Parents should be notified as soon as possible. 1. Suicidal ideation with a plan and means should be sent to the emergency department for further investigation. 2. Fainting or passing out abnormal vitals and physical assessment should be sent to the emergency department for further investigation.

(Hornberger et al., 2021)

Appendix F

Table 3: Online Resources for Families with Children with an Eating Disorder

Online Resources for Families with Children with an Eating Disorders		
Name	**Type of Resource**	**Website Link**
Equip Health	Online Eating Disorder Treatment Option	https://www.equip.health/
National Association of Anorexia Nervosa and Associated Disorders	Information and Resources for Families	https://anad.org/
National Eating Disorders Association	Information and Resources for Families	https://www.nationaleatingdisorders.org/
The Eating Disorder Foundation	Offers Support Group Sessions	https://www.eatingdisorderfoundation.org/