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1. Discuss the causative factors associated with eating disorders.
2. Describe the warning signs and behavioral evidence that can be seen in teens that are at risk for eating disorders.
3. Describe the components of screening for eating disorders and how to calculate an approximate ideal body weight.

Article

Prevalence and Screening for Teens with Eating Disorders – Part One

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This is part one of a three part series. Part two is "Diagnosis and Treatment for Teens with Eating Disorders" and Part three is "Athletes and Eating Disorders".

Introduction

The word "adolescence" is derived from the Latin word adolescere, which means, "to grow up" – describing the period in a person's life between childhood and maturity. So much occurs during adolescence and I would predict that most of us would not want to repeat it. Adolescents / teenagers are concerned with their body image, peer acceptance, self-identity and independence. Girls tend to be weight-conscious and can be greatly influenced by the media and their peers regarding sociability. Boys tend to vie for muscle development, weight lifting strength, athletic ability, and physical power. Both sexes have uncertain feelings that arise related to their body image and their desirability according to themselves and their peers; these uncertainties can lead to eating disorders with devastating effects. This article focuses on eating disorders that can afflict teens during these "roller-coaster" years.

Life events and stressors can cause minor and transient changes in eating habits void of medical or social complications – these are often referred to as "disordered eating". But for a conservative estimate, 1% to 2% of our teens (mostly females) will develop an eating disorder. For teens with eating disorders, their development and life is complicated by physiological and psychosocial changes associated with starvation, binge eating, purging, and weight fluctuations. Anorexia Nervosa, Bulimia, and Binge Eating are classified as psychiatric illnesses and are the three most common eating disorders. These disorders cause mental preoccupation and behaviors about one's body and the foods consumed, which can impact health, socialization, school, and for some may lead to death. The focus for the healthcare team including nurses is not on diet or nutrition but rather on the illness and the underlying pathology. Eating disorders are complex problems that develop from a variety of causes. Once an eating disorder develops it has a propensity to create a self-perpetuating cycle of physical, emotional, and psychosocial destruction requiring professional help. Unfortunately eating disorders can and often do go undetected and untreated.
In the past, eating disorders were typecasted as affecting only white affluent women but that is no longer substantiated. Eating disorders cross all ethnic groups and socioeconomic classes. Both males and females are at risk with adolescent and young adult women having the highest risk. About 85% to 90% of anorexia nervosa and bulimia cases occur in women, and an estimated 60% of binge eating cases occur in women. It is interesting to note that nearly 2 million people in the United States have an eating disorder or a borderline condition, which is triple the number of people living with AIDS (according to the US Department of Health and Human Services, HIV/AIDS Surveillance Report 1998 about 665,000 people are living with AIDS).

**Eating Disorders – Causative Factors That Place Teens At Risk**

Current research on causative factors points to a combination of genetic, neurochemical, psycho-developmental, and sociocultural factors. Though the media does have an impact on teens it is believed not to be a root cause of eating disorders as previously assumed.

**Genetic Issues:**

Errors in human genes are responsible for an estimated 3,000 to 4,000 hereditary diseases, including but not limited to Huntington's disease, cystic fibrosis, neurofibromatosis, and Duchenne muscular dystrophy. Altered genes are known to play a role in cancer, heart disease, diabetes, and other “common diseases”. In these more “common diseases” (including eating disorders), genetic alterations increase a person’s risk of developing that disorder. The disease itself results from the interaction of genetic predispositions and environmental factors, including diet and lifestyle. There are several family and twin studies suggestive of heritability of anorexia and bulimia but to date no specific gene (or genes) has been isolated; however, the hSKCa3 potassium channel gene is showing promising research. It is further believed that multiple genes may interact with environmental and other factors to increase the risk of developing eating disorders. A variant of the agouti-related protein (AGRP), which is involved in controlling appetite, has been found more frequently in patients with anorexia nervosa than in controls in a study published in Molecular Psychiatry.

**Neurochemical Issues:**

There are studies that indicate biological and chemical changes in individuals with eating disorders. Chemicals in the brain, particularly serotonin (5HT), that control hunger, appetite, and digestion and help regulate mood, have been found to be imbalanced. There appears to be reduced serotonin uptake in women with bulimia and increased serotonin in women with anorexia nervosa. Both under eating and overeating can activate brain chemicals that produce feelings of peace and euphoria, thus temporarily dispelling anxiety and depression.

**Psycho-Developmental and Sociocultural Factors:**

There are several psycho-developmental and sociocultural factors. The most common are listed below:

- A preoccupation over food and weight that evolves into more complex issues such as control and distorted body image;
- Distress over weight and body shape during late childhood. Adolescent females are particularly sensitive and internalize negative criticism about the way they look or comments about what they eat. A series of offhanded remarks about excessive weight gain or dietary indiscretions in the context of a perfectionist and emotionally cold home environment can be detrimental and destructive;
- Impulsivity and a fear of loss of control (making the clinician’s focus not on dieting, but rather on behaviors/dynamics);
- Troubled family and personal relationships and or difficulty expressing emotions and feelings;
- History of being teased or harassed based on size or weight or history of physical or sexual abuse; and or
- Cultural pressures/norms on the basis of physical appearance and not inner qualities and strengths.

**Contributing or Co-Morbidity Factors To Eating Disorders are:**

- Self-injurious behavior (also associated with serotonin levels);
- Poor self-esteem, feelings of inadequacy or lack of control in life;
- Depression, anxiety, anger, or loneliness; and
- Athletes involved in high-risk competitive sports in which body shape and sizes may play a role. There is a
significant amount of pressure placed on athletes to perform at the highest level. High-risk sports include gymnastics, ballet, cheerleading, figure skating, jockeying, swimming, diving, bodybuilding, long distance running, wrestling, and weight-class football.

(Note: Some athletes may use extreme weight-loss practices that include over exercising; prolonged fasting; vomiting; using laxatives, diuretics, diet pills, other licit or illicit drugs, and/or nicotine; and use of rubber suits, steam baths, and/or saunas. Note that the majority of these disordered eating behaviors do not meet the Diagnostic and Statistical Manual of Mental Disorders criteria for anorexia nervosa or bulimia.

Pre-Existing Medical Conditions May Be Another Risk Factor:

Existing medical conditions that have diet restrictions may place teenage girls at risk for eating disorders. Diseases such as phenylketonuria (PKU) and diabetes that significantly restrict diet can have a negative impact on eating behavior and body image of teen-age girls. To be young and restrictive in food can cause periods of binging – eventually resulting in an eating disorder. Healthy teens struggle with changes in their bodies, trying to feel good about themselves. For those with a chronic disease, the challenges of dealing with that disease and growing up can reduce self-esteem and a sense of control.

Influence of Media:

Media may not be a cause of eating disorders but it has an impact on teens. Media comes in many forms ranging from television, radio, magazines, and movies to the Internet, computer and video games, and popular music. Teens are targeted and bombarded with advertisements that impact their perception on body image. Keep in mind that this bombardment comes during vulnerable adolescent years of self-discovery. Advertising techniques such as "normalizing the strange" are used in many music videos and are believed to be causing reality confusion. The media has increasingly held up a thinner and thinner body image as the ideal for women, even in times when food servings and bodies are bigger. Seventeen, a leading magazine for teens conducted a study in 1999 of teenage girls regarding body image satisfaction. The study revealed that 46% of female readers were unhappy with their bodies, 35% said they would consider plastic surgery, including breast augmentation, and 7% said they suffered from eating disorders. A study written in the International Journal of Eating Disorders, 1996, found that the amount of time an adolescent watches soaps, movies, and music videos is associated with their degree of body dissatisfaction and desire to be thin.

As we see an increasing number of teens with eating disorders we must be conscious about the influence of the media on perception of ideal body shape and size.

Screening for Eating Disorders: Warning Signs / Behavioral Evidence

Screening for eating disorders should be integrated into routine well-child visits, school physicals, counseling sessions, physical therapy, dental exams, and illness-related visits. Rarely does the teenager present with obvious warning signs, such as the bulimic that swallowed a toothbrush. The presence of warning signs or behavioral evidence does not constitute an eating disorder diagnosis but should prompt clinicians to screen and refer the teenager for further evaluation/assessment. It is rare that teens (or even adults) volunteer this information because of the secrecy and shame associated with eating disorders. There are six focus areas in a screening process that if completed by clinicians will most likely detect a teen with an eating disorder. Each of the six is outlined below.

1. Body Image and Weight History

- Increased dieting, pressure to be thin, modeling of eating disturbances, appearance overvaluation, body dissatisfaction, depressive symptoms, emotional eating, body mass, and low self-esteem and social support. Studies are suggesting that these traits can predict binge-eating onset with a 92% accuracy.
- Refusal to maintain body weight at or above a minimally normal weight for height, body type, age, and activity level.
- Intense fear or anxiety of weight gain or being "fat" or feeling "fat" despite dramatic weight loss
- Traits of a perfectionist and a high achiever in school are typical of anorexics.

2. Eating Behaviors and Meal Patterns
- Refusal to eat certain foods, progressing to restricting whole categories of food.
- Denial of hunger or excuses to avoid mealtimes or situations involving food.
- Development of food rituals such as eating foods in certain orders, excessive chewing, or rearranging food on a plate.
- Disappearance or eating large quantities of food in short periods of time, often secretly, without regard to feelings of "hunger" or "fullness," and to the point of feeling "out of control" while eating. (e.g., within any 2-hour period)
- Hoarding/hiding food or the existence of wrappers and containers indicating the consumption of large amounts of food.
- Frequent trips to the bathroom after meals, signs and/or smells of vomiting, presence of wrappers or packages of laxatives or diuretics.
- Creation of complex lifestyle schedules or rituals to make time for binge-and-purge sessions. Binges are followed with some form of purging or compensatory behavior (self-induced vomiting, laxative or diuretic abuse, fasting, and/or obsessive or compulsive exercise) to compensate for excessive calories consumed.
- Non-purging type – uses inappropriate compensatory behaviors, but does not regularly engage in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

3. Physical Activity Review

- Excessive, rigid exercise regimen even in inclement weather and despite fatigue, illness, or injury to satisfy the need to "burn off" calories that were taken in.
- Over-training of athletes or dancers.

4. Psychosocial Evaluation

- Combined behavioral traits such as anxiety, harm avoidance, perfectionism, obsessive-compulsive behavior, and diminished self-directedness particularly in anorexics
- Poor self-esteem.
- Withdrawal from usual friends and activities.
- Decreased interest in sex or fear of sex.
- In general, behaviors and attitudes indicating that weight loss, dieting, and control of food are primary concerns such as preoccupation with weight, food, calories, fat grams, and dieting.
- History of abuse or traumatic life event. Studies support evidence that binge eaters report childhood maltreatment such as emotional abuse, physical abuse, sexual abuse, emotional neglect, and/or physical neglect.

5. Health History

- The absence of at least three consecutive menstrual cycles.
- Fainting spells or complaints of lightheadedness.
- Unexplained constipation or diarrhea.
- Hypothermia, sensitivity to cold.

6. Physical Exam

- Body Mass Index (BMI) below the 5th percentile.
- Loss of muscle mass.
- Calluses on the back of the hands and knuckles from self-induced vomiting.
- Discoloration or staining of the teeth.
- Unusual swelling of the cheeks or jaw area (enlarged parotid – salivary gland).
- Frequent sports injuries may be the presenting symptom but the underlying illness is an eating disorder.

**Ideal Body Weight**

There is no single clinically valid tool for body weight measurement or calculation that this author can provide. Lets start with the history of "ideal weight charts" to better understand this dilemma. In 1942, a statistician at Metropolitan Life Insurance Company named Louis Dublin grouped approximately four million people insured with Metropolitan Life into categories based on their height, body frame (small, medium or large) and weight. He discovered insurees who lived the longest were the ones who maintained their weight at the level for average 25-year-olds. Over time, the
Metropolitan Life tables became widely used for determining recommended body weights and in 1942 the tables provided "ideal body weights". In 1959, they were revised and became "desirable body weights". The weights given in the 1983 tables are heavier than the 1942 tables because, in general, heavier people live longer today. The validity of these tables is questionable because frame size was never consistently measured and the people included were predominantly white and middle-classed. It is believed that some persons were actually weighed and some were not and some wore shoes and/or clothing, some did not. The tables do not consider percentage of body fat or distribution – an important factor in longevity. In addition, the numbers are okay for persons in their forties, but too heavy for younger persons and too light for older persons. There is expert opinion that the 1942 tables are more accurate because they indicate lower "ideal weights". The American Heart Association recommends using the 1959 tables because of lower body weights. Other sources for recommended body weights can be found at the U.S. National Center for Health Statistics, North American Association for the Study of Obesity, and the U.S. Department of the Army. Some of these charts are sex and age graded.

Ideal body weight is different for every individual and factors such as health, body fat content and distribution, musculature, age, activity, and metabolism must be taken into consideration. This is difficult to measure accurately. Eating disorder treatment centers have a tool to determine an approximate ideal body weight and to calculate target weights based on their preferences. Two examples are provided below that are currently in use.

- To determine an approximate ideal body weight for females, start with a base height of 5 feet and a base weight of 100 lbs and add 5 lbs. for each additional inch over 5 feet.
- For males, begin with a base height of 5 feet and a base weight of 106 lbs. and add 6 lbs. for each additional inch over 5 feet.

Summary

Erik Erickson (1963) stated that the central developmental task of adolescence is to develop a sense of identity. As teens enter late adolescence, if all has progressed satisfactorily, they are well on the way to separating from family and establishing identity. For teens with eating disorders "the getting there" is especially difficult. They have to come to terms with the normal pressures of adolescence, and they have the extra burden of establishing a sense of self in the midst of an eating disorder. Early screening and detection of teens with eating disorders improves outcomes as well as promotes teen education and awareness. Health care is on a path of prevention, wellness, and integration of services – eating disorders and body image need to be included more often. There is much that we as health professionals could do to focus on prevention. Consider involvement in at least one of the following:

1. Offer your services such as performing lectures to help increase awareness of the key nutritional issues that affect our youth. Include the connections between dieting, physical activity, and health, and the health risks associated with eating disorders and being underweight.
2. Assist schools in developing policies on eating disorders and screening for early detection.
3. Develop or obtain an eating disorders screening tool to use in your nursing care – include pre-existing medical conditions that may predispose a person to developing an eating disorder.

It is important to note that if you assist a school in a particular eating disorder awareness policy, that an educational offering to students should have a follow-up session to answer questions and fears that arise – particularly to address and/or identify students with eating disorders. In addition, counselors and teachers need to be prepared and accessible for students who want to share concerns regarding their own eating disorder or that of a friend's.

Eating disorders are illnesses draped with a veil of secretiveness and denial, which in part makes them difficult to detect as well as treat. "As I was walking down the hall while students were changing classes a young female high school student passed out and was lying unconscious on the floor with her friend beside her trying to comfort her. My initial thought was low blood sugar or diabetes. She was very thin, pale, and cool to the touch – her body covered with lanugo and a belly that looked like it hadn't had anything for days. I knew quickly what we were dealing with. As a lunch was ordered for her to eat, I spoke with her mother regarding her daughter's episode. She was not entirely surprised by the call as she confided in me that her daughter has anorexia but ... I shouldn't tell anyone!"

References or Suggested Reading


About the Author(s)

Colleen Symanski-Sanders, RN, Forensic Nurse Specialist, has been a Registered Nurse for over 18 years. She has extended her education into forensic nursing, criminal profiling, and psychopathy receiving a Certificate as a Forensic Nurse Specialist. She has over 16 years experience in public health and home care nursing.

Colleen has been an author of educational material for St. Petersburg College, St. Petersburg, Florida. She has also lectured on a variety of topics at numerous nursing symposiums and conferences across the country. She is on the Editorial Board for "Home Health Aide Digest"; and "Private Duty Homecare" publicatinons.