



Caring for the hospitalized patient with an eating disorder

Barbara E. Wolfe, PhD, RN, CS, FAAN^{a,b,*},
Laura B. Gimby, MSN, RN, CS^c

^a*Department of Psychiatry, ELZ-718,*

Beth Israel Deaconess Medical Center, 330 Brookline Avenue, Boston, MA 02215

^b*Harvard Medical School, Boston, MA*

^c*Eating Disorders Services, Waltham Hospital, 9 Hope Avenue,
Waltham, MA 02453*

Eating disorders are chronic psychiatric illnesses with significant medical complications, psychological distress, and psychiatric comorbidity. In addition to being among the most common psychiatric disorders in young women [1], eating disorders are among the psychiatric conditions having the highest mortality [3]. Although many patients are treated on an outpatient basis, inpatient care for the more severely ill hospitalized patient can be challenging given the severity of illness and concurrent issues in need of intervention. This article provides an overview of the clinical characteristics of anorexia nervosa and bulimia nervosa with an emphasis on key areas for nursing assessment and plan of care during an inpatient stay.

Epidemiology

Anorexia nervosa affects approximately 0.2% to 0.5% of young women [3]. Bulimia nervosa affects approximately 2% to 3% of this same age group [3]. Women are 10 times more likely to be affected by an eating disorder than men. Onset is typically during adolescent and early adult years (20s) but may occur at earlier and later ages. These disorders seem to be most prevalent in Western cultures, although studies suggest that their occurrence in Asian cultures may be increasing [4,5].

* Corresponding author.

E-mail address: bwolfe@bidmc.harvard.edu (B.E. Wolfe).

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Cause

Although the cause of eating disorders is elusive, several factors are likely to have a contributory role. Sociocultural and environmental factors, including the media and peer influences, have been postulated to be influential [6]. Family factors, such as attachment, intrusiveness, and parental discord, also are thought to be important [7–9]. Biologic variables, including genetics, neurotransmitter regulation, and hormonal functioning, have been implicated [10–13]. Negative affect, low self-esteem, and dieting behavior commonly predate the onset of an eating disorder, although causality has not been shown. Because none of these factors offers a sufficient explanation alone, it is likely that there may be several different pathways to the development of an eating disorder, and the possibility of a constellation of interactive factors contributing to the vulnerability and expression of the disorder exists.

Diagnostic criteria

Anorexia nervosa

The *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision* (DSM IV-TR) defines anorexia nervosa as occurring in individuals who refuse to sustain a body weight that is greater than 85% of the weight normally expected for their age and height [14]. These individuals are terrified of gaining weight or becoming fat despite being emaciated and are severely influenced by a distorted perception of their own body shape and weight [14]. Amenorrhea, in the presence of the aforementioned defining characteristics, is an additional criterion for postmenarcheal women [14]. The diagnosis of anorexia nervosa is classified into two types: (1) *restricting type*, describing individuals who do not routinely experience binge eating episodes or purging behavior, and (2) *binge-eating/purging type*, characterizing individuals who regularly engage in purging behavior [14].

Bulimia nervosa

Bulimia nervosa occurs in individuals who are in a normal weight range or who may be overweight. Patients experience recurring binge-eating episodes characterized by the consumption of a large amount of food in a short period of time, exceeding what normally would be expected. To avoid gaining weight, patients use inappropriate compensatory behaviors, including purging behaviors such as self-induced vomiting, laxative abuse, and enemas. Nonpurging compensatory behaviors include fasting, use of diuretics, and extreme exercise. Frequency of binge-eating episodes and compensatory behaviors averages at least twice a week for 3 months or more [14]. As with anorexia, body shape and weight are pivotal to self-esteem. The diagnosis of bulimia nervosa is classified into two types: (1) *purging type*,

describing individuals who engage in regular use of self-induced vomiting, laxatives, diuretics, or enemas, and (2) *nonpurging type*, characterizing individuals who do not regularly engage in purging but rather use other inappropriate behaviors to prevent weight gain [14].

Comorbid disorders

Comorbid psychiatric disorders often occur in patients with anorexia and bulimia nervosa. Affective illness is a common coexisting condition. Of patients with eating disorders, 50% or more have a lifetime history of major depression [15]. Anxiety disorders co-occur at frequent rates, with lifetime obsessive-compulsive disorder affecting one in three patients [16]. The presence of obsessive-compulsive disorder is associated with eating disorder chronicity [16]. Excessive substance use is frequent, with up to 50% of patients having a history of substance dependence [17]. Approximately one third of all patients with bulimia nervosa have a lifetime history of self-injurious behavior, with lower rates observed in patients with anorexia [18]. Individuals with bulimia nervosa often have increased impulsivity [19], making them susceptible to impulsive and potentially self-damaging acts. Trauma history, such as childhood sexual abuse, is associated with increased comorbidity, although it seems to be a nonspecific risk factor for an eating disorder [38]. Cluster B (eg, borderline) and Cluster C (eg, obsessive-compulsive and avoidant) personality disorders often have been observed in patients with eating disorders, with Cluster B disorders occurring more frequently in patients with bulimia nervosa [20]. The presence of comorbid personality disorder has been associated with increased rates of treatment usage [21].

Prognosis

Eating disorders are often chronic conditions. Long-term follow-up studies of patients with anorexia nervosa suggest that after 10 to 15 years, 75% achieve complete recovery, 10% have partial recovery, and approximately 14% remain actively ill [22]. For patients with bulimia nervosa, a 5-year prospective follow-up study revealed that 35% of patients continue to meet full criteria for the disorder, with relapse occurring in one third of the patients [23]. Remission was attained by approximately one third of the patients each year of the 5-year follow-up [23].

Inpatient nursing care

Therapeutic relationship

The relationship between the care provider and the patient is vital to inpatient nursing care. The nurse plays a crucial role in creating and

fostering a therapeutic alliance. Empathy, positive regard, acceptance, warmth, commitment, trust, genuineness, and ability to be nonjudgmental are thought to be particularly essential for establishing a therapeutic relationship [2]. Interactions are influenced by several factors, including the experiences, attitudes, and perceptions brought to the relationship by the nurse and the patient.

Nurse

Nurses, as do patients, live in a society that often is obsessed with food intake, body size, and dieting behavior. Issues of body weight and shape may hold particular meaning for some professionals who are experiencing their own related struggles. These issues may lead to the caregiver's feeling shame, ambivalence, and even envy when working with patients who embody the idealized body size. These issues may contribute to over-identification with and minimization of the patient's pathologic behavior and cognitive distortions, particularly those related to body image, food restriction, and exercise. For others, anorexia and bulimia nervosa are perceived as counterintuitive disorders. It can be difficult to imagine why a person purposefully would starve himself or herself to the point where the body is wracked with symptoms of malnutrition or why a person would ingest excessive amounts of food then be compelled to use extreme measures to rid it from the body. It can be normal for the nurse to feel perplexed and frustrated with why the patient simply does not eat because such behavior can challenge the core values of the nurse [24]. Particularly for nurses new to working with this population, the skeletal thinness of some anorexic patients can be viscerally shocking and may evoke feelings of disgust or anger or desire to take control and nurture the patients back to health.

Because patients with eating disorders are typically intellectually bright and engaging and, with the exception of emaciated states or significant comorbidity, appear otherwise nonimpaired, the severity of their disorder and distress may be underestimated. Particularly on a busy inpatient unit where other patients' symptoms of mental illness may be more overt, the needs of patients with eating disorders are at risk for being secondary to others because they erroneously are perceived as less sick. Keeping in mind the mortality rates associated with this population and the significant medical complications, it is crucial that the nurse not be derailed by such misinterpretations because eating disordered patients are significantly ill.

Patient

Hospitalization itself may evoke many feelings in the patient that are likely to affect the therapeutic relationship. Hospitalization often occurs as a result of medical instability or significant comorbidity or as a result of the influence of a parent, loved one, or therapist. It does not usually happen as a result of insight by the patient because denial of the severity of the disorder is classic. Patients who are hospitalized involuntarily may express complete

denial of illness and a sense of having no control over the present situation. Hospitalization often results in feelings of powerlessness in a person who already experiences little control over most aspects of his or her life. For many, loss of control heightens issues of trust that play a crucial role in the therapeutic relationship.

For the patient, hospitalization often is perceived to be in direct opposition to the patient's desire to maintain control over his or her body weight and pursuit of thinness. This wish for control often is expressed through excessive rigidity, which is likely to be a desperate attempt to maintain a sense of self-efficacy and order in a world perceived as frighteningly chaotic and threatening. It is important to be attentive to issues of control because these can lead to a dynamic of power struggles between the patient and nurse. Additionally, hospitalization heightens a sense of fear of weight gain. For the anorexic patient, the goal of hospitalization is exactly what they have been desperately avoiding—weight gain. Anxiety and fear are often central to the patient's daily experience. Feelings of distress or dread frequently compete for the patient's attention while the care provider or parent earnestly tries to engage the patient. This can represent a significant barrier to communication. The eating disorder may be itself an identity for the patient, and the thought of no longer having it may contribute to a sense of overwhelming trepidation [25].

Nursing plan of care

Key areas of assessment

Assessment includes a comprehensive evaluation of chief complaint, social and development history, family history, medical history, psychiatric history, and mental status. Additionally an assessment of coping mechanisms, resources, and social support should occur. Additional key areas pertinent to the assessment of the patient with an eating disorder are discussed in more detail.

Chief complaint

The patient's chief complaint and reason for hospitalization provide information regarding insight, primary concerns, motivation for treatment, and possible compliance with the treatment regimen. In a preliminary study, compliance at admission predicted less body image disturbance and impaired eating behavior at discharge, pointing to a potentially important role in inpatient treatment [26].

Developmental and social history

Plotting developmental milestones and social history on a time line can be informative, particularly when assessing the relationship of events with onset and duration of eating behavior symptoms. Assessment of

developmental tasks, such as individuation, separation, and identity, provides an indication of maturational milestones and crisis. A social history includes academic progress, occupation, peer relations, activities, traumatic events, and drug and alcohol use. Patients often describe social influences affecting their desire to change their body shape or weight, such as childhood teasing about weight or externally imposed weight restrictions of extracurricular activities such as crew, ballet, gymnastics, cheerleading, and wrestling. The amount of time spent preoccupied with body shape and weight and the amount of time spent on compensatory behaviors often leave these individuals socially isolated. Patients who binge tend to avoid eating with others because of fear of losing control of eating in a social setting.

Alcohol and drug use often start in a social context with peers. Because of the prevalence of comorbid substance abuse in eating disorders, careful review of alcohol and drug use is necessary. This includes the amount, frequency, and duration. Some drugs (eg, stimulants, caffeine, diet pills) may be abused because of their effects on metabolism and weight loss. Patients with bulimia nervosa may report binge drinking. Associated blackouts and loss of consciousness should be noted.

Family history and functioning

The family is an important area of assessment for understanding its potential influence on the patient and the meaning of the eating disorder symptoms. The family is a source of information about the patient's pre-morbid functioning. Family norms related to eating and meal times, perceptions of body weight and shape, cultural values related to food and body shape, history of obesity, and history of eating disorders and other psychopathology are areas to explore. Assessing the relationships among family members provides data about discord, boundaries, enmeshment, intrusiveness, trauma, and extreme criticism. Plotting family events on a time line, including births, deaths, separations, and divorces, provides an opportunity to assess the relationship to onset or severity of eating-related symptoms.

Medical history and current medical problems

A medical history, in addition to information obtained from a physical examination, is important to assess (1) previous illnesses, (2) medical complications secondary to the eating disorder, and (3) other potential medical and psychiatric conditions that may be the underlying cause of apparent eating disorder symptoms. Some patients report their eating disorder began after a medical illness in which they lost weight (e.g., mononucleosis). Although there is no evidence for causality, it may be that the unintended weight loss stimulates a preoccupation with body weight and shape in vulnerable individuals. Medical complications of an eating disorder are many and are summarized in Table 1. These complications are largely a consequence of malnutrition, starvation, binge eating, purging behavior,

Table 1
Medical complications

System	Signs and symptoms
Cardiovascular	Bradycardia (<60 beats/min), hypotension (<90/60 mm Hg), orthostatic hypotension, cardiac palpitations and arrhythmias (associated with hypokalemia), electrocardiogram abnormalities (nonspecific S-T wave changes, prolonged Q-T interval [seldom associated with sudden death], U waves [in the presence of hypokalemia and hypomagnesemia]), cardiomyopathy (associated with emetine toxicity from abuse of syrup of ipecac) AN: * Congestive heart failure (rare; associated with rapid refeeding), sudden death (rare; associated with prolonged Q-T interval and arrhythmia)
Dermatologic	Abrasions on the knuckles (Russell's sign; related to self-induced vomiting), dry scaling skin AN: Brittle hair and nails, loss of hair (related to malnutrition), lanugo, loss of subcutaneous fat, yellow hue of skin (related to hypercarotenemia)
Endocrine and metabolism	Amenorrhea, hypoglycemia, enlarged parotid glands (associated with bingeing and purging), hyperamylasemia; decreased estrogen, luteinizing hormone, follicle-stimulating hormone, testosterone (males), thyroxine, and triiodothyronine AN: Hypothermia, cold intolerance; increased growth hormone, cortisol, cholesterol, and liver function tests
Fluid and electrolytes	Dehydration, elevated blood urea nitrogen, hypokalemia, hypomagnesemia, hyponatremia, hypophosphatemia (related to frequent vomiting), metabolic alkalosis (elevated sodium bicarbonate; related to vomiting), metabolic acidosis (reduced sodium bicarbonate; related to laxative abuse) AN: Peripheral edema (with refeeding)
Gastrointestinal	Constipation, diarrhea (related to laxative abuse), bloating, delayed gastric emptying, gastric distention, gastric rupture (rare; related to binge eating), abdominal cramps, reflux, hematemesis, esophagitis (related to self-induced vomiting), esophageal tear (Mallory-Weiss tears; rare), dental caries, enamel erosion (related to self-induced vomiting), sensitive teeth
Hematologic	Bone marrow suppression (related to phenolphthalein-containing laxatives), anemia AN: Leukopenia, thrombocytopenia, hypophosphatemia (related to starvation, refeeding), decreased albumin
Musculoskeletal	AN: Fractures, osteopenia, osteoporosis
Neurologic	Fatigue, depression, vertigo, syncope, pontine myelinolysis (rare; associated with diuretic abuse) [34]
Pulmonary	AN: Pulmonary edema (rare; associated with rapid refeeding)

* Specific to anorexia nervosa (AN).

Adapted from Carney CP, Anderson AE. Eating disorders: guide to medical evaluation and complications. *Psychiatr Clin N Am* 1996;19:657–79; with permission.

Table 2
Differential diagnoses for eating disorder symptoms

Symptom	Differential diagnoses
Weight loss	Depression, alcohol abuse/dependence, substance abuse/dependence (eg, stimulants), peptic ulcer disease, hyperthyroidism, adrenocortical insufficiency, AIDS, cancer
Uncontrollable or increased eating	Prader-Willi syndrome, Kleine-Levin syndrome
Preoccupation with body shape	Body dysmorphic disorder

and refeeding [27]. Differential medical and psychiatric diagnoses that may mimic some symptoms of the eating disorder are presented in Table 2.

Treatment history

History of psychiatric treatment includes details about current outpatient treatment before hospitalization, past outpatient treatment, residential and day programs, and prior hospitalizations. Date, duration, therapist, location, diagnosis, treatment modality, response, and nonresponse are noted. History of pharmacologic intervention is useful, including specifics on type and name of medications used, dose, frequency and duration of use, targeted symptoms, patient response, and perceived efficacy. Adjunct therapies, including nutritional counseling, group therapies, and support groups, provide information on the resources available to the patient and use of various modes of intervention. Adherence and compliance with previous treatment regimens should be assessed, and barriers should be identified.

Mental status

A mental status examination is indicated on admission. In addition to the standard areas of a mental examination, areas of particular concern include assessment of mood and affect, given the high comorbidity of affective illness and depressive symptoms associated with starvation states. A thorough assessment of suicidal ideation, plans, and attempts is indicated. Psychomotor function, appearance, and speech also may provide information about the presence of depressive symptoms. Judgment, reliability, and insight are likely to be more impaired during an acute stage of illness.

Eating patterns and compensatory behaviors

Assessment of eating patterns includes number of meals and snacks per day, types and amount of foods and liquids consumed, and situations when and where eating occurs. Patients are asked about self-imposed calorie restriction and dieting behavior. Some patients with anorexia nervosa report limiting themselves to 200 to 500 kcal per day. This limitation is significant considering that the average daily caloric intake for young women is 2000 to 2200 kcal. Patients with anorexia nervosa are quick to provide details about

their food intake, often exhibiting a sense of pride and success with regard to the limited amount. Patients with bulimia nervosa are often reluctant to disclose what they eat, particularly when asked about the size of binge episodes.

As with food and fluid intake associated with meals, information about binge episodes is useful. Typically, these episodes occur in secret, and frequency is variable, ranging from a couple of times a week to several times a day. The number of binge episodes per day, types and amount of food and liquids consumed, where they take place, duration of binge (eg, typically 15 minutes to 1 hour), associated feelings, and precipitating events are assessed. Binge episodes are described as out of control—once they get started, the patient is unable to stop them. Binges are composed of foods high in fat and carbohydrate and foods that are easy to ingest and purge. These episodes are high in caloric intake, typically ranging from 1500 to 3000 kcal, although they can be significantly more. One report suggests an average caloric intake of 2800 kcal per episode, although this figure may be conservative because of the associated shame and embarrassment with reporting these details [28]. The binge episodes result in exceeding the body's daily caloric requirement and placing the individual at risk for weight gain. To compensate for the additional calories, the patient resorts to inappropriate behaviors directed at weight loss.

Assessment of compensatory behaviors includes type and frequency. Although patients typically engage in several methods, self-induced vomiting is the most common. Patients often use a toothbrush, utensil, or finger to elicit a gag reflex and vomit. Some individuals are able to induce vomiting without stimulation of the uvula, and others turn to the use of syrup of ipecac. In cases of the latter or for patients who use diuretics, diet pills, and laxatives, quantity is important; initially they may take one tablet a day but, over the course of time, increase to one box a day. Duration, amount, and frequency of abuse inform the need for tapering interventions of laxatives. Daily exercise also should be reviewed for the excessiveness. Some patients report compulsive exercising for 3 to 4 hours per day to expend calories. Although daily exercise, 30 minutes a day at least 5 days per week [29], currently is recommended for health promotion and disease prevention, information about the frequency, duration, purpose, and timing relative to a binge episode assists in determining the extent to which it is used as a compensatory behavior. Fasting, particularly in patients with anorexia nervosa, can endure for several days at a time. Some individuals report other means of compensatory behaviors. The assessment should not be limited to the previously listed methods; patients should be asked what they do to prevent weight gain. Compensatory behaviors are associated with significant medical complications (see Table 2).

Other core eating disorder symptoms

Self-esteem, body image, and cognitive disturbances. Patients with anorexia and bulimia nervosa experience reduced self-esteem and distortions in body

image. Self-esteem is influenced markedly by perceptions of body shape and weight, usually resulting in negative self-worth. After a binge episode, patients typically experience a sense of disgust and low self-worth. Self-esteem may be influenced by other factors, including comorbid depression, failure at achieving the socially idealized body shape, and other stressors external to the eating disorder. For the anorexic patient, disturbance in body image is most evident in their desperate complaints of being too fat when they may weigh only 68 lb. Anorexic and bulimic patients tend to have a magnified sense of their own body shape, particularly with regards to the stomach, thighs, and buttocks.

In addition to altered perceptions of body image, patients exhibit cognitive distortions relative to their belief system around food and weight. Foods typically are classified into either “good” or “bad” foods, reflecting dichotomous thinking. Attitudes toward the bad foods may reflect a phobic-type response or illogical beliefs, such as if the foods are eaten, the person automatically is a failure. Cognition, reflecting magical thinking, also may occur, including the belief that if one eats a particular food, it immediately will result in fat deposits to the hips. Such distortions are evident in the perceived worshipping of thinness despite life-threatening consequences.

Body weight. A history of body weight is useful for assessing past history of anorexia nervosa and obesity. When plotted on a timeline, precipitating factors may be identified more readily. Obtaining highest and lowest adult weight and high and low weights during the past month and past 6 months provides an indication of severity of fluctuations and possibly compensatory behaviors used to achieve weight loss. For children and adolescents, weight should be assessed using a growth chart. Sometimes relative body weight is expressed as body mass index (BMI), calculated as weight (kg) divided by the square height (m²).

Menstrual cycle. For postmenarcheal women, onset of menses, regularity, and use of hormones (eg, oral contraceptives) to induce menstruation are assessed. By definition, patients with anorexia nervosa exhibit the absence of at least three consecutive menstrual cycles. Patients with bulimia nervosa also frequently experience irregular cycles and possibly amenorrhea at a normal body weight. Assessment of sexual activities, including method of birth control, is indicated because some patients mistakenly think that irregular cycles means they are unable to conceive.

Nursing diagnoses, desired outcomes, goals, and interventions

Because clinical presentation can be varied, many nursing diagnoses and desired outcomes may be relevant to the care of patients with eating disorders. Table 3 presents the more commonly applied nursing diagnoses to this population and corresponding related factors, defining characteristics,

and evaluation criteria central to the plan of care. Nursing interventions are determined based on the individual patient's nursing needs, goals, and overall interdisciplinary treatment plan.

Aims of hospitalization

Many patients with eating disorders are treated in an outpatient setting. Hospitalization occurs with patients who are severely malnourished and at a low weight, making them at risk for medical instability; patients who have medical complications; and patients with significant comorbid psychopathology. The aims of hospitalization are to restore healthy weight, treat medical complications and psychiatric comorbidity, improve cognitive functioning related to the eating disorder, enhance motivation, provide education, engage family in support, and address relapse prevention [30]. Treatment is multidisciplinary, and a team approach is integral to the recovery of the patient.

Targeted interventions

Examples of possible nursing interventions corresponding to respective nursing diagnoses are presented in Table 4. Additional key areas of consideration are discussed in greater detail here.

Cognitive disturbances. Cognitive-behavioral techniques frequently are used to address altered perceptions that are related to the eating disorder. These strategies are introduced after initial stabilization, when the patient is better able to benefit from them. Tactics include exploring belief system supporting maladaptive behaviors; assigning particular tasks (eg, creating a list of positive and negative self-attributes); exploring alternative adaptive behaviors (eg, listing diversion activities, such as listening to music, watching television, or reading); self-monitoring (diaries); and restructuring beliefs, attitudes, and misperceptions. Interventions target incremental change, allowing realistic success. Patients with anorexia nervosa need to be particularly prepared for increased anxiety as they gain weight and progress through treatment. In addition, encouraging attendance at therapy sessions, group therapy, family therapy, and nutritional counseling assists to improve cognitive functioning.

Nutritional requirements, meal patterns, and body weight. For patients with anorexia nervosa, target weight needs to be established collectively by the treatment team and patient. A minimum goal weight of 90% of expected weight is recommended [30]. A safe rate of weight gain is approximately 2 to 3 lb per week. To achieve this, food intake is approximately 30 to 40 kcal/d and increased to 70 to 100 kcal/d [30]. This means starting in the range of 1000 to 1600 kcal/d and increasing to 2100 to 4000 kcal/d in 500-kcal increments over 4 to 5 days [30]. For children and adolescents, when goal weight is achieved, weight maintenance requirements are 40 to 60 kcal/d to

Table 3
 Example of nursing diagnoses related to the care of patients with eating disorders*

Nursing diagnoses	Related to	Evidenced by	Desired outcome
Anxiety	Perceived threat to physical body, body image, and self-concept	Expressed concern, apprehension, fear, anguish, distress; preoccupation with body shape and weight; compulsive and ritualistic behavior; difficulty concentrating; decreased ability to problem solve; nonverbal cues (eg, facial tension, psychomotor agitation)	Reduce anxiety as evidenced by appearance and self-report; acknowledge and discuss fears; recognize healthy and unhealthy fears; identify signs and symptoms of anxiety; identify and show techniques to decrease anxiety
Body image, disturbed	Cognitive distortions	Negative feelings about body shape and weight; expression of shame and guilt; concealment of body with oversized clothing; dependent on others' opinions; fear of rejection by others	Verbalize acceptance of body appearance; express congruence between body reality and perception; identify positive aspects about body
Cardiac output, decreased	Cardiomyopathy, arrhythmia	Bradycardia; hypotension; palpitations; electrocardiogram changes; fatigue	Exhibit adequate cardiac output as evidenced by normal blood pressure and pulse rate
Constipation	Decreased gastric emptying, poor eating habits, and dehydration	Decreased frequency; dry, hard, formed stools; straining with defecation; decreased bowel sounds; abdominal or back pain; palpable abdominal mass	Establish normal bowel elimination pattern (soft formed stool every 1–3 days); identify contributing factors and appropriate preventive strategies; exhibit adequate fluid and food intake; express relief from associated discomfort

Coping, family disabled	Ambivalent family relationships, resistance to treatment, issues of control, unexpressed feelings	Denial of existence or severity of patient's condition; intolerance, neglect, rejection, hostility, abandonment, enmeshment	Appropriately and openly express feelings; verbalize realistic understanding and expectations of patient; visit or contact patient regularly; participate positively in the care of the patient within limits of family's ability, patient needs, and treatment plan
Coping, ineffective	Anxiety, depression, maladaptive response patterns, inadequate social support, maturational crisis	Verbalized inability to cope or request help; impaired cognition and perceptions; diminished problem-solving capacity; use of maladaptive and self-destructive behaviors (eg, verbal manipulation, binge episodes, laxative abuse)	Identify ineffective coping behaviors and consequences; identify alternative coping strategies; show adaptive problem-solving skills; identify crisis prevention resources; remain free of self-destructive behaviors
Fluid volume deficit	Loss of fluid through inadequate intake, gastric losses (vomiting), diarrhea	Decreased urine output; concentrated urine; output exceeds intake; sudden weight loss; increased serum sodium and hematocrit; increased pulse; orthostatic hypotension; decreased blood pressure; thirst, weakness; poor skin turgor	Maintain fluid volume at a functional level as evidenced by adequate urinary output (>1300 mL/d), normal specific gravity, normal vital signs, moist mucous membranes, and good skin turgor; verbalize understanding of causative factors and preventive strategies; show behaviors promoting adequate hydration

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Table 3 (continued)

Nursing diagnoses	Related to	Evidenced by	Desired outcome
Fluid volume, excess, risk for	Excess fluid related to refeeding	Severe malnutrition requiring the need for refeeding	Stabilized fluid volume as evidenced by balanced intake and output (within 500 mL), normal vital signs, normal specific gravity, stable weight, and absence of edema; describe understanding of dietary/fluid restrictions; list signs that require further evaluation and notification of care provider
Deficient knowledge regarding condition, prognosis, and treatment needs	Inadequate understanding, lack of knowledge, cognitive distortions	Verbalized deficit; inadequate food and fluid intake and development of preventable complications; inadequate follow-through of instructions; misconception of weight loss through use of inappropriate compensatory behaviors	Participate in learning process; explain nutritional, psychological, medical, and social consequences of disorder; exhibit understanding of treatment regimen; list available resources after discharge
Noncompliance	Value system, health beliefs, cultural factors, motivation and readiness for change, care provider–patient relationships	Resistant behavior; nonadherence to treatment regimen; lack of progress; minimization of severity of illness; devaluation of treatment team plan and usefulness of therapy; development of complications related to symptom exacerbation	Identify consequences of noncompliance; participate in the development of treatment goals and plan; show understanding of disorder and treatment regimen

<p>Nutrition, imbalanced: less than body requirements</p>	<p>Insufficient dietary intake, decreased ingestion of food or nutrient absorption secondary to self-induced vomiting and laxative abuse</p>	<p>Body weight >15% below ideal (may be normal or overweight in bulimia nervosa); weight loss; impaired hunger and satiety; electrolyte imbalance; decreased metabolism; bradycardia; hypotension; weakness; amenorrhea; hair loss; lanugo; brittle nails; poor skin turgor; reduced muscle tone and subcutaneous fat; cold intolerance/hypothermia; laboratory findings of protein and vitamin deficiencies</p>	<p>Establish regular meal pattern and normal caloric intake to support and maintain normal body weight; show progressive gain toward goal weight; display normalization of laboratory values; free of signs of malnutrition; express understanding of causative factors and nutritional needs; show adequate food intake and abstinence from binge eating and use of inappropriate compensatory behaviors</p>
<p>Nutrition: imbalanced, more than body requirements</p>	<p>Food intake excessive relative to metabolic need</p>	<p>Report of binge-eating episodes; observed dysfunctional eating patterns</p>	<p>Verbalize understanding of nutritional needs and risk for weight gain; show appropriate behavioral change in eating patterns; identify alternative coping strategies rather than binge eating; exhibit abstinence from binge eating</p>
<p>Pain, acute</p>	<p>Abdominal cramping, irritation of epigastric and gastric mucosa, gastric distention</p>	<p>Verbal reports; facial grimacing; autonomic response (sudden or severe pain)</p>	<p>Verbalize pain relief; follow prescribed pharmacologic regimen; verbalize methods that provide relief; identify and exhibit strategies to prevent recurrence</p>

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Table 3 (continued)

Nursing diagnoses	Related to	Evidenced by	Desired outcome
Powerlessness	Hospitalization, helplessness	Expressed apathy, passivity, uncertainty, or lack of control over therapy or self-care; verbalized dissatisfaction or frustration with limits placed on maladaptive behaviors (eg, self-induced vomiting); inability to stop binge episodes; nonparticipation in care, dependence on others	State sense of control over the present situation and future outcomes; participate in decision making with regard to plan of care; identify areas within patient's control and those that are not
Self esteem, chronic low	Negative evaluation of self	Negative self-worth; expressed shame or guilt; rejection of positive feedback, dwells on negative feedback; indecisive; seeks reassurance repeatedly; dependent; self-value solely determined by body shape and weight	Show behaviors aimed at promoting positive self-esteem; verbalize increased sense of self-esteem and self-acceptance; identify personal strengths; set realistic and achievable goals; participate in decision making
Self mutilation, risk for	Borderline personality disorder, use of suicidal gestures to manipulate others, inappropriate means to release tension	Risk factors: history of self-injury (eg, cutting, burning, head banging, and/or punching/pinching); history of suicide attempts, impulsivity, or abuse; psychomotor agitation; inability to control anger; inability to verbalize feelings	Appropriately express feelings; identify precipitating events; express increased self-esteem; exhibit self-control as evidenced by absence of self-mutilation; engage in use of adaptive coping to manage negative feelings

Suicide, risk for	Impulsivity, major depression	<p>Risk factors: history of previous suicide attempts; major depressive episodes; clinically significant depressed mood; suicidal ideation, plan, gesture, or recent attempt; verbalization of feeling sad, blue, hopeless, life is not worth living</p>	<p>Remain safe and harm-free; verbally express feelings; remain free from access to harmful objects</p>
Thought, processes, disturbed	Cognitive distortions related to eating disorder	<p>Obsessional preoccupations, magical thinking, magnification, dichotomous thinking, personalization, and self-reference related to food intake, body image, self-concept</p>	<p>Exhibit improvement in cognitive distortions; identify triggers and cues; independently engage in activity of daily living</p>
Trauma, risk for	Loss of bone integrity	<p>Risk factors: long-term malnutrition, history of bone fractures or bone loss</p>	<p>Remain trauma-free; show appropriate behaviors aimed at reducing risk of injury</p>

* For additional resources see Ackley [35], Doenges [36], and North American Nursing Diagnoses Association [37].

Table 4

Nursing diagnoses and examples of related interventions for the nursing care of hospitalized patients with eating disorders

Nursing diagnoses	Potential interventions (determined by the individual case)
Anxiety	Assist to identify perceived threats; assess level of anxiety and physical response; listen and encourage to express feelings; acknowledge patient's fears; assist to identify precipitating events and signs and symptoms of anxiety; assess coping mechanism used to relieve anxiety; reinforce positive coping skills and teach additional options (eg, relaxation techniques); develop plan to try alternative measures for relief of anxiety; provide positive reinforcement and feedback for use of adaptive measures; administer antianxiety agents as ordered
Body image, disturbed	Assess motivation for change, body perception, impact on functioning, and family and social influences contributing to disturbance; determine extent to which patient's body image is congruent with reality (eg, have patient draw self on wall with chalk, then compare with actual body outline); allow for expression of fears; assist to correct distortions through use of journal of thoughts, feelings, and assumptions related to body image and supporting and refuting evidence for beliefs; explore positive and negative aspects of the body
Cardiac output, decreased	Review and monitor laboratory findings (eg, complete blood count, electrolytes, blood urea nitrogen, and report abnormal values to primary clinician; monitor vital signs; review diagnostic studies (eg, electrocardiogram), monitor fluid input and output; restrict fluids as ordered; explain dietary restrictions (eg, low sodium); provide skin care with frequent positional changes to avoid pressure sores (anorexia nervosa); elevate feet if edema present; educate about positional changes to avoid orthostatic hypotension and about signs of improved cardiac output (eg, reduced peripheral edema, improved vital signs or blood pressures)
Constipation	Assess contributing factors, including medication; discuss usual elimination patterns and initiate regular schedule; use diary for self-monitoring of frequency, time of day, and characteristics of stool; encourage fluids (1.5–2 L/d; 6–8 glasses of water, as cardiac output permits) and fiber (25 g/d for adults); assess for pain; auscultate abdomen for bowel sounds; palpate abdomen for distention and masses; administer gastrointestinal agents as ordered; educate about role of diet and fluid intake on normal bowel function; assist in creating a plan if problem reoccurs
Coping, ineffective	Assess insight and motivation for change, impact of illness, risk for suicide, and previous use, effect, and types of coping; explore fears and sense of control; assist to identify needs that are being met with sick role; address manipulation directly and openly; use food diary to self-monitor factors precipitating urge to binge and engage in compensatory behaviors; identify list of at-risk situations vulnerable to ineffective coping; use role playing to teach and model problem-solving skills; teach alternative coping strategies (eg, assertiveness techniques); provide positive feedback and build in self-reward for successful coping (eg, abstinence from self-induced vomiting)

Table 4 (continued)

Nursing diagnoses	Potential interventions (determined by the individual case)
Coping, family disabled	Establish rapport with available family members; maintain effective communication; meet to assess contributing factors to disabled coping and identify strengths; explore impact, perceptions, and meaning of patient's illness; encourage questions, expression of feelings and concerns, and participation in therapeutic activities (eg, family therapy, groups, visits); provide reality-based information to address unrealistic expectations and perceptions of severity of illness; help to establish appropriate boundaries between family members; assist to reframe negative comments or criticism; provide appropriate referral and information on additional resources (see Table 5)
Fluid volume deficit	Monitor fluid intake and output and fluctuations in daily weight (anorexia nervosa); encourage fluid intake of 2000–3000 mL daily; assess mucous membranes and skin turgor; monitor orthostatic blood pressure (lying, sitting, standing) every 4 hours and more frequently if indicated (eg, vertigo); accompany to bathroom if self-induced vomiting suspected; review laboratory results and report abnormal values to primary clinician; educate about fluid intake needs, skin care, and positional changes to avoid orthostatic hypotension (15 mm Hg drop when upright; pulse increase of >15 beats/min); explore feelings and fears associated with increased fluid intake, promote oral hygiene and provide dental referral (self-induced vomiting)
Fluid volume excess, risk for	Be aware of signs and symptoms of fluid overload associated with refeeding (anorexia nervosa), monitor vital signs regularly, note presence of edema and patterns of urination, review laboratory data (blood urea nitrogen, creatinine, hemoglobin, hematocrit, electrolytes, urine specific gravity) and report abnormal findings to primary clinician; assist patient to identify danger signs requiring notification of health care provider
Deficient knowledge regarding condition, prognosis, and treatment needs	Assess level of knowledge related to disorder, prognosis, nutritional, psychological, social and physiologic factors, treatment (eg, therapy, medications) and medical complications; assess readiness and ability to learn; identify support persons in need to information; use variety of teaching tools to engage patient (eg, didactic, audiovisual, printed materials); provide active role for patient in learning process; discuss laboratory findings, including purpose of test, normal values, and results; provide feedback and evaluation of learning; provide referral information, community resources, and additional informational resources before discharge (see Table 5)
Noncompliance	Discuss perception and understanding of disorder; listen to concerns and complaints; assess level of anxiety and sense of control; clarify value and belief system; assist to identify meaning and precipitants of behavior; engage in mutual goal setting; identify treatment strategies more appealing and strategies likely to lead to noncompliance; contract for participation in care; provide information to patient; establish incremental goals

(continued on next page)

Table 4 (continued)

Nursing diagnoses	Potential interventions (determined by the individual case)
Nutrition imbalance: less than body requirements	Establish goal weight with treatment team and patient; establish daily caloric intake regimen for weight stabilization and eventual weight gain in collaboration with nutritionist; establish structure surrounding meals (eg, duration, setting, consequences if food not consumed), exercise patterns, weight measurements, and bathroom routines; assess understanding of nutritional needs; record fluid and food intake; calculate daily caloric intake; monitor vital signs including orthostatic blood pressure, review laboratory results and report abnormal finding to primary clinician; monitor meals; observe for 1 hour after meals to deter purging; accompany to bathroom if vomiting or excessive water intake is suspected; explore feelings associated with food intake; refocus efforts directed at preoccupation with food; administer nutritional supplements as indicated; provide small frequent snacks; limit caffeine intake to 1 beverage daily; provide positive feedback for improved eating behavior; provide opportunities for feeling a sense of control (eg, offer choices), when possible; teach to recognize normal hunger and satiety signals
Nutrition, imbalance: more than body requirements	Assess knowledge of nutritional needs, ascertain perceptions of food and binge episodes; implement self-monitoring with food diaries to assist in identifying precipitating events, feelings, consequences, and other associated factors; calculate total caloric intake; assess degree of dietary restriction; provide positive reinforcement for successful nonbinge days; identify diversion activities to use in response to the urge to binge; identify high-risk situations for binge eating; avoid daily monitoring of weight (bulimia nervosa); identify normal hunger and satiety signals
Pain, acute	Assess location, onset, duration, frequency, quality, and precipitating and aggravating factors; determine cause of pain (eg, gastritis, constipation); monitor vital signs; review previous experience with pain and methods of relief; encourage verbalization of pain; assist in pain prevention strategies (eg, abstinence of vomiting, relief of constipation)
Powerlessness	Determine perception of control; provide opportunities to express feelings and concerns; encourage questions; express hope for the patient; assist to identify strengths, assets, and past effective coping; identify areas beyond control and areas in which patient can actively participate; provide opportunity to make as many decisions as possible and as appropriate; minimize rules, the reduce continuous observation as safety allows; model problem-solving technique and explore new strategies; include patient in setting goals of care; allow to establish schedule of self-care activities; assist in setting incremental and achievable goals and provide positive reinforcement of successes
Self-esteem, chronic low	Assist patient to identify contributing factors and negative and positive self-attributes; encourage independent decision making and participation in treatment planning; provide positive reinforcement for independent decision making; encourage expression of anger as appropriate; provide reality testing to assist recognition of unrealistic self-perception; assist to identify positive

Table 4 (continued)

Nursing diagnoses	Potential interventions (determined by the individual case)
Self-mutilation, risk for	self-attributes not related to body shape and weight; redirect patient when comparing self with others; encourage socialization Assess for impulsivity, unpredictability, and intense and uncontrolled anger; assist to identify feelings and behaviors that precede urge to self-mutilate and consequences of self-mutilation (eg, perceived advantages and disadvantages); assist to express feelings appropriately; structure milieu to maintain open communication among staff and patients; assess for splitting or manipulation of staff; encourage involvement in plan of care; mobilize support systems; develop safety contract by which patient agrees not to self-mutilate in next 8 hours and renew before expiration
Suicide, risk for	Spend time with the patient; assess potential for self-harm by asking directly about thoughts of killing self, plans, intent, and method; create and maintain safe environment (remove sharp items, glass, ties, straps, belts); acknowledge reality of suicidal feelings; employ contract that patient will not harm self during next 8 hours and will remain in view of staff (renew before expiration); monitor closely as energy increases and mood improves (greater risk to act on thoughts); encourage talking about feelings; help to identify hope; provide with as much control as possible within limits of providing safe environment; identify current and past strengths and successes; remain calm and state limits on inappropriate behavior; explore death fantasies when expressed; identify and engage support system; identify community resources; establish plan for seeking help in event of crisis
Thought processes, disturbed	Assess mental status, after stabilization, use self-monitoring diaries to test illogical thinking; have patient list supporting and refuting evidence regarding beliefs and positive and negative consequences of distorted thinking; assist to recognize relationship between feelings and symptoms; introduce diversional activities to interrupt preoccupations; administer medications as ordered (eg, antianxiety/antidepressant agents); encourage adequate food and fluid intake
Trauma, risk for	Orient patient to environment; ensure use of nonskid footwear; encourage adequate nutritional intake; implement exercise restrictions; administer calcium supplements as ordered; provide information and anticipatory guidance with regard to bone density testing procedures as ordered

allow for growth and development [30]. The number of calories ingested per day needs to be monitored to ensure that patients consume the necessary requirements to achieve weight gain. This is particularly important given that patients who are discharged at weights lower than that targeted are at greater risk for relapse and rehospitalization [31]. For patients showing excessive intake, the possibility of disposing food or use of compensatory behaviors should be assessed. The use of nasogastric feeding is uncommon,

Table 5
Potential North American resources*

Organization	Website
Academy for Eating Disorders (AED)	http://www.aedweb.org
Anorexia Nervosa and Bulimia Quebec	http://www.generation.net/~anebque
British Columbia Eating Disorders Association	http://www.preventingdisorderedeating.org
Compulsive Eaters Anonymous-HOW	http://www.ceahow.org
Eating Disorders Anonymous (EDA)	http://www.eatingdisordersanonymous.org
Eating Disorders Association of London Ontario	http://www.eating-disorder.org/scared.html
Eating Disorders Association of Manitoba	http://www.edam.mb.ca
Eating Disorders Coalition	http://www.eatingdisorderscoalition.org
Eating Disorder Referral and Information Center	http://www.edreferral.com
Family Resources for Education on Eating Disorders	http://www.cpcug.org/user/rpike/freed.html
Food Addicts Anonymous	http://www.foodaddictsanonymous.org
Healing Connections, Inc.	http://www.healingconnections.org
HUGS International, Inc. (HUGS)	http://www.hugs.com
International Association of Eating Disorders Professionals	http://www.iaedp.com
National Association to Advance Fat Acceptance	http://www.naafa.org
National Association of Anorexia Nervosa and Associated Disorders (ANAD)	http://www.anad.org
National Center for Overcoming Overeating	http://www.overcomingovereating.com
National Eating Disorders Association	http://www.nationaleatingdisorders.org
National Eating Disorder Information Centre	http://www.nedic.ca
Overeaters Anonymous (OA)	http://www.overeatersanonymous.org
Screening for Mental Health, Inc.	http://www.mentalhealthscreening.org/eat.htm
The Body Image Coalition of Peel, Ontario Canada	http://bodyimage.castle.on.ca
The Eating Disorders Action Group	http://www.e-d-a-g.com

* Representative listing. Content of websites can be variable and should be assessed for accuracy and appropriateness.

but this method is used in life-threatening situations. Nasogastric feeding is associated with significant risks for fluid overload and cardiac failure associated with rapid refeeding [30]. Cardiac monitoring is recommended for malnourished children and adolescents whose body weight is less than 70% of that expected [30].

Establishment of a protocol identifying structural and monitoring procedures is useful. In addition to specifying the required daily caloric intake, structure with regard to meals and snacks needs to be addressed. Meals occur in a dining setting if possible, with strict visual monitoring to ensure that the patient ate the meal. Strict monitoring for 1 hour after meals is used to prevent purging behavior. Plans need to specify the consequence

for meals not eaten; typically this involves replacement of missed calories with nutritional supplements (eg, Ensure). Supplements are consumed at the same setting where meals occur. Time frame of a meal is specified, with duration lasting 30 minutes. On initial stabilization of meal pattern, involvement of the patient in food selection occurs.

Frequency of weight monitoring also is specified in the protocol. Body weight measurements are obtained on admission after voiding and while in a hospital gown. Subsequent weights are obtained on a daily basis in the morning at the same time of day, using the same scale, after voiding, and while wearing a hospital gown. The possibility of a patient's use of measures to weigh down their hospital gown or excessive drinking of fluids before weighing needs to be considered. Weights should be reassessed immediately for accuracy in the event of a weight change of 2 lb or more in the course of 24 hours. Although the issue of whether or not to tell the patient his or her weight is unsettled, the amount generally is not disclosed to the anorexic patient during the initial phase of hospitalization to avoid exacerbation of already significant anxiety. Nutritional education and counseling are indicated.

Exercise. For patients with anorexia nervosa, exercise is restricted on admission because calorie expenditure defeats the goal of weight gain. On achieving goal weight, supervised exercise is reintroduced gradually into activities of daily living and directed at health promotion and fitness rather than weight loss. After hospitalization, patients may benefit from the effects of weight-bearing exercise because it is thought to be important in preventing bone loss.

Medications. With anorexia nervosa, medications such as antidepressants and anti-anxiety agents are used most frequently after weight restoration and normalized eating behavior. Medications may be indicated in the presence of significant comorbidity. Low-weight states may make these patients more vulnerable to side effects, however. For patients with bulimia nervosa, antidepressants, including selective serotonin reuptake inhibitors, tricyclics, and monoamine oxidase inhibitors, have been shown to have a therapeutic effect on decreasing frequency of binge-eating episodes [32]. Selective serotonin reuptake inhibitors tend to have a more favorable and tolerable side-effect profile compared with the other classes of antidepressant agents. Tricyclics pose difficulties with hypotension, and monoamine oxidase inhibitors are avoided given the required dietary tyramine restrictions. Bupropion specifically is contraindicated given observations of associated seizures in patients with purging-subtype bulimia nervosa [33]. To date, fluoxetine is the only drug approved by the Food and Drug Administration to treat bulimia nervosa. Other agents may be used to relieve medical complications, such as bloating and reflux (H_2 -blockers), and calcium supplements may be used [27]. Use of laxatives (or enemas) to relieve constipation are restricted to a one-time use [27].

Milieu. Visitors initially are restricted, with family visits limited to therapy sessions because family members may increase the patient's anxiety related to weight gain. As clinical presentation improves, visits are allowed and integrated into a reward system. Kitchen restrictions are put in place to prevent hoarding of food and binge eating. Clear communication with staff regarding activity level, monitoring procedures, and privileges is essential.

Summary

Effective nursing care for hospitalized patients with anorexia nervosa or bulimia nervosa is based on a comprehensive assessment, including medical and treatment history, mental status, and core eating disorder symptoms. Although most patients with an eating disorder are treated in an outpatient setting, hospitalization is appropriate for patients experiencing severe malnutrition or comorbidity or who are at increased risk for medical instability. Inpatient nursing care is directed at optimizing health status, including focused interventions directed at improving nutrition, cognition, coping, and medical stability.

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