



Sri Lakshmi Narayana Institute of Medical Sciences

Date:02.06.2021

From
DR.V.R Sridhar
Professor and Head,
Department of Psychiatry,
Sri Lakshmi narayana institute of medical sciences,
Bharath Institute of Higher Education and Research,
Chennai.

To
The Dean,
Sri Lakshmi narayana institute of medical sciences,
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Feeding And Eating Disorders Along With Its Management

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: **Feeding And Eating Disorders Along With Its Management** on 1/07/2021. We solicit your kind permission for the same.

Kind Regards Dr.V.R. Sridhar

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: **Dr. Jayakumar**

The HOD: **Dr. Sridhar.V.R**

The Expert: **Dr. Arun.S**

The committee has discussed about the course and is approved.

Dean

(Sign & Seal)

Subject Expert

(Sign & Seal)

HOD

(Sign & Seal)

Dr. P. JAYAKUMAR, M.S., M.CH.,
DIRECTOR / DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Post, Pondicherry-605502.



OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Circular

15.06.2021

Sub: Organising Value-added Course: Classification of Feeding and Eating Disorders Along with Its Management

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing “**Classification of Feeding and Eating Disorders Along with Its Management**”. The course content and registration form is enclosed below.”

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 30 June 2021. Applications received after the mentioned date shall not be entertained under any circumstances.



Dean

DR.JAYAKUMAR

Dr. P. JAYAKUMAR, M.S., M.CH.,
DIRECTOR / DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Post, Pondicherry-605502.

Encl: Copy of Course content

Course Proposal

Course Title: Awareness, Identification and Classification Feeding And Eating Disorders Along With Its Management

Course Objective:

Awareness on the importance of eating disorders

Awareness On The Contributing Factors To eating Disorders Biopsychosocial Model Of Approach

Identify diagnostic criteria for eating disorders

Course Outcome:

Course Audience: FINAL YEAR STUDENTS of 2021 Batch

Course Coordinator: Dr.V.R. Sridhar

Course Faculties with Qualification and Designation:

1.Dr.V.R.SRIDHAR, Professor & HOD

2.Dr.Arun, Assistant Professor

Course Curriculum/Topics with schedule (Min of 30 hours)

SlNo	Date	Topic	Resource person	Time	Hours
1.	1.07.2021	<ul style="list-style-type: none">• Regulation of body weight• Central neural pathways and integration in the control of food intake• Decreased peripheral hormonal negative-feedback control of food intake and body weight in obesity• Prevalence and demographics of dieting	Dr.Arun	4-6p.m	2
2.	6.07.2021	<ul style="list-style-type: none">• Leptin and body weight• Prenatal effects on body weight• Taste, eating, and body weight	Dr.Arun	2-5p.m	3
3.	13.07.2021	<ul style="list-style-type: none">• Physiological adaptations following weight reduction• Body composition• Body composition• Energy expenditure and the regulation of energy balance• Macronutrients, energy balance, and body weight regulation	Dr.Ahalya	4-6p.m	2

4.	20.07.2021	<ul style="list-style-type: none"> • Cognitive neuroscience and the risk for weight gain • Body weight and neurocognitive function • Psychological and Social Factors • Acquisition of food preferences and eating patterns in children • Parental food rules and children's eating : intended and unintended consequences 	Dr.Arun	4-6p.m	2
5.	27.07.2021	<ul style="list-style-type: none"> • Sociocultural influences on body image and eating disturbance • Stigma, discrimination, and obesity • Body image, obesity, and eating disorders 	Dr.Ahalya	4-6p.m	2
6.	2.08.2021	<ul style="list-style-type: none"> • Body dysmorphic disorder 	Dr.Ahalya	4-5p.m	2
7.	9.08.2021	<ul style="list-style-type: none"> • Eating disorders • Clinical characteristics of eating disorders • Classification of eating disorders 	Dr.Ahalya	4-6P.M	2
8.	12.08.2021	<ul style="list-style-type: none"> • Anorexia nervosa / Evelyn Attia • Pamela K. Keel • 	Dr.Arun	4-6p.m	2
9.	13.08.2021	<ul style="list-style-type: none"> • Severe and enduring anorexia nervosa 	Dr. Shridhar	4-6p.m	2
10.	15.08.2021	Bulimia nervosa	Dr.Arun	4-6p.m	2
11.	16.08.2021	<ul style="list-style-type: none"> • Binge eating disorder • Binge-eating disorder • Avoidant/restrictive food intake disorder • Night eating syndrome 	Dr.Arun	4-6p.m	1

12.	19.08.2021	<ul style="list-style-type: none"> Cognitive neuroscience and eating disorders 	Dr.Arun	4-6p.m	2
13.	21.08.2021	<ul style="list-style-type: none"> Genetics of eating disorders Risk factors for eating disorders Emotion regulation and eating disorder Disturbances of the central nervous system in anorexia nervosa and bulimia 	Dr.Arun	2-5p.m	3
	23.08.2021	Practical Class I	Dr. Shridhar		
13.	23.08.2021	<ul style="list-style-type: none"> Psychopharmacological treatment of anorexia nervosa and bulimia nervosa Psychopharmacological treatment of binge eating disorder. 	Dr. Shridhar	2-3 PM	1
14.	24.08.2021	<ul style="list-style-type: none"> Interpersonal psychotherapy Family therapy and eating disorders 	Dr. Shridhar	2-3 PM	1
15.	25.08.2021	Does advocacy for eating disorders really work?	Dr. Shridhar	2-4 PM	2
16.	27.08.2021	Psychological treatment of binge-eating disorder	Dr. Shridhar	2-4 PM	2
17.	29.08.2021	<ul style="list-style-type: none"> Intensive treatment of anorexia nervosa and bulimia nervosa Weight restoration in anorexia nervosa Prevention of eating disorders 	Dr. Shridhar	2-4p.m	2
			Total		36hrs

REFERENCE BOOKS:

- **Comprehensive textbook of psychiatry – Kaplan & Saddock**
- **Oxford Textbook Of Psychiatry**
- **Synopsis - Kaplan & Saddock**
- **Stahl's essential psychopharmacolog**

VALUE ADDED COURSE

1. Name of the programme & Code

Feeding and Eating Disorders Along With Its Management

2. Duration & Period

36 hrs & July to December2021

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Assessment by Multiple choice questions - *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

1 time July to December2021

8. Year of discontinuation: 2021

9. Summary report of each program year-wise

Value Added Course- July to December2021					
Sl. No	Course Code	Course Name	Resource Persons	Target Students	Strength & Year
1	PSYC03	Feeding And Eating Disorders Along With Its Management	Dr.SRIDHAR Dr.Arun	IInd & IIIrd year	(15) July to December2021

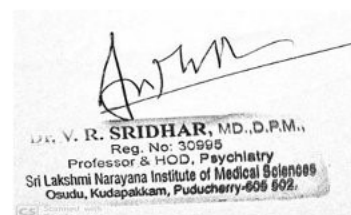
10. Course Feed Back

Enclosed as Annexure- V



RESOURCE PERSON

1. Dr. V.R. Sridhar
2. Dr. C. Arun Seetharaman



COORDINATOR

V.R. Sridhar

EATING DISORDERS & ITS MANAGEMENT



PARTICIPANT HAND BOOK

COURSE DETAILS

Particulars	Description
Course Title	Eating Disorders
Course Code	PSYCO3
Objective	<p>I. Anorexia Nervosa</p> <ol style="list-style-type: none"> 1. Epidemiology 2. Etiology 3. Diagnosis and clinical features 4. Subtypes 5. Pathology & laboratory examinations 6. Differential diagnosis 7. Course and prognosis 8. Treatment <p>II. Bulimia Nervosa</p> <ol style="list-style-type: none"> 9. Epidemiology 10. Etiology 11. Diagnosis and clinical features 12. Subtypes 13. Pathology & laboratory examinations 14. Differential diagnosis 15. Course and prognosis 16. Treatment <p>III. Binge eating disorders & other eating disorders</p>
Further learning opportunities	Eating Disorders & its Management
Key Competencies	On successful completion of the course the students will have skill in handling and manage patients with Eating Disorders.
Target Student	FINAL YEAR year MBBS Students
Duration	30hrs Every JULY 2021– DECEMBER 2021
Theory Session	10hrs
Practical Session	20hrs
Assessment Procedure	Multiple choice questions

I. Anorexia Nervosa

The term anorexia nervosa is derived from the Greek term for “loss of appetite” and a Latin word implying nervous origin. Anorexia nervosa is a syndrome characterized by three essential criteria. The first is a self-induced starvation to a significant degree—a behavior. The second is a relentless drive for thinness or a morbid fear of fatness—a psychopathology. The third criterion is the presence of medical signs and symptoms resulting from starvation—a physiological symptomatology. Anorexia nervosa is often, but not always, associated with disturbances of body image, the perception that one is distressingly large despite obvious medical starvation. The distortion of body image is disturbing when present, but not pathognomic, invariable, or required for diagnosis. Two subtypes of anorexia nervosa exist: restricting and binge/purge. The theme in all anorexia nervosa subtypes is the highly disproportionate emphasis placed on thinness as a vital source, sometimes the only source, of self-esteem, with weight, and to a lesser degree, shape, becoming the overriding and consuming daylong preoccupation of thoughts, mood, and behaviors. Approximately half of anorexic persons will lose weight by drastically reducing their total food intake. The other half of these patients will not only diet but will also regularly engage in binge eating followed by purging behaviors. Some patients routinely purge after eating small amounts of food. Anorexia nervosa is much more prevalent in females than in males and usually has its onset in adolescence. Hypotheses of an underlying psychological disturbance in young women with the disorder include conflicts surrounding the transition from girlhood to womanhood. Psychological issues related to feelings of helplessness and difficulty establishing autonomy have also been suggested as contributing to the development of the disorder. Bulimic symptoms can occur as a separate disorder (bulimia nervosa, which is discussed in Section 15.2) or as part of anorexia nervosa. Persons with either disorder are excessively preoccupied with weight, food, and body shape. The outcome of anorexia nervosa varies from spontaneous recovery to a waxing and waning course to death.

EPIDEMIOLOGY

Anorexia nervosa has been reported more frequently over the past several decades, with increasing reports of the disorder in pre-pubertal girls and in boys. The most common ages of onset of anorexia nervosa are the mid-teens, but up to 5 percent of anorectic patients have the onset of the disorder in their early 20s. The most common age of onset is between 14 and 18 years. Anorexia

nervosa is estimated to occur in about 0.5 to 1 percent of adolescent girls. It occurs 10 to 20 times more often in females than in males. The prevalence of young women with some symptoms of anorexia nervosa who do not meet the diagnostic criteria is estimated to be close to 5 percent. Although the disorder was initially reported most often among the upper classes, recent epidemiological surveys do not show that distribution. It seems to be most frequent in developed countries, and it may be seen with greatest frequency among young women in professions that require thinness, such as modeling and ballet.

COMORBIDITY

Overall, anorexia nervosa is associated with depression in 65 percent of cases, social phobia in 35 percent of cases, and obsessive-compulsive disorder in 25 percent of cases. **ETIOLOGY** Biological, social, and psychological factors are implicated in the causes of anorexia nervosa. Some evidence points to higher concordance rates in monozygotic twins than in dizygotic twins. Sisters of patients with anorexia nervosa are likely to be affected, but this association may reflect social influences more than genetic factors. Major mood disorders are more common in family members than in the general population. Neurochemically, diminished norepinephrine turnover and activity are suggested by reduced 3-methoxy-4-hydroxyphenylglycol (MHPG) levels in the urine and the cerebrospinal fluid (CSF) of some patients with anorexia nervosa. An inverse relation is seen between MHPG and depression in these patients; an increase in MHPG is associated with a decrease in depression. **Biological Factors** Endogenous opioids may contribute to the denial of hunger in patients with anorexia nervosa. Preliminary studies show dramatic weight gains in some patients who are given opiate antagonists. Starvation results in many biochemical changes, some of which are also present in depression, such as hypercortisolemia and non-suppression by dexamethasone. Thyroid function is suppressed as well. These abnormalities are corrected by realimentation. Starvation may produce amenorrhea, which reflects lowered hormonal levels (luteinizing, follicle-stimulating, and gonadotropin-releasing hormones). Some patients with anorexia nervosa, however, may become amenorrheic before significant weight loss. Several computed tomographic (CT) studies reveal enlarged CSF spaces (enlarged sulci and ventricles) in anorectic patients during starvation, a finding that is reversed by weight gain. In one positron emission tomographic (PET) scan study, caudate nucleus metabolism was higher in the

anorectic state than after realimentation. Some authors have proposed a hypothalamic-pituitary axis (neuroendocrine) dysfunction. Some studies have shown evidence for dysfunction in serotonin, dopamine, and norepinephrine, three neurotransmitters involved in regulating eating behavior in the paraventricular nucleus of the hypothalamus. Other humoral factors that may be involved include corticotropin-releasing factor (CRF), neuropeptide Y, gonadotropin-releasing hormone, and thyroid-stimulating hormone. Table 15.1-2 lists the neuroendocrine changes associated with anorexia nervosa.

Social Factors Patients with anorexia nervosa find support for their practices in society's emphasis on thinness and exercise. No family constellations are specific to anorexia nervosa, but some evidence indicates that these patients have close, but troubled, relationships with their parents. Families of children who present with eating disorders, especially binge eating or purging subtypes, may exhibit high levels of hostility, chaos, and isolation and low levels of nurturance and empathy. An adolescent with a severe eating disorder may tend to draw attention away from strained marital relationships. Vocational and avocational interests interact with other vulnerability factors to increase the probability of developing eating disorders. In young women, participation in strict ballet schools increases the probability of developing anorexia nervosa at least sevenfold. In high school boys, wrestling is associated with a prevalence of full or partial eating disorder syndromes during wrestling season of approximately 17 percent, with a minority developing an eating disorder and not improving spontaneously at the end of training. Although these athletic activities probably select for perfectionistic and persevering youth in the first place, pressures regarding weight and shape generated in these social milieus reinforce the likelihood that these predisposing factors will be channeled toward eating disorders. A gay orientation in men is a proved predisposing factor, not because of sexual orientation or sexual behavior per se, but because norms for slimness, albeit muscular slimness, are very strong in the gay community, only slightly lower than for heterosexual women. In contrast, a lesbian orientation may be slightly protective, because lesbian communities may be more tolerant of higher weights and a more normative natural distribution of body shapes than their heterosexual female counterparts.

Psychological and Psychodynamic Factors Anorexia nervosa appears to be a reaction to the demand that adolescents behave more independently and increase their social and sexual functioning. Patients with the disorder substitute their preoccupations, which are similar to obsessions, with eating and weight gain for other, normal adolescent

pursuits. These patients typically lack a sense of autonomy and selfhood. Many experience their bodies as somehow under the control of their parents, so that self-starvation may be an effort to gain validation as a unique and special person. Only through acts of extraordinary self-discipline can an anorectic patient develop a sense of autonomy and selfhood. Psychoanalytic clinicians who treat patients with anorexia nervosa generally agree that these young patients have been unable to separate psychologically from their mothers. The body may be perceived as though it were inhabited by the introject of an intrusive and unempathic mother. Starvation may unconsciously mean arresting the growth of this intrusive internal object and thereby destroying it. Often, a projective identification process is involved in the interactions between the patient and the patient's family. Many anorectic patients feel that oral desires are greedy and unacceptable; therefore, these desires are projectively disavowed. Other theories have focused on fantasies of oral impregnation. Parents respond to the refusal to eat by becoming frantic about whether the patient is actually eating. The patient can then view the parents as the ones who have unacceptable desires and can projectively disavow them; that is, others may be voracious and ruled by desire but not the patient.

DIAGNOSIS AND CLINICAL FEATURES The onset of anorexia nervosa usually occurs between the ages of 10 and 30 years. It is present when

- (1) an individual voluntarily reduces and maintains an unhealthy degree of weight loss or fails to gain weight proportional to growth;
- (2) an individual experiences an intense fear of becoming fat, has a relentless drive for thinness despite obvious medical starvation, or both;
- (3) an individual experiences significant starvation-related medical symptomatology, often, but not exclusively, abnormal reproductive hormone functioning, but also hypothermia, bradycardia, orthostasis, and severely reduced body fat stores; and
- (4) the behaviors and psychopathology are present for at least 3 months. An intense fear of gaining weight and becoming obese is present in all patients with the disorder and undoubtedly contributes to their lack of interest in, and even resistance to, therapy.

Most aberrant behavior directed toward losing weight occurs in secret. Patients with anorexia nervosa usually refuse to eat with their families or in public

places. They lose weight by drastically reducing their total food intake, with a disproportionate decrease in high-carbohydrate and fatty foods. As mentioned, the term anorexia is a misnomer, because loss of appetite is usually rare until late in the disorder. Evidence that patients are constantly thinking about food is their passion for collecting recipes and for preparing elaborate meals for others. Some patients cannot continuously control their voluntary restriction of food intake and so have eating binges. These binges usually occur secretly and often at night and are frequently followed by self-induced vomiting. Patients abuse laxatives and even diuretics to lose weight, and ritualistic exercising, extensive cycling, walking, jogging, and running are common activities. Patients with the disorder exhibit peculiar behavior about food. They hide food all over the house and frequently carry large quantities of candies in their pockets and purses. While eating meals, they try to dispose of food in their napkins or hide it in their pockets. They cut their meat into very small pieces and spend a great deal of time rearranging the pieces on their plates. If the patients are confronted with their peculiar behavior, they often deny that their behavior is unusual or flatly refuse to discuss it. Obsessive-compulsive behavior, depression, and anxiety are other psychiatric symptoms of anorexia nervosa most frequently noted clinically. Patients tend to be rigid and perfectionist, and somatic complaints, especially epigastric discomfort, are usual. Compulsive stealing, usually of candies and laxatives but occasionally of clothes and other items, may occur. Poor sexual adjustment is frequently described in patients with the disorder. Many adolescent patients with anorexia nervosa have delayed psychosocial sexual development; in adults, a markedly decreased interest in sex often accompanies onset of the disorder. A minority of anorexic patients has a premorbid history of promiscuity, substance abuse, or both but during the disorder show a decreased interest in sex. Patients usually come to medical attention when their weight loss becomes apparent. As the weight loss grows profound, physical signs such as hypothermia (as low as 35°C), dependent edema, bradycardia, hypotension, and lanugo (the appearance of neonatal-like hair) appear, and patients show a variety of metabolic changes (Fig. 15.1-1). Some female patients with anorexia nervosa come to medical attention because of amenorrhea, which often appears before their weight loss is noticeable. Some patients induce vomiting or abuse purgatives and diuretics; such behavior causes concern about hypokalemic alkalosis. Impaired water diuresis may be noted. Electrocardiographic (ECG) changes, such as T wave flattening or inversion, ST segment depression, and lengthening of the QT interval, have

been noted in the emaciated stage of anorexia nervosa. ECG changes may also result from potassium loss, which can lead to death. Gastric dilation is a rare complication of anorexia nervosa. In some patients, aortography has shown a superior mesenteric artery syndrome.

SUBTYPES

Anorexia nervosa has been divided into two clinical subtypes: the food-restricting category and the purging category. In the food-restricting category, present in approximately 50 percent of cases, food intake is highly restricted (usually with attempts to consume fewer than 300 to 500 calories per day and no fat grams), and the patient may be relentlessly and compulsively overactive, with overuse athletic injuries. In the purging subtype, patients alternate attempts at rigorous dieting with intermittent binge or purge episodes. Purging represents a secondary compensation for the unwanted calories, most often accomplished by self-induced vomiting, frequently by laxative abuse, less frequently by diuretics, and occasionally with emetics. Sometimes, repetitive purging occurs without prior binge eating, after ingesting only relatively few calories. Both types may be socially isolated and have depressive disorder symptoms and diminished sexual interest. Overexercising and perfectionistic traits are also common in both types. A new diagnostic category in DSM-5 is binge eating disorder (see Section 15.3) characterized by episodic bouts of the intake of excessive amounts of food but without purging or similar compensatory behavior. Those who practice binge eating and purging share many features with persons who have bulimia nervosa without anorexia nervosa. Those who binge eat and purge tend to have families in which some members are obese, and they themselves have histories of heavier body weights before the disorder than do persons with the restricting type. Binge eating–purging persons are likely to be associated with substance abuse, impulse control disorders, and personality disorders. Persons with restricting anorexia nervosa often have obsessive compulsive traits with respect to food and other matters. Some persons with anorexia nervosa may purge but not binge. Persons with anorexia nervosa have high rates of comorbid major depressive disorders; major depressive disorder or dysthymic disorder has been reported in up to 50 percent of patients with anorexia nervosa. The suicide rate is higher in persons with the binge eating–purging type of anorexia nervosa than in those with the restricting type. Patients with anorexia nervosa are often secretive, deny their symptoms, and resist treatment. In almost all cases, relatives or intimate acquaintances

must confirm a patient's history. The mental status examination usually shows a patient who is alert and knowledgeable on the subject of nutrition and who is preoccupied with food and weight. A patient must have a thorough general physical and neurological examination. If the patient is vomiting, a hypokalemic alkalosis may be present. Because most patients are dehydrated, serum electrolyte levels must be determined initially and periodically. Hospitalization may be necessary to deal with medical complications.

PATHOLOGY AND LABORATORY EXAMINATION

A complete blood count often reveals leukopenia with a relative lymphocytosis in emaciated patients with anorexia nervosa. If binge eating and purging are present, serum electrolyte determination reveals hypokalemic alkalosis. Fasting serum glucose concentrations are often low during the emaciated phase, and serum salivary amylase concentrations are often elevated if the patient is vomiting. The ECG may show ST segment and T-wave changes, which are usually secondary to electrolyte disturbances; emaciated patients have hypotension and bradycardia. Young girls may have a high serum cholesterol level. All these values revert to normal with nutritional rehabilitation and cessation of purging behaviors. Endocrine changes that may occur, such as amenorrhea, mild hypothyroidism, and hypersecretion of corticotrophin releasing hormone, are caused by the underweight condition and revert to normal with weight gain.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis of anorexia nervosa is complicated by patients' denial of the symptoms, the secrecy surrounding their bizarre eating rituals, and their resistance to seeking treatment. Thus, it may be difficult to identify the mechanism of weight loss and the patient's associated ruminative thoughts about distortions of body image. Clinicians must ascertain that a patient does not have a medical illness that can account for the weight loss (e.g., a brain tumor or cancer). Weight loss, peculiar eating behaviors, and vomiting can occur in several mental disorders. Depressive disorders and anorexia nervosa have several features in common, such as depressed feelings, crying spells, sleep disturbance, obsessive ruminations, and occasional suicidal thoughts. The two disorders, however, have several distinguishing features. Generally, a patient with a depressive disorder has decreased appetite, whereas a patient with anorexia nervosa claims to have normal appetite and to feel hungry; only in the

severe stages of anorexia nervosa do patients actually have decreased appetite. In contrast to depressive agitation, the hyperactivity seen in anorexia nervosa is planned and ritualistic. The preoccupation with recipes, the caloric content of foods, and the preparation of gourmet feasts is typical of patients with anorexia nervosa but is absent in patients with a depressive disorder. In depressive disorders, patients have no intense fear of obesity or disturbance of body image. Weight fluctuations, vomiting, and peculiar food handling may occur in somatization disorder. On rare occasions, a patient fulfills the diagnostic criteria for both somatization disorder and anorexia nervosa; in such a case, both diagnoses should be made. Generally, the weight loss in somatization disorder is not as severe as that in anorexia nervosa, nor does a patient with somatization disorder express a morbid fear of becoming overweight, as is common in those with anorexia nervosa. Amenorrhea for 3 months or longer is unusual in somatization disorder. In patients with schizophrenia, delusions about food are seldom concerned with caloric content. More likely, they believe the food to be poisoned. Patients with schizophrenia are rarely preoccupied with a fear of becoming obese and do not have the hyperactivity that is seen in patients with anorexia nervosa. Patients with schizophrenia have bizarre eating habits but not the entire syndrome of anorexia nervosa. Anorexia nervosa must be differentiated from bulimia nervosa, a disorder in which episodic binge eating, followed by depressive moods, self-deprecating thoughts, and self-induced vomiting occur while patients maintain their weight within a normal range. Patients with bulimia nervosa seldom lose 15 percent of their weight, but the two conditions frequently coexist. Rare conditions of unknown etiology are seen in which hyperactivity of the vagus nerve causes changes in eating patterns that are associated with weight loss, sometimes of severe degree. In such cases bradycardia, hypotension, and other parasympathomimetic signs and symptoms are seen. Because the vagus nerve relates to the enteric nervous system, eating may be associated with gastric distress such as nausea or bloating. Patients do not generally lose their appetite. Treatment is symptomatic and anticholinergic drugs can reverse hypotension and bradycardia, which may be life-threatening.

COURSE AND PROGNOSIS

The course of anorexia nervosa varies greatly—spontaneous recovery without treatment, recovery after a variety of treatments, a fluctuating course of weight gains followed by relapses, and a gradually deteriorating course resulting in death caused by complications of starvation. One study reviewing subtypes of

anorectic patients found that restricting-type anorectic patients seemed less likely to recover than those of the binge eating–purging type. The short-term response of patients to almost all hospital treatment programs is good. Those who have regained sufficient weight, however, often continue their preoccupation with food and body weight, have poor social relationships, and exhibit depression. In general, the prognosis is not good. Studies have shown a range of mortality rates from 5 to 18 percent. Indicators of a favorable outcome are admission of hunger, lessening of denial and immaturity, and improved self-esteem. Such factors as childhood neuroticism, parental conflict, bulimia nervosa, vomiting, laxative abuse, and various behavioral manifestations (e.g., obsessive-compulsive, hysterical, depressive, psychosomatic, neurotic, and denial symptoms) have been related to poor outcome in some studies, but not in others. Ten-year outcome studies in the United States have shown that about one fourth of patients recover completely and another one half are markedly improved and functioning fairly well. The other one fourth includes an overall 7 percent mortality rate and those who are functioning poorly with a chronic underweight condition. Swedish and English studies over a 20- and 30-year period show a mortality rate of 18 percent. About half of patients with anorexia nervosa eventually will have the symptoms of bulimia, usually within the first year after the onset of anorexia nervosa.

TREATMENT

In view of the complicated psychological and medical implications of anorexia nervosa, a comprehensive treatment plan, including hospitalization when necessary and both individual and family therapy, is recommended. Behavioral, interpersonal, and cognitive approaches are used and, in many cases, medication may be indicated. Hospitalization The first consideration in the treatment of anorexia nervosa is to restore patients' nutritional state; dehydration, starvation, and electrolyte imbalances can seriously compromise health and, in some cases, lead to death. The decision to hospitalize a patient is based on the patient's medical condition and the amount of structure needed to ensure patient cooperation. In general, patients with anorexia nervosa who are 20 percent below the expected weight for their height are recommended for inpatient programs, and patients who are 30 percent below their expected weight require psychiatric hospitalization for 2 to 6 months. Inpatient psychiatric programs for patients with anorexia nervosa generally use a combination of a behavioral management approach, individual psychotherapy, family education and therapy,

and, in some cases, psychotropic medications. Successful treatment is promoted by the ability of staff members to maintain a firm yet supportive approach to patients, often through a combination of positive reinforcers (praise) and negative reinforcers (restriction of exercise). The program must have some flexibility for individualizing treatment to meet patients' needs and cognitive abilities. Patients must become willing participants for treatment to succeed in the long run. Most patients are uninterested in psychiatric treatment and even resist it; they are brought to a doctor's office unwillingly by agonizing relatives or friends. The patients rarely accept the recommendation of hospitalization without arguing and criticizing the proposed program. Emphasizing the benefits, such as relief of insomnia and depressive signs and symptoms, may help persuade the patients to admit themselves willingly to the hospital. Relatives' support and confidence in the physicians and treatment team are essential when firm recommendations must be carried out. Patients' families should be warned that the patients will resist admission and, for the first several weeks of treatment, will make many dramatic pleas for their families' support to obtain release from the hospital program. Compulsory admission or commitment should be obtained only when the risk of death from the complications of malnutrition is likely. On rare occasions, patients prove that the doctor's statements about the probable failure of outpatient treatment are wrong. They may gain a specified amount of weight by the time of each outpatient visit, but such behavior is uncommon, and a period of inpatient care is usually necessary. Hospital Management. The following considerations apply to the general management of patients with anorexia nervosa during a hospitalized treatment program. Patients should be weighed daily, early in the morning after emptying the bladder. The daily fluid intake and urine output should be recorded. If vomiting is occurring, hospital staff members must monitor serum electrolyte levels regularly and watch for the development of hypokalemia. Because food is often regurgitated after meals, the staff may be able to control vomiting by making the bathroom inaccessible for at least 2 hours after meals or by having an attendant in the bathroom to prevent the opportunity for vomiting. Constipation in these patients is relieved when they begin to eat normally. Stool softeners may occasionally be given, but never laxatives. If diarrhea occurs, it usually means that patients are surreptitiously taking laxatives. Because of the rare complication of stomach dilation and the possibility of circulatory overload when patients immediately start eating an enormous number of calories, the hospital staff should give patients about 500

calories over the amount required to maintain their present weight (usually 1,500 to 2,000 calories a day). It is wise to give these calories in six equal feedings throughout the day, so that patients need not eat a large amount of food at one sitting. Giving patients a liquid food supplement such as Sustagen may be advisable, because they may be less apprehensive about gaining weight slowly with the formula than by eating food. After patients are discharged from the hospital, clinicians usually find it necessary to continue outpatient supervision of the problems identified in the patients and their families.

Psychotherapy

Cognitive-Behavioral Therapy. Cognitive and behavioral therapy principles can be applied in both inpatient and outpatient settings and have been found effective for inducing weight gain. Monitoring is an essential component of cognitive-behavioral therapy. Patients are taught to monitor their food intake, their feelings and emotions, their bingeing and purging behaviors, and their problems in interpersonal relationships. Patients are taught cognitive restructuring to identify automatic thoughts and to challenge their core beliefs. Problem solving is a specific method whereby patients learn how to think through and devise strategies to cope with their food-related and interpersonal problems. Patients' vulnerability to rely on anorectic behavior as a means of coping can be addressed if they can learn to use these techniques effectively.

Dynamic Psychotherapy. Dynamic expressive-supportive psychotherapy is sometimes used in the treatment of patients with anorexia nervosa, but their resistance may make the process difficult and painstaking. Because patients view their symptoms as constituting the core of their specialness, therapists must avoid excessive investment in trying to change their eating behavior. The opening phase of the psychotherapy process must be geared toward building a therapeutic alliance. Patients may experience early interpretations as though someone else were telling them what they really feel and thereby minimizing and invalidating their own experiences. Therapists who empathize with patients' points of view and take an active interest in what their patients think and feel, however, convey to patients that their autonomy is respected. Above all, psychotherapists must be flexible, persistent, and durable in the face of patients' tendencies to defeat any efforts to help them.

Family Therapy. A family analysis should be done for all patients with anorexia nervosa who are living with their families, which is used as a basis for a clinical judgment on what type of family therapy or counseling is advisable. In some cases, family therapy is not possible; however, issues of family relationships can then be addressed in individual therapy. Sometimes, brief counseling sessions with immediate family

members is the extent of family therapy required. In one controlled family therapy study in London, anorectic patients under the age of 18 benefited from family therapy, whereas patients over the age of 18 did worse in family therapy than with the control therapy. No controlled studies have been reported on the combination of individual and family therapy; however, in actual practice, most clinicians provide individual therapy and some form of family counseling in managing patients with anorexia nervosa. Pharmacotherapy Pharmacological studies have not yet identified any medication that yields definitive improvement of the core symptoms of anorexia nervosa. Some reports support the use of cyproheptadine (Periactin), a drug with antihistaminic and antiserotonergic properties, for patients with the restricting type of anorexia nervosa. Amitriptyline (Elavil) has also been reported to have some benefit. Other medications that have been tried by patients with anorexia nervosa with variable results include clomipramine (Anafranil), pimozide (Orap), and chlorpromazine (Thorazine). Trials of Suoxetine (Prozac) have resulted in some reports of weight gain, and serotonergic agents may yield positive responses in some cases. In patients with anorexia nervosa and coexisting depressive disorders, the depressive condition should be treated. Concern exists about the use of tricyclic drugs in low-weight, depressed patients with anorexia nervosa, who may be vulnerable to hypotension, cardiac arrhythmia, and dehydration. Once an adequate nutritional status has been attained, the risk of serious adverse effects from the tricyclic drugs may decrease; in some patients, the depression improves with weight gain and normalized nutritional status.

II. Bulimia Nervosa

Bulimia nervosa is characterized by episodes of binge eating combined with inappropriate ways of stopping weight gain. Physical discomfort—for example, abdominal pain or nausea—terminates the binge eating, which is often followed by feelings of guilt, depression, or self-disgust. Unlike patients with anorexia nervosa, those with bulimia nervosa typically maintain a normal body weight. The term bulimia nervosa derives from the terms for “ox-hunger” in Greek and “nervous involvement” in Latin. For some patients, bulimia nervosa may represent a failed attempt at anorexia nervosa, sharing the goal of becoming very thin, but occurring in an individual less able to sustain prolonged semi-starvation or severe hunger as consistently as classic restricting anorexia nervosa patients. For others, eating binges represent “breakthrough eating” episodes of giving in to hunger pangs generated by efforts to restrict eating so as

to maintain a socially desirable level of thinness. Still others use binge eating as a means to self-medicate during times of emotional distress. Regardless of the reason, eating binges provoke panic as individuals feel that their eating has been out of control. The unwanted binges lead to secondary attempts to avoid the feared weight gain by a variety of compensatory behaviors, such as purging or excessive exercise.

EPIDEMIOLOGY

Bulimia nervosa is more prevalent than anorexia nervosa. Estimates of bulimia nervosa range from 1 to 4 percent of young women. As with anorexia nervosa, bulimia nervosa is more common in women than in men, but its onset is often later in adolescence than that of anorexia nervosa. The onset may also occur in early adulthood. Approximately 20 percent of college women experience transient bulimic symptoms at some point during their college years. Although bulimia nervosa is often present in normal-weight young women, they sometimes have a history of obesity. In industrialized countries the prevalence is about 1 percent of the general population. In the United States, bulimia nervosa may be more prevalent among Hispanics and blacks than non-Hispanic whites.

ETIOLOGY

Biological Factors Some investigators have attempted to associate cycles of bingeing and purging with various neurotransmitters. Because antidepressants often benefit patients with bulimia nervosa and because serotonin has been linked to satiety, serotonin and norepinephrine have been implicated. Because plasma endorphin levels are raised in some bulimia nervosa patients who vomit, the feeling of well-being after vomiting that some of these patients experience may be mediated by raised endorphin levels. Increased frequency of bulimia nervosa is found in first-degree relatives of persons with the disorder. Recent research using functional magnetic resonance imaging (MRI) suggests that overeating in bulimia nervosa may result from an exaggerated perception of hunger signals related to sweet taste mediated by the right anterior insula area of the brain.

Social Factors Patients with bulimia nervosa, as with those with anorexia nervosa, tend to be high achievers and to respond to societal pressures to be slender. As with anorexia nervosa patients, many patients with bulimia nervosa are depressed and have increased familial depression, but the families of patients with bulimia nervosa are generally less close and more conflictual

than the families of those with anorexia nervosa. Patients with bulimia nervosa describe their parents as neglectful and rejecting. Psychological Factors Patients with bulimia nervosa, as with those with anorexia nervosa, have difficulties with adolescent demands, but patients with bulimia nervosa are more outgoing, angry, and impulsive than those with anorexia nervosa. Alcohol dependence, shoplifting, and emotional lability (including suicide attempts) are associated with bulimia nervosa. These patients generally experience their uncontrolled eating as more ego-dystonic than do patients with anorexia nervosa and so seek help more readily. Patients with bulimia nervosa lack superego control and the ego strength of their counterparts with anorexia nervosa. Their difficulties in controlling their impulses are often manifested by substance dependence and self-destructive sexual relationships in addition to the binge eating and purging that characterize the disorder. Many patients with bulimia nervosa have histories of difficulties separating from caretakers, as manifested by the absence of transitional objects during their early childhood years. Some clinicians have observed that patients with bulimia nervosa use their own bodies as transitional objects. The struggle for separation from a maternal figure is played out in the ambivalence toward food; eating may represent a wish to fuse with the caretaker, and regurgitating may unconsciously express a wish for separation.

DIAGNOSIS AND CLINICAL FEATURES

Bulimia nervosa is present when

- (1) episodes of binge eating occurs relatively frequently (once a week or more) for at least 3 months;
- (2) compensatory behaviors are practiced after binge eating to prevent weight gain, primarily self-induced vomiting, laxative abuse, diuretics, enemas, abuse of emetics (80 percent of cases), and, less commonly, severe dieting and strenuous exercise (20 percent of cases);
- (3) weight is not severely lowered as in anorexia nervosa; and
- (4) the patient has a morbid fear of fatness, a relentless drive for thinness, or both and a disproportionate amount of self-evaluation that depends on body weight and shape.

When making a diagnosis of bulimia nervosa, clinicians should explore the possibility that the patient has experienced a brief or prolonged prior bout of anorexia nervosa, which is present in approximately half of those with bulimia

nervosa. Binging usually precedes vomiting by about 1 year. Vomiting is common and is usually induced by sticking a finger down the throat, although some patients are able to vomit at will. Vomiting decreases the abdominal pain and the feeling of being bloated and allows patients to continue eating without fear of gaining weight. The acid content of vomitus can damage tooth enamel, a not uncommon finding in patients with the disorder. Depression, sometimes called post-binge anguish, often follows the episode. During binges, patients eat food that is sweet, high in calories, and generally soft or smooth textured, such as cakes and pastry. Some patients prefer bulky foods without regard to taste. The food is eaten secretly and rapidly and is sometimes not even chewed. Most patients with bulimia nervosa are within their normal weight range, but some may be underweight or overweight. These patients are concerned about their body image and their appearance, worried about how others see them, and concerned about their sexual attractiveness. Most are sexually active, compared with anorexia nervosa patients, who are not interested in sex. Pica and struggles during meals are sometimes revealed in the histories of patients with bulimia nervosa. Bulimia nervosa occurs in persons with high rates of mood disorders and impulse control disorders. Bulimia nervosa is also reported to occur in those at risk for substance-related disorders and a variety of personality disorders. Patients with bulimia nervosa also have increased rates of anxiety disorders, bipolar I disorder, dissociative disorders, and histories of sexual abuse.

Subtypes Evidence indicates that bulimic persons who purge differ from binge eaters who do not purge in that the latter tend to have less body-image disturbance and less anxiety concerning eating. Those with bulimia nervosa who do not purge tend to be obese. Distinct physiological differences also exist between patients with bulimia who purge and those who do not. Because of all these differences, the diagnosis of bulimia nervosa is sometimes subtyped into a purging type, for those who regularly engage in self-induced vomiting or the use of laxatives or diuretics, and a non-purging type, for those who use strict dieting, fasting, or vigorous exercise but do not regularly engage in purging. Patients who purge may have a different course from that of patients who binge and then diet or exercise. Patients with purging type may be at risk for certain medical complications such as hypokalemia from vomiting or laxative abuse and hypochloremic alkalosis. Those who vomit repeatedly are at risk for gastric and esophageal tears, although these complications are rare.

PATHOLOGY AND LABORATORY EXAMINATIONS

Bulimia nervosa can result in electrolyte abnormalities and various degrees of starvation, although it may not be as obvious as in low-weight patients with anorexia nervosa. Thus, even normal-weight patients with bulimia nervosa should have laboratory studies of electrolytes and metabolism. In general, thyroid function remains intact in bulimia nervosa, but patients may show non-suppression on a dexamethasone suppression test. Dehydration and electrolyte disturbances are likely to occur in patients with bulimia nervosa who purge regularly. These patients commonly exhibit hypomagnesemia and hyperamylasemia. Although not a core diagnostic feature, many patients with bulimia nervosa have menstrual disturbances. Hypotension and bradycardia occur in some patients.

DIFFERENTIAL DIAGNOSIS

The diagnosis of bulimia nervosa cannot be made if the binge-eating and purging behaviors occur exclusively during episodes of anorexia nervosa. In such cases, the diagnosis is anorexia nervosa, binge eating-purging type. Clinicians must ascertain that patients have no neurological disease, such as epileptic-equivalent seizures, central nervous system tumors, Klüver-Bucy syndrome, or Kleine-Levin syndrome. The pathological features manifested by Klüver-Bucy syndrome are visual agnosia, compulsive licking and biting, examination of objects by the mouth, inability to ignore any stimulus, placidity, altered sexual behavior (hypersexuality), and altered dietary habits, especially hyperphagia. The syndrome is exceedingly rare and is unlikely to cause a problem in differential diagnosis. Kleine-Levin syndrome consists of periodic hypersomnia lasting for 2 to 3 weeks and hyperphagia. As in bulimia nervosa, the onset is usually during adolescence, but the syndrome is more common in men than in women. Patients with bulimia nervosa who have concurrent seasonal affective disorder and patterns of atypical depression (with overeating and oversleeping in low-light months) may manifest seasonal worsening of both bulimia nervosa and depressive features. In these cases, binges are typically much more severe during winter months. Bright light therapy (10,000 lux for 30 minutes, in early morning, at 18 to 22 inches from the eyes) may be a useful component of comprehensive treatment of an eating disorder with seasonal affective disorder. Some patients with bulimia nervosa—perhaps 15 percent—have multiple comorbid impulsive behaviors, including substance abuse, and lack of ability to control themselves in such diverse areas as money

management (resulting in impulse buying and compulsive shopping) and sexual relationships (often resulting in brief, passionate attachments and promiscuity). They exhibit self-mutilation, chaotic emotions, and chaotic sleeping patterns. They often meet criteria for borderline personality disorder and other mixed personality disorders and, not infrequently, bipolar II disorder.

COURSE AND PROGNOSIS

Bulimia nervosa is characterized by higher rates of partial and full recovery compared with anorexia nervosa. As noted in the treatment section, those treated fare much better than those who are untreated. Patients who are untreated tend to remain chronic or may show small, but generally unimpressive, degrees of improvement with time. In a 10-year follow-up study of patients who had previously participated in treatment programs, the number of women who continued to meet the full criteria for bulimia nervosa declined as the duration of follow-up increased. Approximately 30 percent continued to engage in recurrent binge-eating or purging behaviors. A history of substance use problems and a longer duration of the disorder at presentation predicted worse outcome. Approximately 40 percent of women were fully recovered at follow-up. The mortality rate for bulimia nervosa has been estimated at 2 percent per decade according to DSM-5.

TREATMENT Most patients with uncomplicated bulimia nervosa do not require hospitalization. In general, patients with bulimia nervosa are not as secretive about their symptoms as patients with anorexia nervosa. Therefore, outpatient treatment is usually not difficult, but psychotherapy is frequently stormy and may be prolonged. Some obese patients with bulimia nervosa who have had prolonged psychotherapy do surprisingly well. In some cases—when eating binges are out of control, outpatient treatment does not work, or a patient exhibits such additional psychiatric symptoms as suicidality and substance abuse—hospitalization may become necessary. In addition, electrolyte and metabolic disturbances resulting from severe purging may necessitate hospitalization. **Psychotherapy** Cognitive-Behavioral Therapy. Cognitive-behavioral therapy (CBT) should be considered the benchmark, first-line treatment for bulimia nervosa. The data supporting the efficacy of CBT are based on strict adherence to rigorously implemented, highly detailed, manual guided treatments that include about 18 to 20 sessions over 5 to 6 months. CBT implements a number of cognitive and behavioral procedures to (1) interrupt the self-maintaining behavioral cycle of bingeing and dieting and (2) alter the

individual's dysfunctional cognitions; beliefs about food, weight, body image; and overall self-concept. Dynamic Psychotherapy. Psychodynamic treatment of patients with bulimia nervosa has been of limited success. Psychodynamic formulations revealed a tendency to concretize introjective and projective defense mechanisms. In a manner analogous to splitting, patients divide food into two categories: items that are nutritious and those that are unhealthy. Food that is designated nutritious may be ingested and retained because it unconsciously symbolizes good introjects. But junk food is unconsciously associated with bad introjects and, therefore, is expelled by vomiting, with the unconscious fantasy that all destructiveness, hate, and badness are being evacuated. Patients can temporarily feel good after vomiting because of the fantasized evacuation, but the associated feeling of "being all good" is short-lived because it is based on an unstable combination of splitting and projection.

Other Modalities. Controlled trials have shown that a variety of novel ways of administering and facilitating cognitive-behavioral therapy are effective for bulimia nervosa. Some have been incorporated in "stepped-care" programs and including Internet-based platforms, computer facilitated programs, email enhanced programs, and administration of cognitive-behavioral therapy via telemedicine to remote areas. Pharmacotherapy Antidepressant medications have been shown to be helpful in treating bulimia. This includes the selective serotonin reuptake inhibitors (SSRIs), such as Suoxetine (Prozac). This may be based on elevating central 5-hydroxytryptamine levels. Antidepressant medications can reduce binge eating and purging independent of the presence of a mood disorder. Thus, antidepressants have been used successfully for particularly difficult binge-purge cycles that do not respond to psychotherapy alone. Imipramine (Tofranil), desipramine (Norpramin), trazodone (Desyrel), and monoamine oxidase inhibitors (MAOIs) have been helpful. In general, most of the antidepressants have been effective at dosages usually given in the treatment of depressive disorders. Dosages of Suoxetine that are effective in decreasing binge eating, however, may be higher (60 to 80 mg a day) than those used for depressive disorders. Medication is helpful in patients with comorbid depressive disorders and bulimia nervosa. Carbamazepine (Tegretol) and lithium (Eskalith) have not shown impressive results as treatments for binge eating, but they have been used in the treatment of patients with bulimia nervosa with comorbid mood disorders, such as bipolar I disorder. Evidence indicates that the use of antidepressants alone results in a 22 percent rate of abstinence

from bingeing and purging; other studies show that CBT and medications are the most effective combination.

III. Binge-Eating Disorder and Other Eating Disorders

A. Binge-eating disorder.

Individuals with binge eating disorder engage in recurrent binge eating during which they eat an abnormally large amount of food over a short time. Unlike bulimia nervosa, patients with binge eating disorder do not compensate in any way after a binge episode (e.g., laxative use). Binge episodes often occur in private, generally include foods of dense caloric content, and, during the binge, the person feels he or she cannot control his or her eating. Epidemiology Binge eating disorder is the most common eating disorder. It appears in approximately 25 percent of patients who seek medical care for obesity and in 50 to 75 percent of those with severe obesity (body mass index [BMI] greater than 40). It is more common in females (4 percent) than in males (2 percent). Etiology The cause of binge eating disorder is unknown. Impulsive and extroverted personality styles are linked to the disorder as are persons who place themselves on a very low calorie diet. Binge eating may also occur during periods of stress. It may be used to reduce anxiety or alleviate depressive moods.

Diagnosis and Clinical Features

To be diagnosed with binge eating disorder the binges must be characterized by four features:

- (1) eating more rapidly than normal and to the point of being uncomfortably full,
- (2) eating large amounts of food even when not hungry,
- (3) eating alone, and
- (4) feeling guilty or otherwise upset about the episode. Binges must occur at least once a week for at least 3 months.

Approximately half of individuals with binge eating disorder are obese. Additionally, obese individuals with binge eating disorder have an earlier onset of obesity than those without the disorder. Patients with binge eating disorder are also more likely to have an unstable weight history with frequent episodes

of weight cycling (the gaining or losing of more than 10 kg). The disorder may be associated with insomnia, early menarche, neck or shoulder and lower back pain, chronic muscle pain, and metabolic disorders. Differential Diagnosis Binge eating disorder and bulimia nervosa share the same core feature of recurrent binge eating. Binge eating disorder is distinct from bulimia nervosa, however, in that binge eating disorder patients do not report recurrent compensatory behavior such as vomiting, laxative abuse, or excessive dieting. Binge eating disorder is distinct from anorexia nervosa in that patients do not exhibit an excessive drive for thinness and are of normal weight or are obese. The prevalence of binge eating disorder is higher in overweight populations (3 percent) than in the general population (approximately 2 percent). However there are some distinctions. Obese patients with binge eating disorder have a greater caloric intake during bingeing and non-bingeing episodes, greater eating disorder pathology (i.e., more emotional eating, chaotic eating habits), and higher rates of comorbid psychiatric disorders. Binge eating disorder is also more prevalent in families than obesity.

Course and Prognosis

Little is known about the course of binge eating disorder. Severe obesity is a long-term effect in over 3 percent of patients with the disorder. One prospective study of women in the community with binge eating disorder suggested that by 5 years of follow-up fewer than one fifth of the sample still had clinically significant eating disorder symptoms. Treatment Psychotherapy. Cognitive-behavioral therapy (CBT) is the most effective psychological treatment for binge eating disorder. CBT has been shown to lead to decreases in binge eating and associated problems (e.g., depression); however, studies have not shown marked weight loss as a result of CBT, and CBT combined with psychopharmacological treatments such as selective serotonin reuptake inhibitors (SSRIs) show better results than CBT alone. Exercise has also shown a reduction in binge eating when combined with CBT. Interpersonal psychotherapy (IPT) has also shown to be effective in the treatment of binge eating disorder; however, therapy focuses more on the interpersonal problems that contribute to the disorder rather than disturbances in eating behavior. Self-Help Groups. Self-help groups such as Overeaters Anonymous (OA) have proven to be helpful in patients with binge eating disorder. For the treatment of moderate obesity, organizations such as Weight Watchers can be extremely helpful and do not involve common fads or quick fixes.

Psychopharmacotherapy:

Symptoms of binge eating may benefit from medication treatment with several SSRIs, desipramine (Norpramin), imipramine (Tofranil), topiramate (Topamax), and sibutramine (Meridia). SSRI medications that have demonstrated improvement in mood as well as binge eating include fluvoxamine (Luvox), citalopram (Celexa), and sertraline (Zoloft). Some studies showed that high-dose SSRI treatment (e.g., fluoxetine [Paxil] at 60 to 100 mg) often initially resulted in weight loss. However, the weight loss was ordinarily short lived, even when medication was continued, and weight always returned when medication was discontinued. Amphetamine and amphetamine-like drugs may help but are of little use over the long term. Most, but not all, studies show that medication added to CBT is more effective than medication alone. For example, studies indicate that CBT did better than fluvoxamine or desipramine as a monotherapy for binge eating disorder; however, when CBT was used in combination with these agents, more improvement was seen in terms of weight loss compared with CBT alone.

B. Other specified feeding or eating disorder.

The diagnostic category of “other specified feeding or eating disorder” can be used for eating conditions that may cause significant distress but do not meet the full criteria for a classified eating disorder. Conditions included in this category include night eating syndrome, purging disorder, and sub-threshold forms of anorexia nervosa, bulimia nervosa, and binge eating disorder. Night Eating Syndrome Night eating syndrome is characterized by the consumption of large amounts of food after the evening meal. Individuals generally have little appetite during the day and suffer from insomnia. Epidemiology. Night eating syndrome occurs in approximately 2 percent of the general population; however, it has a higher prevalence among patients with insomnia, obesity (10 to 15 percent), eating disorders, and other psychiatric disorders. The disorder usually begins in early adulthood. Etiology. Little is known about the cause of night eating disorder; however, the hormones melatonin, leptin, ghrelin, and cortisol have been studied in relation to the disorder. Night eating syndrome also appears to run in families; patients with night eating syndrome are five times more likely to have a first-degree relative with night eating syndrome.

Diagnosis and Clinical Features

The diagnosis of night eating disorder includes recurrent episodes of hyperphagia or night eating; the lack of desire for food in the morning; and insomnia. Symptoms must persist for at least 3 months and cannot be secondary

to another medical or mental condition. Patients with night eating syndrome usually consume a large portion of their daily calorie intake after the evening meal. They are also more likely to wake up during the night and to eat upon awakening. Nocturnal eating tends to occur during non-rapid eye movement (REM) sleep and is usually short in duration. Patients are also prone to low sleep efficiency. Patients believe that they can only sleep if they eat. Depressed mood is common among these patients, especially during the evening and night hours.

Differential Diagnosis.

Night eating disorder is common among patients with other eating disorders, particularly bulimia nervosa and binge eating disorder. Although night eating can be found in bulimia nervosa and binge eating disorder, it is the characteristic sign of night eating disorder. Also, the amount of food consumed during eating episodes is usually lower in night eating disorder than in bulimia nervosa and binge eating disorder. Unlike other eating disorders, patients with night eating syndrome are not overly concerned about body image and weight. Patients with night eating disorder are also at higher risk for obesity and metabolic syndrome. Sleep-related eating disorder is characterized by recurrent episodes of involuntary eating during the night. These episodes can lead to serious consequences such as the ingesting of nonedible foods or substances, dangerous behaviors while searching for or preparing food, and sleep-related injury. The eating episodes usually occur after the patient has gone to sleep and may occur while the patient is unconscious or asleep. Sleep-related eating disorder also has a high comorbidity with sleepwalking, restless leg syndrome, and obstructive sleep apnea, conditions that are rarely found among night eating syndrome patients. Episodes of sleep-related eating disorder have been reported after the use certain medications, including zolpidem (Ambien), triazolam (Halcion), olanzapine (Zyprexa), and risperidone (Risperdal).

Course and Prognosis. The age of onset for night eating syndrome ranges from the late teens to late 20s and has a long-lasting course with periods of remission with treatment. Patients who experience poor sleep quality are more likely to develop diabetes, obesity, hypertension, and cardiovascular disease.

Treatment. Various studies have shown positive results in patients treated with SSRIs who showed improvement in night time awakenings, nocturnal eating, and post evening caloric intake. Weight loss and a reduction in nocturnal eating have been associated with an addition of topiramate to medication regimens. In patients with comorbid major depression and night eating syndrome, bright light therapy has shown to decrease depressed mood. CBT has also been helpful.

Purging Disorder Purging disorder is characterized by recurrent purging behavior after consuming a small amount of food in persons of normal weight who have a distorted view of their weight or body image. Purging behavior includes self-induced vomiting, laxative abuse, enemas, and diuretics. To make the diagnosis,

the behavior must not be associated with anorexia nervosa. Purging disorder is differentiated from bulimia nervosa because purging behavior occurs after eating small quantities of food or drink and does not occur as a result of a binge episode. Purging episodes should occur at least once a week over a 3-month period before the diagnosis is made.

Obesity and the Metabolic Syndrome

Obesity is a chronic illness manifested by an excess of body fat. It is generally measured by the body mass index (BMI), but a more accurate method is to use body composition analysis also known as biometric impedance analysis (BIA). Excess body fat generally results from a greater amount of calories consumed than are burnt off. In healthy individuals, body fat—which is different from the BMI—varies by gender. It ranges from 10 to 13 percent of essential fat to 25 to 31 percent on average of body weight in healthy women. In men, it ranges from 2 to 5 percent of essential fat to 18 to 24 percent on average. The global epidemic of obesity has resulted in an alarming increase in associated morbidity and mortality. Although manifestation of obesity and its comorbid states are largely physical, it has overwhelming psychological ramifications. The diagnosis of obesity using the BMI is discussed below.

COMORBIDITY

Evidence shows a correlation between obesity and psychiatric disorders. In fact, among treatment-seeking obese patients, there is a higher prevalence of morbid psychiatric illness by 40 to 60 percent. Disorders associated with obesity include eating disorders (particularly binge eating disorder), substance use disorders, psychotic disorders (schizophrenia), mood disorders, anxiety disorders, personality disorders, attention-deficit/hyperactivity disorder (ADHD), and posttraumatic stress disorder (PTSD). There are two eating disorders that can be associated with obesity: bulimia nervosa and binge eating disorder. Both of these disorders are distinct in their clinical characteristics and have some **similarities**. They both are associated with significant psychopathology and need to be addressed multi-modally to ensure success. It is important to note that not all patients with bulimia nervosa are obese; they may be overweight or of normal weight. See Sections 15.2 and 15.3 for further discussions on bulimia nervosa and binge eating disorder, respectively.

EPIDEMIOLOGY

Obesity rates continue to grow at epidemic proportions in the United States and other industrialized nations, representing a serious public health threat to millions of people. In the United States, approximately 36 percent of adults are obese. The prevalence of obesity is highest in minority populations, particularly among non-Hispanic black women. More than one half of these individuals, 40

years of age or older, are obese and more than 80 percent are overweight. The prevalence of obesity in adolescents in the United States has also increased from about 15 percent in 2000 to about 35 percent in 2012, while the prevalence rates for overweight children ages 6 to 11 range from 14 to 25 percent; however, there has been a slight decrease in recent years. Obesity also has economic effects. On an individual level, medical spending is approximately 42 percent higher for an obese person compared with that for a person of normal weight. On a national level, costs attributed to both overweight (BMI 25 to 29.9) and obesity (BMI greater than 30) account for 9.1 percent of US health care costs, and if the current trend continues, obesity will account for 16 percent of US health care costs by 2030.

ETIOLOGY

Persons with no medical etiology accumulate fat by eating more calories than are expended as energy; thus intake of energy exceeds its dissipation. To reduce body fat, fewer calories must be consumed or more calories must be burnt. An error of no more than 10 percent in either intake or output would lead to a 30-pound change in body weight in 1 year.

Satiety

Satiety is the feeling that results when hunger is satisfied. Persons stop eating at the end of a meal because they have replenished nutrients that had been depleted. Persons become hungry again when nutrients restored by earlier meals are once again depleted. It seems reasonable that a metabolic signal, derived from food that has been absorbed, is carried by the blood to the brain, where the signal activates receptor cells, probably in the hypothalamus, to produce satiety. Some studies have shown evidence for dysfunction in serotonin, dopamine, and norepinephrine involvement in regulating eating behavior through the hypothalamus. Other hormonal factors that may be involved include corticotrophin-releasing factor (CRF), neuropeptide Y, gonadotropin-releasing hormone, and thyroid-stimulating hormone. A newly found substance, obestatin, which is made in the stomach, is a hormone that in animal experiments produces satiety and may have potential use as a weight-loss agent in humans. Hunger results from a decrease in the strength of metabolic signals, secondary to the depletion of critical nutrients. Cannabinoid receptors are related to appetite and are stimulated with cannabis (marijuana) use. A cannabinoid inverse antagonist has been developed that blocks appetite. Satiety occurs soon after the beginning of a meal and before the total caloric content of the meal has been absorbed; therefore, satiety is only one regulatory mechanism controlling food intake. Appetite, defined as the desire for food, is also involved. A hungry person may eat to full satisfaction when food is available, but appetite can also induce a person to overeat past the point of satiety.

Appetite may be increased by psychological factors such as thoughts or feelings, and an abnormal appetite may result in an abnormal increase in food intake. Eating is also affected by cannabinoid receptors, which, when stimulated, increase appetite. Marijuana acts on that receptor that accounts for the “munchies” associated with marijuana use. A drug called rimonabant (Acomplia) is an inverse agonist to the cannabidiol receptor, meaning that it blocks appetite. It was withdrawn from the market because of adverse effects; however, in theory, inverse cannabinoid receptor agonists may have clinical use. The olfactory system may play a role in satiety. Experiments have shown that strong stimulation of the olfactory bulbs in the nose with food odors by use of an inhaler saturated with a particular smell produces satiety for that food. This may have implications for therapy of obesity.

Genetic Factors The existence of numerous forms of inherited obesity in animals and the ease with which adiposity can be produced by selective breeding make it clear that genetic factors can play a role in obesity. These factors must also be presumed to be important in human obesity. About 80 percent of patients who are obese have a family history of obesity. This fact can be accounted for not only by genetic factors but also in part by identification with fat parents and by learned oral methods for coping with anxiety. Nonetheless, studies show that identical twins raised apart can both be obese, an observation that suggests a hereditary role. To date, no specific genetic marker of obesity has been found.

Developmental Factors Early in life, adipose tissue grows by increases in both cell number and cell size. Once the number of adipocytes has been established, it does not seem to be susceptible to change. Obesity that begins early in life is characterized by adipose tissue with an increased number of adipocytes of increased size. Obesity that begins in adult life, on the other hand, results solely from an increase in the size of the adipocytes. In both instances, weight reduction produces a decrease in cell size. The greater number and size of adipocytes in patients with juvenile-onset diabetes may be a factor in their widely recognized difficulties with weight reduction and the persistence of their obesity. The distribution and amount of fat vary in individuals, and fat in different body areas has different characteristics. Fat cells around the waist, flanks, and abdomen (the so-called potbelly) are more active metabolically than those in the thighs and buttocks. The former pattern is more common in men and has a higher correlation with cardiovascular disease than does the latter pattern. Women, whose fat distribution is in the thighs and buttocks, may become obsessed with nostrums that are advertised to reduce fat in these areas (so-called cellulite, which is not a medical term), but no externally applied preparation to reduce this fat pattern exists. Men with abdominal fat may attempt to reduce their girth with machines that exercise the abdominal muscles, but exercise has no effect on loss of this type of fat. A hormone called leptin, which is made by fat cells, acts as a fat thermostat. When the blood level of leptin is low, more fat is consumed; when high, less fat is consumed. Further research is needed to

determine whether this might lead to new ways of managing obesity.

Physical Activity Factors The marked decrease in physical activity in aZuent societies seems to be the major factor in the rise of obesity as a public health problem. Physical inactivity restricts energy expenditure and may contribute to increased food intake. Although food intake increases with increasing energy expenditure over a wide range of energy demands, intake does not decrease proportionately when physical activity falls below a certain minimum level.

Brain-Damage Factors Destruction of the ventromedial hypothalamus can produce obesity in animals, but this is probably a very rare cause of obesity in humans. There is evidence that the central nervous system, particularly in the lateral and ventromedial hypothalamic areas, adjusts to food intake in response to changing energy requirements so as to maintain fat stores at a baseline determined by a specific set point. This set point varies from one person to another and depends on height and body build.

Health Factors In only a small number of cases is obesity the consequence of identifiable illness. Such cases include a variety of rare genetic disorders, such as Prader-Willi syndrome, as well as neuroendocrine abnormalities. Hypothalamic obesity results from damage to the ventromedial region of the hypothalamus (VMH), which has been studied extensively in laboratory animals and is a known center of appetite and weight regulation. In humans, damage to the VMH may result from trauma, surgery, malignancy, or inflammatory disease. Some forms of depression, particularly seasonal affective disorder, are associated with weight gain. Most persons who live in seasonal climates report increases in appetite and weight during the fall and winter months, with decreases in the spring and summer. Depressed patients usually lose weight, but some will gain weight.

Other Clinical Factors A variety of clinical disorders are associated with obesity. Cushing's disease is associated with a characteristic fat distribution and moon-like face (Fig. 15.4-1). Myxedema is associated with weight gain, although not invariably. Other neuroendocrine disorders include adiposogenital dystrophy (Fröhlich's syndrome), which is characterized by obesity and sexual and skeletal abnormalities.

Psychotropic Drugs Long-term use of steroid medications is associated with significant weight gain, as is the use of several psychotropic agents. Patients treated for major depression, psychotic disturbances, and bipolar disorder typically gain 3 to 10 kg, with even larger gains with chronic use. This can produce the so-called metabolic syndrome discussed below.

Psychological Factors Although psychological factors are evidently crucial to the development of obesity, how such psychological factors result in obesity is not known. The food-regulating mechanism is susceptible to environmental influence, and cultural, family, and psychodynamic factors have all been shown to contribute to the development of obesity. Although many investigators have proposed that specific family histories, precipitating factors, personality structures, or unconscious conflicts cause obesity, overweight persons may suffer from every conceivable psychiatric disorder and come from a variety of

disturbed backgrounds. Many obese patients are emotionally disturbed persons who, because of the availability of the overeating mechanism in their environments, have learned to use hyperphagia as a means of coping with psychological problems. Some patients may show signs of serious mental disorder when they attain normal weight because they no longer have that coping mechanism.

DIAGNOSIS AND CLINICAL FEATURES

The diagnosis of obesity, if done in a sophisticated way, involves the assessment of body fat. As this is rarely practical, the use of height and weight to calculate BMI is recommended. Figure 15.4-2 presents a chart for determining BMI from height and weight. Body mass index (BMI) chart. To determine BMI, find the patient's weight on the left of the graph and their height on the top of the graph. Follow the two categories toward the middle of the graph until they intersect. This point represents the patient's BMI. In most cases of obesity, it is not possible to identify the precise etiology, given the multitude of possible causes and their interactions. Instances of secondary obesity are rare but should not be overlooked. The habitual eating patterns of many obese persons often seem similar to patterns found in experimental obesity. Impaired satiety is a particularly important problem. Obese persons seem inordinately susceptible to food cues in their environment, to the palatability of foods, and to the inability to stop eating if food is available. Obese persons are usually susceptible to all kinds of external stimuli to eating, but they remain relatively unresponsive to the usual internal signals of hunger. Some are unable to distinguish between hunger and other kinds of dysphoria.

DIFFERENTIAL DIAGNOSIS

Other Syndromes The night eating syndrome, in which persons eat excessively after they have had their evening meal, seems to be precipitated by stressful life circumstances and, once present, tends to recur daily until the stress is alleviated. Night eating may also occur as a result of using sedatives to sleep, which may produce sleepwalking and eating. This has been reported with the use of zolpidem (Ambien) in patients. (See Section 15.3 for further discussion on night eating syndrome.) Binge eating disorder is characterized by sudden, compulsive ingestion of very large amounts of food in a short time, usually with great subsequent agitation and self-condemnation. Binge eating also appears to represent a reaction to stress. In contrast to night eating syndrome, however, these bouts of overeating are not periodic, and they are far more often linked to specific precipitating circumstances. Pickwickian syndrome is said to exist when a person is 100 percent over desirable weight and has associated respiratory and cardiovascular pathology. **Body Dysmorphic Disorder (Dysmorphophobia)** Some obese persons feel that their bodies are grotesque and

loathsome and that others view them with hostility and contempt. This feeling is closely associated with self-consciousness and impaired social functioning. Emotionally healthy obese persons have no body image disturbances, and only a minority of neurotic obese persons have such disturbances. The disorder is confined mainly to persons who have been obese since childhood; even among them, less than half suffer from it.

COURSE AND PROGNOSIS

Effects on Health Obesity has adverse effects on health and is associated with a broad range of illnesses. There is a strong correlation between obesity and cardiovascular disorders. Hypertension (blood pressure higher than 140/90 mm Hg) is three times higher for persons who are overweight, and hypercholesterolemia (blood cholesterol over 240 mg/dL) is twice as common. Studies show that blood pressure and cholesterol levels can be reduced by weight reduction. Diabetes, which has clear genetic determinations, can often be reversed with weight reduction, especially type 2 diabetes (mature-onset or noninsulin-dependent diabetes mellitus). Longevity Reliable studies indicate that the more overweight a person is, the higher is that person's risk for death. A person who reduces weight to acceptable levels has a mortality decline to normal rates. Weight reduction may be lifesaving for patients with extreme obesity, defined as weight that is twice the desirable weight. Such patients may have cardiorespiratory failure, especially when asleep (sleep apnea). A number of studies have demonstrated that decreasing caloric intake by 30 percent or more in young or middle-aged laboratory animals prevents or retards age-related chronic diseases and significantly prolongs the maximal lifespan. The mechanisms through which this effect is mediated are not known, but they may include reductions in metabolic rate, oxidative stress, and inflammation; improved insulin sensitivity; and changes in neuroendocrine and sympathetic nervous system function. Whether long-term calorie restriction with adequate nutrition slows aging in humans is not yet known. Prognosis The prognosis for weight reduction is poor, and the course of obesity tends toward inexorable progression. Of patients who lose significant amounts of weight, 90 percent regain it eventually. The prognosis is particularly poor for those who become obese in childhood. Juvenile onset obesity tends to be more severe, more resistant to treatment, and more likely to be associated with emotional disturbance than is adult obesity.

Discrimination Toward the Obese.

Overweight and obese individuals are subject to significant prejudice and discrimination in the United States and other industrialized nations. In a culture in which beauty ideals are thin and highly unrealistic, overweight people are blamed for their condition and are the subject of teasing, bias, and

discrimination (sometimes called “fatism”). Income and earning power are suppressed in overweight people, and untoward social conditions, such as absence of romantic relationships, are more common. Furthermore, obese individuals face limited access to health care and may receive biased diagnoses and treatment from medical and mental health providers.

TREATMENT

As mentioned above, many patients routinely treated for obesity may develop anxiety or depression. A high incidence of emotional disturbances has been reported among obese persons undergoing long-term, in-hospital treatment by fasting or severe calorie restriction. Obese persons with extensive psychopathology, those with a history of emotional disturbance during dieting, and those in the midst of a life crisis should attempt weight reduction cautiously and under careful supervision. Diet The basis of weight reduction is simple—establish a caloric deficit by bringing intake below output. The simplest way to reduce caloric intake is by means of a low-calorie diet. This strategy requires an adequate amount of protein intake with balanced carbohydrate and fat intake and should be done under medical supervision. The best long-term effects are achieved with a balanced diet that contains readily available foods. For most persons, the most satisfactory reducing diet consists of their usual foods in amounts determined with the aid of tables of food values, which are available in standard books on dieting. Such a diet gives the best chance of long-term maintenance of weight loss. Total unmodified fasts are used for short-term weight loss, but they have associated morbidity including orthostatic hypotension, sodium diuresis, and impaired nitrogen balance. Ketogenic diets are high-protein, high-fat diets used to promote weight loss. They have high cholesterol content and produce ketosis, which is associated with nausea, hypotension, and lethargy. Many obese persons find it tempting to use a novel or even bizarre diet. Whatever effectiveness these diets may have in large part results from their monotony. When a dieter stops the diet and returns to the usual fare, the incentives to overeat are multiplied. In general, the best method of weight loss is a balanced diet of 1,100 to 1,200 calories. Such a diet can be followed for long periods but should be supplemented with vitamins, particularly iron, folic acid, zinc, and vitamin B6 Exercise Increased physical activity is an important part of a weight-reduction regimen. Because caloric expenditure in most forms of physical activity is directly proportional to body weight, obese persons expend more calories than persons of normal weight with the same amount of activity. Furthermore, increased physical activity may actually decrease food intake by formerly sedentary persons. This combination of increased caloric expenditure and decreased food intake makes an increase in physical activity a highly desirable feature of any weight reduction program. Exercise also helps maintain weight loss. It is essential in the treatment of the metabolic syndrome.

Lifestyle Change

A lifestyle change empowers the patient to set goals of weight management. Simple lifestyle modification strategies that patients should be encouraged to follow include: Personal behavior during a meal: Eat slowly and savor each mouthful Chew each bite 30 times before swallowing Put the fork down between bites Delay eating for 2 to 3 minutes and converse Postpone a snack for 10 minutes Serve food on a smaller plate Divide portions in half so another portion may be permitted Reduce eating cues: Eat only at one designated place Leave the table as soon as eating is done Do not combine eating with other activities (e.g., reading or watching television) Do not put bowls of food on the table Stock home with healthier food choices Shop for groceries from a list after a full meal Plan meals Keep a food diary to link eating with hunger and non-hunger episodes Substitute other activities for snacking

Pharmacotherapy

Various drugs, some more effective than others, are used to treat obesity. Drug treatment is effective because it suppresses appetite, but tolerance to this effect may develop after several weeks of use. An initial trial period of 4 weeks with a specific drug can be used; then, if the patient responds with weight loss, the drug can be continued to see whether tolerance develops. If a drug remains effective, it can be dispensed for a longer time until the desired weight is achieved. Orlistat. One weight-loss medication approved by the Food and Drug Administration (FDA) for long-term use is orlistat (Xenical), which is a selective gastric and pancreatic lipase inhibitor that reduces the absorption of dietary fat (which is then excreted in stool). In clinical trials, orlistat (120 mg, three times a day), in combination with a low-calorie diet, induced losses of approximately 10 percent of initial weight in the first 6 months, which were generally well maintained for periods up to 24 months. Because of its peripheral mechanism of action, orlistat is generally free of the central nervous system effects (i.e., increased pulse, dry mouth, insomnia) that are associated with most weight-loss medications. The principal adverse effects of orlistat are gastrointestinal; patients must consume 30 percent or fewer calories from fat to prevent adverse events that include oily stool, flatulence with discharge, and fecal urgency. A lower dosed over-the-counter formulation of orlistat (Alli) was approved by the FDA in 2007. Sibutramine. Sibutramine (Meridia) is a β -phenylethylamine that inhibits the reuptake of serotonin and norepinephrine (and dopamine to a limited extent). It was approved by the FDA in 1997 for weight loss and the maintenance of weight loss (i.e., long-term use). Lorcaserin. Lorcaserin (Belviq) has been approved by the FDA for the treatment of obesity in adults. Lorcaserin is a selective serotonin agonist that suppresses appetite and reduces food intake. One double-blind, placebo-controlled trial showed that obese patients lost about 4 percent more of their body weight in 1 year while on

lorcaserin compared with controls. Additionally, weight loss was maintained in 70 percent of patients who took lorcaserin for 2 years. Another trial showed that obese patients who took lorcaserin 10 mg 1 to 2 times per day in conjunction with nutritional and exercise programs lost 6 percent of their body weight after 1 year. The recommended dosage is 10 mg twice a day. If the patient does not see a 5 percent reduction of their body weight within 12 weeks of treatment, lorcaserin treatment should be discontinued. Side effects of lorcaserin include headaches, dizziness, fatigue, nausea, dry mouth, and constipation. Rare but serious side effects include a chemical imbalance (serotonin syndrome), suicidal thoughts, psychiatric problems, and problems with memory or comprehension. Pregnant women should not take lorcaserin. Phentermine-topiramate. Phentermine-topiramate (Qsymia) has been approved by the FDA for weight management treatment in conjunction with diet and exercise. It combines lower doses of immediate-release phentermine, a weight-loss drug prescribed for short-term use, and controlled-release topiramate, an anticonvulsant. Patients should start at the lowest dose (3.75 mg phentermine/23 mg topiramate extended release), then increase to the recommended dose (7.5 mg/46 mg). In some circumstances, patients may have their dose increased to the highest dose (15 mg/92 mg). In clinical trials, patients have shown an average weight loss ranging from 7 percent (lowest dose) to 9 percent (recommended dose) over those taking a placebo. Side effects include paraesthesia, dry mouth, altered taste, increased heart rate, possible birth defects, and psychiatric problems (depression, suicidal thoughts, impaired memory, and concentration). If the patients do not see a 3 percent reduction in their body weight after 12 weeks on the recommended dose, the dosage may be increased to the highest dose. If patients do not see a 5 percent reduction in their body weight after 12 weeks on the highest dose, treatment with Qsymia should be discontinued.

Surgery Gastroplasty.

Vertical banded gastroplasty (VBG) is a restrictive-only operation that involves creating a small gastric reservoir or pouch measuring 15 to 20 mL in volume, which then empties into the residual stomach through a calibrated or banded outlet. On average, patients lose 40 to 50 pounds of excess body weight over the first 1 to 2 years postoperatively. Vomiting, electrolyte imbalance, and obstruction may occur. A syndrome called dumping, which consists of palpitations, weakness, and sweating, may follow surgical procedures in some patients if they ingest large amounts of carbohydrates in a single meal. Due to such complications, VBG is now only performed in a few centers in the United States. Gastric Bypass. Since the early 1990s, gastric bypass (Fig. 15.4-3) has greatly replaced VBG as the operation of choice. The procedure involves dividing the stomach into two pouches—a small upper pouch and a larger lower “remnant” pouch—and then rearranging the small intestine to connect to both. The expected weight loss averages 70 percent of excess body weight with the

maximum weight loss occurring by 3 years postoperatively (Fig. 15.4-4). The main complications of gastric bypass surgery are primarily seen during the perioperative period. Mortality is less than 0.5 percent and is mainly due to pulmonary emboli or sepsis secondary to anastomotic leakage. Vitamin B12 and iron deficiencies may present and may require oral supplementation. All patients need to take multivitamins postoperatively and need to be followed at regular intervals for nutritional assessment. About 10 to 15 percent of patients will either fail to achieve significant weight loss or regain a significant amount of their loss after 2 or 3 years. This is usually due to consumption of carbohydrates, such as potato chips or other snack foods. Psychological treatment of abnormal eating behaviors is essential to prevent weight gain.

Assessment Procedure

Multiple choice questions based assessment after successful completion of theory and practical sessions

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VALUE ADDED COURSE STUDENT DETAILS

CLASSIFICATION OF EATING DISORDERS AND ITS TREATMENT METHODS- 3RD YEAR STUDENTS

S.No	Register No	Students List	Department	SIGNATURE
1	U13MB264	SIVASANKARI. B	Psychiatry	Sivasankari
2	U13MB265	SNEHA. T (DOB- 10.12.1994)	Psychiatry	T. Sneha
3	U13MB266	SNEHA. T (DOB- 15.01.1996)	Psychiatry	Sneha.
4	U13MB267	SOBICA.D	Psychiatry	Sobica D.
5	U13MB268	SOWNDARAVEL.S	Psychiatry	Sowndaravel
6	U13MB269	SRI SAKTHI PRIYA.N	Psychiatry	Sri Sakthi Priya N.
7	U13MB270	SRILEKHA.D.J	Psychiatry	Srilekha.
8	U13MB271	SRIMUKESH.A	Psychiatry	Mukesh. A.
9	U13MB272	STEPHEN.A	Psychiatry	Stephen
10	U13MB273	SUGANYA.P	Psychiatry	Suganya P.
11	U13MB274	SUGESH CHANDRAN.V	Psychiatry	Sugesh Chandran V.

12	U13MB275	SURIYAKUMAR.G	Psychiatry	<i>Suriya G.</i>
13	U13MB276	SUSINDHARAN. K	Psychiatry	<i>K. Susindharan</i>
14	U13MB277	SWEDHA.P.	Psychiatry	<i>Swedha</i>
15	U13MB278	THAMIZHARUVI. M.	Psychiatry	<i>Thamizharuvi. M.</i>



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Feeding And Eating Disorders Along With Its Management

MULTIPLE CHOICE QUESTIONS

Candidate Name		Assessor Name	
Date of Assessment		Assessor Position	

Course Code: PSYC03

I. ANSWER ALL THE QUESTIONS

1) Which of the following is a diagnostic criterion for anorexia nervosa in DSM-IV-TR?

- a) A refusal to maintain a minimal body weight
- b) A pathological fear of gaining weight
- c) A distorted body image in which, even when clearly emaciated, sufferers continue to insist they are overweight
- d) All of the above

Check your answer

2) In Restricted Type anorexia nervosa, self-starvation is NOT associated with which of the following?

- a) Concurrent purging
- b) Socialising
- c) Body dysmorphic issues
- d) Eating only certain food types

Check your answer



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3) In Binge-Eating/Purging Type anorexia nervosa, self-starvation is associated with:

- a) Not eating to help control weight gain
- b) Not being bothered about weight gain
- c) Regularly engaging in purging activities to help control weight gain
- d) Eating only certain food types

Check your answer

4) High rates of comorbidity exist between anorexia and other Axis I and Axis II disorders. What percentage of anorexia sufferers who also have a lifelong diagnosis of major depression?

- a) 50-68%
- b) 30-40%
- c) 20-30%
- d) 70-80%

Check your answer

5) In Bulimia Nervosa, the purging sub-type, vomiting is the most common form of purging. What percentage of sufferers present with this type of purging?

- a) 50-60%
- b) 80-90%
- c) 15-25%
- d) 50-60%



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Check your answer

6) In Bulimia nervosa, the nonpurging sub-type, a behaviour which is used to compensate for bingeing is

- a) Exercise
- b) Controlling intake of certain food types
- c) Withdrawing from social interaction
- d) Controlling carbohydrate intake

Check your answer

7) Individuals with bulimia have a perceived lack of control over their eating behaviour, and often report which of the following?

- a) High levels of self-disgust
- b) Low self-esteem
- c) High levels of depression
- d) All of the above

Check your answer

8) Evidence suggests a link between bulimia and Axis II borderline personality disorders (BPD). What percent of women with bulimia meet the criteria for a personality disorder?

- a) 45-55%
- b) 33-61%
- c) 20-30%



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- d) 60-65%

Check your answer

9) Which of the following figures represents the prevalence of binge-eating disorder in the general population?

- a) 1-3%
- b) 5-10%
- c) 15-18%
- d) 7-9%

Check your answer

10) St. Catherine of Siena began self-starvation at the age of 16 years and continued until her death in 1380 (at the age of 32). This was termed by Bell (1985) as?

- a) Anorexia nervosa
- b) Religious fervour
- c) Holy Anorexia
- d) Saintly anorexia



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AND RESEARCH

Feeding And Eating Disorders Along With Its Management

MULTIPLE CHOICE QUESTIONS

Candidate Name	STEPHAN A	Assessor Name	DR ARUN
Date of Assessment	14-11-2021	Assessor Position	ASSISTANT PROFESSOR

UNIVERSITY REG NO:- U13MB272

Course Code: PSYC03

I. ANSWER ALL THE QUESTIONS

1) Which of the following is a diagnostic criterion for anorexia nervosa in DSM-IV-TR?

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- c) A distorted body image in which, even when clearly emaciated, sufferers continue to insist they are overweight
- d) All of the above

Check your answer

2) In Restricted Type anorexia nervosa, self-starvation is NOT associated with which of the following?

- a) Concurrent purging
- b) Socialising
- c) Body dysmorphic issues
- d) Eating only certain food types

Check your answer



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Check your answer

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- b) 33-61%



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AND RESEARCH

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Check your answer

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AND RESEARCH

Feeding And Eating Disorders Along With Its Management

MULTIPLE CHOICE QUESTIONS

Candidate Name	SRI MUKESH A	Assessor Name	DR ARUN
Date of Assessment	14.11.2021	Assessor Position	ASSISTANT PROFESSOR

UNIVERSITY REG NO:- U13MB271

Course Code: PSYC03

I. ANSWER ALL THE QUESTIONS

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- b) Not being bothered about weight gain
- c) Regularly engaging in purging activities to help control weight gain
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Check your answer

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- b) 33-61%



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- c) 20-30%
- d) 60-65%

Check your answer

9) Which of the following figures represents the prevalence of binge-eating disorder in the general population?

- a) 1-3%
- b) 5-10%
- c) 15-18%
- d) 7-9%

Check your answer

10) St. Catherine of Siena began self-starvation at the age of 16 years and continued until her death in 1380 (at the age of 32). This was termed by Bell (1985) as?

- a) Anorexia nervosa
- b) Religious fervour
- c) Holy Anorexia
- d) Saintly anorexia



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CERTIFICATE OF MERIT

This is to certify that **SUSINDHARAN. K** has actively participated in the Value Added Course on Feeding and Eating Disorders Along With Its Management held during July - December 2021 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.


Dr. ARUN SEETHARAMAN

RESOURCE PERSON

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Dr. V.R. SRIVIDHAR

COORDINATOR

Dr. V. R. SRIVIDHAR, MD.,D.P.M.,
Reg. No: 30995
Professor & HOD, Psychiatry
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Kudapakkam, Puducherry-605 502.



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CERTIFICATE OF MERIT

This is to certify that **SURIYAKUMAR.G** has actively participated in the Value Added Course on Feeding and Eating Disorders Along With Its Management held during July - December 2021 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.


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Dr.V.R.SRIDHAR

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Student Feedback Form

Course Name: **EATING DISORDERS**
Subject Code: **PSYC03**

Name of Student: _____ Roll No.: _____

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

SI. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear					
2	Course contents met with your expectations					
3	Lecturer sequence was well planned					
4	Lectures were clear and easy to understand					
5	Teaching aids were effective					
6	Instructors encourage interaction and were helpful					
7	The level of the course					
8	Overall rating of the course	1	2	3	4	5

* Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Signature

Date:



Student Feedback Form

Course Name: EATING DISORDERS

Subject Code: PSYC03

Name of Student: SUGIANYA . P Roll No.: UBMB274

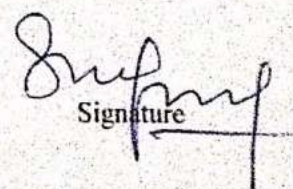
We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear					✓
2	Course contents met with your expectations				✓	
3	Lecturer sequence was well planned					✓
4	Lectures were clear and easy to understand				✓	
5	Teaching aids were effective					✓
6	Instructors encourage interaction and were helpful					✓
7	The level of the course				✓	
8	Overall rating of the course	1	2	3	4	5 ✓

* Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2 – Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Date: 30.6.2021


Signature



Student Feedback Form

Course Name: EATING DISORDERS

Subject Code: PSYC03

Name of Student: SUGESH CHANDRAN Roll No.: U13MB273

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear				✓	
2	Course contents met with your expectations					✓
3	Lecturer sequence was well planned					✓
4	Lectures were clear and easy to understand				✓	
5	Teaching aids were effective					✓
6	Instructors encourage interaction and were helpful				✓	
7	The level of the course					✓
8	Overall rating of the course	1	2	3	4 ✓	5

* Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2 – Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Sugesh Chandran
Signature

Date: 30.6.2021



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Date: 31-12-2021

From

Dr. V.R.Sridhar
Professor and Head,
Department of Psychiatry,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To

The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course:- Feeding And Eating Disorders Along With Its Management.

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: : - **Feeding And Eating Disorders Along With Its Management** . We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr. Sridhar

Dr. V. R. SRIDHAR, MD.,D.P.M.,
Reg. No: 30995
Professor & HOD, Psychiatry
Sri Lakshmi Narayana Institute of Medical Sciences
CS Osudu, Kudapakkam, Puducherry-605 502.

Encl: Certificates

Photographs



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PSYCO3 EATING DISORDERS AND ITS MANAGEMENT – JULY 2021 TO DECEMBER