Pamela K. Keel

Eating Disorders

SECOND EDITION

Eating Disorders

Eating Disorders

SECOND EDITION

Pamela K. Keel

OXFORD
UNIVERSITY PRESS

OXFORD
UNIVERSITY PRESS

Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide. Oxford is a registered trade mark of Oxford University Press in the UK and certain other countries.

Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America.

© Oxford University Press 2017

This book was previously published by: Pearson Education, Inc.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission in writing of Oxford University Press, or as expressly permitted by law, by license, or under terms agreed with the appropriate reproduction rights organization. Inquiries concerning reproduction outside the scope of the above should be sent to the Rights Department, Oxford University Press, at the address above.

You must not circulate this work in any other form
and you must impose this same condition on any acquirer.

Library of Congress Cataloging-in-Publication Data
Names: Keel, Pamela K., 1970–
Title: Eating disorders / Pamela K. Keel.
Description: Second edition. | Oxford : Oxford University Press, [2017] |
Includes bibliographical references and index.
Identifiers: LCCN 2016011938 (print) | LCCN 2016014569 (ebook) |
ISBN 9780190247348 | ISBN 9780190247355 (ebook)
Subjects: LCSH: Eating disorders.
Classification: LCC RC552.E18 K44 2017 (print) | LCC RC552.E18 (ebook) | DDC 616.85/26—dc23
LC record available at http://lccn.loc.gov/2016011938

9 8 7 6 5 4 3 2 1

Printed by WebCom, Inc., Canada

Contents

Preface ix
Acknowledgments xiii

1. Introduction: What Are Eating Disorders? 1
Anorexia Nervosa 2
Bulimia Nervosa 5
Binge-Eating Disorder 7
Other Specified Feeding or Eating Disorder 8
Unspecified Feeding or Eating Disorder 11
Eating Disorders as a Continuum of Problems 12
Conclusion 14

2. Related Conditions That Are Not Eating Disorders 16
Pica 17
Rumination Disorder 18
Avoidant/Restrictive Food Intake Disorder 19
Obesity 21
Conclusion 25

3. Who Suffers From Eating Disorders? 27
Who Suffers in Treatment Samples 27
Who Suffers in Community-Based Samples 28
Eating Disorders and Men 29
Eating Disorders and Race/Ethnicity 32
Eating Disorders in Non-Western Cultures 37
History of Eating Disorders 40

Modern Trends in Incidence and Prevalence of Eating Disorders 50
Conclusion 52

4. Finding the Causes of Eating Disorders: Going Beyond Descriptive Methods 54
Hypotheses 54
Longitudinal Studies 55
Experimental Studies 62
Naturalistic Investigations 66
Conclusion 67

5. Body Image, Dieting, and Eating Disorders: Can We Blame the Media? 69
The Cultural Ideal of Thinness 70
Why Does Thin = Good? 72
Societal Denigration of Overweight and Obesity 75
Body Image 79
Dieting 81
Conclusion 83

6. Family and Peer Factors in the Development of Eating Pathology 85
Psychoanalytic Model of Family Influence 85
Psychodynamic Model of Family Influence 87
Family Systems Model of Family Influence 90
Social Learning Model of Family Influence 92
Influence of Parental Modeling Versus Parental Direct Comments 94
Peer Influences on Eating Pathology 95
Conclusion 100

7. Psychological Factors in the Development of Eating Disorders: The Contributions of Personality and Cognitive-Affective Processes 101
Personality 101
Cognitive and Affective Processes 106
Conclusion 117

8. Biological Bases, Correlates, and Consequences of Eating Disorders 119
Brain Function and Eating Disorders 120
Genetic Contributions to Eating Disorders 131
Physical Consequences of Eating Disorders 139
Conclusion 143

9. Treatment 146
Treatment Use 146

Treatment Modalities 148
Psychotherapy Content and Theoretical Orientations 153
Nonpsychotherapy Interventions 165
Conclusion 168

10. Prevention 170
Prevention Paradigms 170
Prevention Themes and Content 172
Implementing Prevention and Levels of Intervention 172
Conclusion 179

11. Long-Term Course and Outcome 182
Anorexia Nervosa 182
Bulimia Nervosa 186
Binge-Eating Disorder 190
Purging Disorder 191
Comparison of *DSM-5* Eating Disorders 193
Conclusion 195

12. Conclusion 196
Case Studies Revisited 196
Current Knowledge and Ongoing Debates 201
Future Directions 209

Glossary 211
References 219
Additional Resources 251
About the Author 253
Index 255

Preface

I wrote the first edition of *Eating Disorders* to address a problem I encountered while teaching an undergraduate course on this topic. After using a sourcebook of peer-reviewed journal articles for two years, I realized that before progressing to the primary literature, my students needed a text that summarized and synthesized the research base. The problem was that no such text existed. My solution was to write the book I needed and hope that it would be helpful to other instructors and students facing the same problem. This means that I am both the author of this book and an instructor who has used it in my courses. As time passed, I became increasingly (and at times uncomfortably) aware of the gap between what the first edition covered and what was now known about eating disorders. Initially this gap gave me an opportunity to present new and exciting findings in my lectures to supplement the reading. However, as more time passed and the gap grew wider, I knew that the only way to effectively teach my students was to write a second edition.

Since the publication of the first edition of this book in 2005, many new and important findings have emerged in the field. A new edition of the *Diagnostic and Statistical Manual of Mental Disorders* was published, altering the definitions of existing eating disorders and including new eating disorders. Indeed, my own program of research has focused heavily on defining and characterizing the new syndrome of purging disorder—a condition that was not even mentioned in this book's first edition! To reflect these and other advances in the field, information on purging disorder and night eating syndrome has been added to the second edition along with new case studies for each, and a new chapter has been included to address the related conditions of feeding disorders and obesity. The book has also been updated with new findings on the epidemiology of eating disorders to reflect the replication of the National Comorbidity Survey and several epidemiological studies focusing on eating disorders in racial and ethnic minority groups. Other changes include an increased focus on eating pathology in boys and men, more discussion of the influence of peers and social media on eating disorder risk, and descriptions of new findings from neuroimaging studies. One of the most exciting aspects of working on the second edition was the opportunity to

review new studies of prevention programs that reduce risk for the onset of eating disorders, as these studies have fundamentally altered conclusions regarding the success of prevention efforts in the field.

While the coverage of information on eating disorders has been fully updated for the second edition, the topic of eating disorders remains compelling for the same reasons as presented in the first edition. Eating disorders provide a perfect opportunity to examine the intersections of culture, mind, and body. To truly appreciate the causes and consequences of these disorders, one must be willing to consider topics that span the humanities (history, art, and literature), the social sciences (psychology, anthropology, women's studies, and economics), and the natural sciences (anatomy, physiology, pharmacology, and genetics). As a consequence, there is truly something for everyone in the study of eating disorders. Few topics of inquiry allow individuals from so many disciplines to make significant contributions.

Eating disorders are all around us. Almost anyone who picks up this book knows someone who has suffered from an eating disorder. Unlike numerous other topics in academia, eating disorders are often part of our personal lives. Even individuals who are fortunate enough to have never had an eating disorder or watched a loved one suffer from an eating disorder probably know someone who has.

Eating disorders are very topical. Many famous individuals have acknowledged the impact of these disorders on their lives. Thus even people who have not personally known someone with an eating disorder have a sense of familiarity with the problem. This topicality has two consequences. First, people probably know more about eating disorders than about many other subjects that might be covered by a textbook. Second, they probably have far more misinformation about eating disorders than they do about other textbook topics. Thus eating disorders can be both familiar and challenging (rather than more common combinations of familiar and boring or challenging and intimidating).

The field of eating disorders is still young. Sections of this book were difficult to write because there remains much that we simply do not know about these disorders. However, this limitation also represents an opportunity. Because there is so much left to learn, there are many ways that people can make a significant contribution to the knowledge base of these disorders. Young people have completed many fascinating and illuminating studies in the eating disorders field. This book includes many studies conducted by college undergraduates because of the important conclusions that can be drawn from them.

Case Studies

Like most textbooks on psychopathology, this one uses case studies to help bring its subject matter to life. Case studies are particularly important for illustrating eating disorders, since these disorders never exist in a vacuum but rather occur in the context of an individual's life. To balance the competing demands of breadth and depth, five case studies are followed throughout the book. Instead of presenting 25 different cases briefly, the book integrates the topics of different chapters into the lives of these five individuals, providing further insight into each one. For this reason, it is best if the chapters are covered in order. Reading Chapter 1 first would be worthwhile even for individuals who are intimately familiar with

the definitions of eating disorders, because that is where I introduce the cases that guide the reader throughout the text. Similarly, even if the time constraints that are present in any course mean that the final chapters are not part of the assigned reading, it is still worth reading them to learn more about how things turn out for the individuals introduced in Chapter 1.

Features for Students

Terms that may be new to students are defined within chapters and are included in a glossary at the end of the book. Glossary terms are presented in boldface type in the text and are listed at the end of the first chapter in which they play a key role. Italic type is used for other key terms to draw students' attention to important topics within chapters. Tables and figures are also included as study aids. While figures reinforce the information described in the text, tables often provide additional information. Thus figures are illustrative, and tables provide concise reviews of information often not presented elsewhere in the book. Each chapter includes a brief conclusion. The conclusion is not intended to serve as an abstract for the full chapter. Instead, it provides empirically supported take-home points regarding the topic of the chapter (when such conclusions are possible).

This book includes a chapter devoted to research methodology (Chapter 4), with examples from studies of eating disorders. This chapter is designed to enable students who have not completed prior coursework on research methods to critically evaluate the strengths and weaknesses of conclusions drawn from the empirical literature. The chapter also may serve as a refresher for students in advanced psychology courses who have already completed coursework on research methods.

Acknowledgments

I want to start by thanking the instructors and students who used the first edition of *Eating Disorders*. Writing is an important form of communication only when someone reads what you have written. Without those readers, there would be no second edition. I want to thank the reviewers of the chapter drafts, who provided exceptionally helpful feedback regarding opportunities to improve coverage of this growing field so that the book remains useful for a broad audience. I also want to thank the students who have taken my eating disorders class, because they have provided valuable feedback (both positive and negative) about aspects of the first edition which were most and least effective for their learning. Comparison of the first and second editions will reveal a dramatic decline in the number of detailed tables: Students talked, and I listened.

I am deeply indebted to the efforts of many members of the Oxford University Press staff, including Sarah Harrington and Andrea Zekus.

Finally, I want to thank you for your interest in this topic.

Pamela K. Keel

Eating Disorders

1

Introduction

What Are Eating Disorders?

Eating Disorders provides a thorough, research-based overview of current knowledge about eating disorders, including anorexia nervosa, bulimia nervosa, binge-eating disorder, and otherwise specified eating disorders. In addition, the book reviews disordered eating as the pathological end on a continuum with normal eating. Topics are treated from various perspectives to represent the different theoretical orientations in the field. Covered topics include who suffers from eating disorders, including historical and cross-cultural cases of eating pathology; biopsychosocial bases of eating disorders; and treatment and prevention of eating disorders. This exploration integrates findings from theoretical and empirical publications and journal review articles. The text also presents current understandings of the causes, correlates, and outcomes of eating pathology as well as covering the complexity and controversy surrounding these topics. Rather than pointing to one underlying cause for all eating disorders, this book strives to reveal how multiple factors conspire to produce these debilitating and sometimes deadly disorders.

Prior to embarking on this detailed exploration of eating disorders, it is important to define them—the subject of this chapter. Eating disorders are a form of mental disorder recognized in psychology, social work, nutrition, and medicine. Consistent with methods used to define other mental disorders, diagnostic criteria have been established for eating disorders and have been presented in widely used texts, such as the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*, published by the American Psychiatric Association) and the *International Classification of Diseases* (*ICD*, published by the World Health Organization). Three eating disorders—anorexia nervosa, bulimia nervosa, and binge-eating disorder—have received the majority of attention within research and clinical spheres. In addition, there are otherwise specified eating disorders, including purging disorder and night eating syndrome, that have received less study but are gaining greater attention. This chapter describes these syndromes and provides case histories that exemplify patients suffering from each of these disorders. The definitions of these disorders are not set in stone. They have and will continue to change as more is learned. Thus rather than

necessarily representing the discovery of a "natural order" of mental illness, the definitions that follow offer current descriptions of these disorders that allow them to be recognized in clinical settings and studied in research settings.

Anorexia Nervosa

Anorexia nervosa (AN) can be characterized as a self-starvation syndrome. The major sign of the syndrome is emaciation caused by deliberate restriction of food intake. In addition, there is an intense fear of becoming fat or gaining weight, which the AN sufferer may describe explicitly or may express implicitly as behavior aimed at preventing weight gain. Finally, there are body image disturbances, which may include a misperception of being overweight despite being emaciated, undue influence of weight or shape on self-evaluation, or poor recognition of the serious medical consequences of low weight. Diagnostic criteria for AN have been published in the fifth edition of the *DSM* (*DSM-5*; American Psychiatric Association, 2013) and the 10th edition of the *ICD* (*ICD-10*; World Health Organization, 1998). Table 1.1 highlights differences in how these two systems define the syndrome, demonstrating the extent to which definitions are neither universal nor set over time. Indeed, the *ICD-10* is currently being revised to be published as the *ICD-11*.

There is no specific duration criterion for a diagnosis of AN, and there is no universally accepted threshold for defining low weight. Instead, the clinician determines whether a patient has reached a low weight in consideration of the individual's age, gender, weight history, and medical function. The *DSM-5* gives a **body mass index** (BMI) less than 18.5 kg/m^2, as a guideline for recognizing low weight based on the World Health Organization's and Centers for Disease Control's definition of this threshold as the lower bound of a healthy

TABLE 1.1 Differences Between *DSM-5* and *ICD-10* Definitions of Anorexia Nervosa

	DSM-5	***ICD-10***
Weight criterion	Includes qualitative descriptor "significantly low weight" and a guideline of BMI < 18.5 kg/m^2 for assessing whether adult weight is below threshold.	Includes guidelines for body weight of "at least 15% below that expected" or BMI < 17.5 kg/m^2.
Behavior	Specifies restriction of food intake relative to the body's requirements.	Describes combination of avoiding fattening foods with purging (self-induced vomiting or use of laxatives or diuretics), excessive exercise, or use of appetite suppressants.
Endocrine function	Does not require loss of menstrual cycles (amenorrhea) for women.	Includes amenorrhea for women and loss of sexual interest or potency in men and notes other endocrinological disturbances that may be present (e.g., alterations in growth hormone, cortisol, thyroid hormone, and insulin).
Development	Makes no comment on developmental abnormalities	Notes that pubertal development is delayed or arrested if onset is prepubertal.

weight range for adults. (BMI is calculated by dividing an individual's weight by the square of his or her height.) For children and adolescents, a BMI that falls below the 5th percentile for age marks low weight under the *DSM-5* guidelines. However, an individual with a weight above these thresholds may still be considered to have a significantly low weight, depending on other indicators.

There are two subtypes of AN, the restricting type (ANR) and the binge-eating/purging type (ANBP), characterized by the current behavioral features of the illness. The restricting type of AN represents the illness as portrayed in most popular depictions. Individuals with ANR lose weight through restricted food intake, relying on their bodies rather than food to supply the fuel necessary to sustain their level of activity, which is often very high. As the name implies, individuals with ANBP interrupt their dietary restriction by engaging in binge eating, purging, or both behaviors. Although a person with ANBP may meet almost all diagnostic criteria for bulimia nervosa (BN), defined later in this chapter, the presence of AN precludes a diagnosis of BN in the *DSM-5*. Research supports the hierarchy of diagnosing ANBP rather than giving dual diagnoses of AN and BN. Women with ANBP demonstrate more similarities to women with ANR on treatment response and long-term outcome than to women with BN (see Chapters 9 and 11). Moreover, because patients with both subtypes of AN are characterized by medically low weight, treatments must address their medical needs.

Differences between the ANR and ANBP groups have also been reported. Compared with ANR, ANBP is associated with older age, greater impulsiveness, more substance use disorders, and more suicidal behavior. In general, these differences support the distinct behavioral presentations of the two subtypes. Individuals with the ANR subtype have more perfectionistic and constrained eating and other behaviors, while those with the ANBP subtype have more impulsive and out-of-control eating and other behaviors (see Chapter 7). However, longitudinal data (Eddy et al., 2002, 2008; Strober, Freeman, & Morrell, 1997) suggest that a high proportion of women with ANR develop binge-eating episodes later in the course of the illness. Thus, for many individuals, the two subtypes may reflect different stages of the same illness.

Anorexia nervosa predominantly affects women. Across studies the ratio of AN among those seeking treatment for the illness is approximately 10:1 between women and men. The percentage of women who have had AN over a 12-month period (**12-month prevalence**) is 0.4% (American Psychiatric Association, 2013). The proportion of women suffering from AN increased over the 20th century (Keel & Klump, 2003), with the greatest increases observed in adolescent girls. Anorexia nervosa usually develops during middle to late adolescence (ages 14–18 years).

Case Study: Emily

Emily, a 19-year-old sophomore at a large state university, bluntly stated that she had been "forced into treatment" by her school. Emily made it clear that she thoroughly resented the university's interference in her private life, since she had top grades in all classes and was clearly fine. Emily saw no reason to be in therapy or any sort of treatment. At 5 feet 10 inches tall and 109 pounds, Emily had a BMI of 15.7 kg/m^2, well below the 5th percentile for

someone the same age and in the severe range for an adult with AN. Emily's college roommates were extremely worried, because she had needed to be taken to the emergency room after fainting in the dining hall. When asked about the incident, Emily said that she had lost track of the time, hadn't eaten all day, and had become lightheaded after an afternoon run. However, Emily asserted that this was very unusual behavior and that she always had a high-energy snack before exercising. In fact, Emily said she always carried food because of a tendency to be hypoglycemic and, in contrast to what people thought, was eating all the time.

When asked what she would eat during a given day, Emily described having cereal for breakfast, snacking throughout the day, having a salad for lunch, snacking throughout the afternoon, and then eating a full dinner. On further questioning, Emily reported eating one packet of plain instant oatmeal made with spring water for breakfast in her room. The snacks consisted of celery sticks, carrot sticks, or sugar-free gum. Lunch was a "huge" plate of salad greens without dressing from the dining hall's salad bar. Dinner was the only meal that varied from one day to the next. Emily might eat a skinless chicken breast with half of a baked potato and a green vegetable. Occasionally, she ate half a cup of pasta with tomato sauce and vegetables added from the salad bar. On days when the dining hall served nothing she liked, Emily ate two slices of bread with cottage cheese spread over each slice and tomatoes on top—she likened this to pizza—along with a large salad. Based on this self-report, Emily's average daily caloric intake was estimated at less than 500 kilocalories (kcal). In comparison, average daily energy needs for a woman of the same age would fall between 1,500 and 1,800 kcal, depending on daily activity level.

Emily stated that she didn't eat red meat because she didn't like the idea of eating cute, furry animals. In fact, Emily didn't care for meat as a food group but made sure to always include protein in her diet because it was important for muscle development. Emily considered muscle development important because of feelings of constantly struggling with a "lopsided" body. Emily described herself as having a "classic pear shape," with shoulders and arms that were too thin and sticklike, and rotund hips, thighs, and buttocks. To improve her muscle definition, Emily exercised rigorously, running every afternoon between classes and dinner. On weekends, Emily added weight training. She had read that metabolism increased both during and after exercise and felt that this pattern increased the probability that dinner would fuel her body rather than being stored as fat. Emily was terrified of becoming fat.

Emily's concerns about weight had emerged during middle school. Always tall for her age, Emily felt like an "amazon" after entering puberty, because she towered over all of her classmates, including the boys on the football team. In an effort to fit in, she began to diet and lose weight. Emily's mother attributed the weight change to a loss of "baby fat," and friends expressed admiration of her self-control. Emily once was approached in the shopping mall, asked if she had ever considered becoming a model, and given the card of a modeling agency. Although flattered, Emily did not pursue this opportunity because she planned to go to a good college, then go to law school, and eventually become a judge. A career in modeling, Emily felt, would be a waste of her intellect because it required people to focus on superficial things like appearance.

Emily meets the *DSM-5* diagnostic criteria for ANR. She openly expresses a fear of gaining weight, deliberately restricts food intake, and exercises to maintain a weight that

is well below healthy limits for someone her age. The episode of fainting in the dining hall provides a clear indication of insufficient nutrition to maintain normal processes; the loss of consciousness might be explained by hypoglycemia, low blood pressure, or anemia.

Bulimia Nervosa

Bulimia nervosa is characterized by recurrent binge-eating episodes coupled with inappropriate compensatory behavior and undue influence of weight or shape on self-evaluation. Binge eating differs from normal eating in that it involves consuming a very large amount of food within a limited time (typically within two hours) and experiencing a loss of control over eating during the episode. Inappropriate compensatory behaviors include self-induced vomiting, laxative abuse, diuretic abuse, fasting, and excessive exercising. Of these methods, self-induced vomiting is the most common in BN. The first three compensatory methods are considered purging, because they all involve the forceful evacuation of matter from the body. Fasting and excessive exercise are considered nonpurging forms of compensatory behavior, because caloric intake during binge episodes is balanced by not allowing calories into the body or by engaging in strenuous physical activity so that the body burns calories at a higher rate, respectively. The *DSM-5* criteria for BN, unlike those for AN, include a minimum frequency and duration: Binge-eating episodes and inappropriate compensatory behavior must occur, on average, at least once a week over a three-month period. Table 1.2 presents key differences between the *DSM-5* and *ICD-10* diagnostic criteria for BN.

Like AN, BN predominantly affects women, with an estimated 10:1 ratio of women to men suffering from the illness. The overall percentage of women who have had BN over a 12-month period is approximately 1.0–1.5% (American Psychiatric Association, 2013). As with AN, the proportion of women suffering from BN increased in the second half of the 20th century (Keel & Klump, 2003). Bulimia nervosa usually develops during late adolescence to early adulthood. Thus individuals with BN tend to be older than individuals with AN, and approximately 30% of women with BN have a history of AN before developing BN.

TABLE 1.2 Differences Between *DSM-5* and *ICD-10* Definitions of Bulimia Nervosa

	DSM-5	***ICD-10***
Binge eating	Focuses on subjective experience of loss of control over eating.	Describes “preoccupation with eating” and “irresistible craving for food.”
Body image disturbance	Focuses on undue influence of weight and shape on self-evaluation.	Describes a drive for an unhealthy low weight and a likely history of anorexia nervosa.
Behavioral frequency	Requires a minimum frequency of binge-eating episodes and inappropriate compensatory behaviors of once a week for three months.	Includes no minimum frequency or duration requirements.
Co-occurrence with anorexia nervosa	Precludes diagnosis of bulimia nervosa in individuals also meeting full criteria for anorexia nervosa.	Permits diagnosis of both bulimia nervosa and anorexia nervosa at the same time in the same individual.

Case Study: Jean

Jean was a 27-year-old secretary who lived with her boyfriend of two years. She was 5 feet 4 inches tall and weighed 138 pounds. Jean came in for treatment because of a return of eating problems that she thought had ended in college. In college, Jean had experienced binge-eating episodes and had engaged in self-induced vomiting. Jean spent a great deal of time trying to hide these behaviors from roommates and from family when home during breaks. However, her roommates confronted Jean after a particularly bad episode in which she had gone to the bathroom to vomit four times within a two-hour period.

Treatment had allowed Jean to stop binge eating and purging on a regular basis. Jean continued to have occasional slips—times when she felt she had eaten too much and purged to avoid weight gain. However, these occurred rarely, and sometimes Jean prevented herself from vomiting after "eating too much." About a year and a half ago, Jean had noticed that she was gaining weight and could no longer fit into the same size jeans she had worn since high school. Jean couldn't bring herself to buy larger jeans because she couldn't feel good about herself unless she fit into that specific size. She decided to diet and go to the gym more regularly. At first, the new fitness routine worked, and Jean lost approximately seven pounds. At a weight of 125 pounds, Jean felt great and was more likely to want to go out with friends and to flirt with and get attention from men.

However, when Jean and her boyfriend started living together, she had a hard time resisting the tempting foods he kept in the kitchen. While living alone, Jean had never had cookies, ice cream, or potato chips in the house, because these had been common triggers for binge-eating episodes. Now these foods were always around. At first, Jean simply resisted eating them because they were not part of her diet. However, one night, while her boyfriend was out with his friends, Jean ate an entire bag of potato chips and finished off a package of cookies and three-quarters of a gallon of ice cream. Disgusted with herself and in pain from consuming so much food, Jean made herself throw up. Afterward, she went to the store to replace the food. To hide the fact that she had bought new food, Jean used the garbage disposal to get rid of some of the new ice cream and cookies so that the packages looked as they did before. Jean vowed not to eat any more of these "dangerous foods" and told herself that this was just a slip. However, the next week, when Jean was alone in the apartment, the same cycle happened again. She would binge and purge only when alone, because that was when the impulse became irresistible.

Jean was now binging and purging several times a week, even leaving work early to get home to binge and purge before her boyfriend arrived. Jean had regained the lost weight and had found that her weight was creeping above its pre-diet level. She then redoubled her efforts at dieting, as well as using self-induced vomiting, to counteract the effects of the binge episodes. Jean even began vomiting when eating normal amounts of food, because it felt necessary to eat as little as possible to get rid of the unwanted weight. She felt disgusted with herself. As Jean's weight increased, she felt worthless and revolting.

Jean meets the *DSM-5* diagnostic criteria for BN. Her behavior appears to be a recurrence of the eating disorder from college. It is unclear whether Jean ever fully recovered from her earlier disorder, because she seemed to continue to base her self-evaluation on her weight and shape even after the binge eating and purging had gone into remission. In addition,

when living alone, Jean had avoided foods that she felt might trigger a binge-eating episode rather than feeling able to eat these foods in moderation.

Binge-Eating Disorder

Binge-eating disorder (BED) is characterized by recurrent binge-eating episodes in the absence of inappropriate compensatory behavior. Binge episodes in BED are defined as they are for BN and are also characterized by eating more rapidly than normal, eating until feeling uncomfortably full, eating large amounts of food when not hungry, eating alone because of feeling embarrassed by the amount eaten, and feeling disgusted, depressed, or very guilty after overeating. For a diagnosis of BED, three of these characteristic features are required; however, from the case study of Jean, it is clear that many of these factors also characterize binge episodes in BN. In addition, individuals must experience marked distress regarding their binge eating. As with BN, the *DSM-5* diagnostic criteria for BED include a minimum frequency and duration: Binge-eating episodes must occur on average at least once per week over a period of three months. Also as with BN, there is a diagnostic hierarchy such that a person who simultaneously meets criteria for AN and BED is given a diagnosis of ANBP only. Because a diagnosis of BED requires the absence of inappropriate compensatory behavior, it is also not possible to be diagnosed with both BN and BED. Binge-eating disorder was included as a provisional diagnostic category in the fourth edition of the *DSM* (*DSM-IV*; American Psychiatric Association, 1994) and added as an official diagnostic category in the *DSM-5*. Binge-eating disorder was not included in the *ICD-10* but may be added to the *ICD-11*.

Like AN and BN, BED is more common in women than in men (Hudson, Hiripi, Pope, & Kessler, 2007); however, the gender difference is not as dramatic. In US adults, 1.6% of women and 0.8% of men reported having BED over the past 12 months (American Psychiatric Association, 2013), suggesting a 2:1 ratio of women to men. The age of onset for BED may have a bimodal distribution, with many individuals reporting problems with overeating since childhood and others reporting significant problems beginning in late adolescence or early adulthood after a period of significant dieting (Manwaring et al., 2006; Spurrell, Wilfley, Tanofsky, & Brownell, 1997). Individuals with BED tend to be significantly overweight or obese. However, this is not a requirement for diagnosis, and it is not true for all individuals with BED (Keel, Holm-Denoma, & Crosby, 2011).

Case Study: Jamie

Jamie's problem was simply stated: "I eat too much. For some people, it's alcohol; for some it's cocaine. For me it's food." This had always been true; even when Jamie was a small child, a whole box of Twinkies was a single serving. For a junior high school bake sale, Jamie's mother had baked a cherry pie. The pie, Jamie's favorite dessert, was gone before the start of school that day. When the teacher asked for the dessert, Jamie lied to conceal the gluttony. There had been many times like this throughout childhood—episodes of eating all of something rather than just one serving. However, because Jamie was tall and athletic, that big appetite was often a source of pride rather than embarrassment. In fact, everyone on the athletic teams ate large amounts of food, so Jamie didn't feel unusual most of the time. Jamie

didn't realize there was any eating problem until the end of college, when job interviews started. It was the first time Jamie needed to buy a suit but couldn't fit into any of the sizes offered in the normal department store. Jamie was embarrassed by having to go to a special store that stocked larger sizes.

At 35 years of age, Jamie currently weighed 360 pounds, despite several diets and weight loss programs. Jamie was frequently able to lose some weight on these programs; the greatest loss had been 50 pounds, down from 280 to 230 pounds. However, as at all other times, the weight had come back—and more. Jamie denied eating when not hungry but acknowledged eating to the point of being uncomfortably full. Jamie felt that this was because, when hungry or with favorite foods, eating occurred at one rate: "as much and as quickly as possible." Jamie said it was like being a "food addict"; there was no way to stop until all of the food was gone. For example, Jamie would consume three "value meals" from the local fast-food restaurant in the car on the way home from work. Eating alone in the car, Jamie said, was "the best," because "I can just zone out." Terrible guilt followed these episodes, because Jamie knew that eating so much junk food contributed to the weight problem—and could lead to heart problems. However, Jamie didn't like salads, vegetables, or fruit because they were bland and boring. "I wish I felt about fast food the way that I feel about salads because then I would be thin as a rail." Recognizing the existence of an eating problem that occurred every day—often throughout the day—Jamie wanted to know if there was any medication that would cause weight loss or make it easier not to eat. Based on all of the TV advertisements for such products, Jamie felt like a good candidate for medication.

Jamie meets the *DSM-5* diagnostic criteria for BED. Although the distress over eating was a consequence of being overweight, the extent to which Jamie viewed the eating problems as contributing to the weight problems led Jamie to experience marked distress over the binge eating as well.

Other Specified Feeding or Eating Disorder

The *DSM-5* category of "other specified feeding or eating disorder" (OSFED) represents a diverse set of clinically significant disorders that do not meet the specific diagnostic criteria for AN, BN, or BED. Clinical significance is defined in terms of current distress and impairment due to disordered eating. Individuals who have trouble fulfilling major role obligations (e.g., missing or performing badly at work or school) or who experience social problems as a consequence of their disordered eating can be diagnosed with OSFED. Conditions within this category have sufficient evidence to be named and described, but more study of these diagnoses is needed to understand their clinical utility for predicting treatment response, course, and outcome.

Table 1.3 lists examples of OSFED from the *DSM-5* with brief descriptions. In some cases, the disorders are characterized as "subthreshold" because they resemble defined eating disorders but fall short of full diagnostic criteria (e.g., bulimia nervosa of low frequency and/or limited duration). Other disorders simply differ in clinical presentation from the defined eating disorders (e.g., night eating syndrome). While some cases of OSFED are less severe than their full-threshold counterparts (Garfinkel, Lin, et al.,

TABLE 1.3 Other Specified Feeding or Eating Disorder in *DSM-5*

Disorder	Description
Atypical anorexia nervosa	Individuals are not underweight despite the significant restriction of food intake, weight loss, and body image disturbance that characterize AN.
Bulimia nervosa of low frequency and/or limited duration	Individuals have episodes of binge eating and inappropriate compensatory behavior less than once a week, for less than three months, or both. Individuals also experience undue influence of weight and shape on self-evaluation.
Binge-eating disorder of low frequency and/or limited duration	Individuals have episodes of binge eating less than once a week, for less than three months, or both. Individuals report at least the 3 of 5 features that's a criterion for BED associated with their binge-eating episodes as well as marked distress over their binge eating.
Purging disorder	Individuals use self-induced vomiting or laxatives, diuretics, or other medications to purge following consumption of normal or small amounts of food but are not underweight.
Night eating syndrome	Individuals experience recurrent nocturnal eating episodes (waking from sleep to eat at night or excessive food intake following dinner) that they remember and that contribute to distress or functional impairment.

1995), this is not true for all forms of OSFED. For example, a person who purged multiple times a day for over a year without binge eating would have the OSFED of purging disorder, and no one would argue that this individual had a less severe eating disorder than someone who met the BN criterion of binge eating and purging once a week for three months.

In older editions of the *DSM*, OSFEDs fell within the broad category of "atypical eating disorder" (American Psychiatric Association. 1980) or "eating disorder not otherwise specified" (American Psychiatric Association, 1987; 1994). However, as is evident from Table 1.3, those labels had very little meaning, given the heterogeneity of clinical presentations that are defined by not being AN of BN. The decision to name (i.e., specify) these syndromes was intended to spur more research, given the tendency to "study what we define" (Walsh & Kahn, 1997).

Case Study: Valerie

Valerie wasn't sure if she had a "real" eating disorder. She never identified with the magazine stories about skeletal actresses terrified of becoming fat or with TV movies about desperate teens who seemed to have perfect lives but who secretly gorged on food to stuff their feelings down and then vomited to void their emotional pain. Valerie knew that what she did wasn't "normal" and understood that it might be dangerous—the blood in her vomit worried her – but she wasn't sure if she had an "eating disorder." The "aha" moment came when a link on "purging disorder" drew her attention while searching the Internet for information about vomiting blood. On reading the associated article and viewing a brief video clip, Valerie found that they matched what she had been doing for the last eight years. Valerie started scouring the Internet for more information, eventually finding an e-mail address for the person in the video clip and composing a message—a combination of affirmation that the disorder was real and a request for help. Valerie paused, wondering if she really wanted to

attach her name to an admission of what she had been doing and if the person in the clip would even read or respond to the message. Finally, Valerie hit "send," exhausted from eight years of trying to convince herself that if no one ever noticed or asked about the vomiting, it must not be that big of a deal.

This was the message Valerie sent:

> I just found an article on Purging Disorder and wanted to know if you needed any one for your research. I think I've had this Disorder for several years. I had a bad case of mono in secondary school and lost over 4 kilograms while I was sick. I didn't want to gain the weight back. So, I tried to eat only what I had been eating whilst sick—chicken noodle soup, saltine crackers, and water. That worked for a while, but then my parents were worried that something else was wrong, and I started trying to eat normally around them so they wouldn't worry. I remember the first meal I got rid of—it was my mum's Shepards Pie. I felt so sick afterwards, like I had eaten the whole dish. I felt bloated and gross and was convinced that after weeks of living on chicken noodle soup and crackers, I had ruined it all with one dinner. So, I went to the bathroom, locked the door, turned on the shower, and threw up in the toilet until my stomach felt completely empty and clean. I felt relieved and in control again. I don't throw up every time I eat. Sometimes I can eat and be fine. Sometimes even a small amount of food has to be gotten rid of. But I never have huge binges, and I've never starved myself, and I've never gotten very thin. I am the thinnest that I've ever been, and everyone tells me that I look great and that I shouldn't worry about my weight. Of course, they don't know what I do to keep the weight off. What frightens me most is that if I eat normally and don't purge, then I would get really fat. But I'm also frightened that I'll never be able to eat normally, and I don't know when I'll stop this. I'm hoping that you can tell me what to do.

Valerie's pattern of eating is consistent with a diagnosis of purging disorder. Although the eating disorder has kept her weight lower than it might otherwise be, it is within the healthy range, and Valerie has not lost substantial weight. Thus neither AN nor atypical anorexia nervosa fits the symptoms. Valerie does not experience episodes of large, out-of-control eating binges and thus cannot have BN. Instead, Valerie vomits after normal or small amounts of food. It is unclear how often she purges, but this behavior represents a recurrent pattern, causes distress, and causes medical problems.

Case Study: George

George originally sought help through a sleep clinic because of trouble sleeping. His snoring was so bad that he no longer was able to sleep in the same bed as his wife. George described spending half of the night sleeping on the couch and half of the night up and feeling exhausted the next day. Results of sleeping tests indicated that George suffered from sleep apnea, which was likely made worse by weight: at 45 years old, George was 5 feet 11 inches tall and weighed 260 pounds. He was given a special mask that would ensure sufficient oxygen flow while sleeping. In addition, George's doctor explained how even modest weight

loss and regular physical activity could improve sleep and quality of life. George felt like the sleep problems contributed to the weight problems, because frequently on waking up at night, he would get something to eat to help him feel sleepy. Once full, George would lie down on the couch in front of the TV and eventually fall asleep. The next morning, he didn't feel hungry at all.

The doctor asked more about George's eating patterns. George reported generally skipping breakfast, in order to get as much sleep as possible before going to work, and if he ended up getting into work late, skipping lunch as well to make up the time. George started feeling hungry around mid-afternoon. Thus he was always hungry for dinner and usually had a big meal. George joked that it was as if his whole body was on the night shift. More nights than not, George would have a second or third meal in the middle of the night, when everyone else in the house was asleep. He would eat the leftovers from dinner, finish with a bowl of cereal, and then, if still up and hungry, might make some scrambled eggs and toast. In George's mind this was like having breakfast before getting to sleep, since he wouldn't be hungry for it in the morning.

After listening to George describe this pattern of eating, the doctor suggested seeing a specialist in the eating disorders clinic of the hospital. George was skeptical about going, because he wasn't an underweight teenage girl. However, the doctor explained that his colleagues were studying a condition called night eating syndrome and might be able to help figure out a way to get George's eating on schedule while the team at the sleep clinic helped him get back to sleeping through the night.

George's eating patterns include **nocturnal eating**: eating at night after dinner, especially having to eat after waking from sleep in order to get back to sleep. The problems seem to stem from a disruption in circadian rhythm such that George's body is awake and wants food at night, when it should be asleep, and feels very tired but not hungry during the day. Although this pattern would be conducive to working the night shift, it is very disruptive for anyone with a nine-to-five job. Because George does not report a sense of loss of control over the night eating, the eating episodes do not meet criteria for binge eating, even if George consumes a larger amount of food than most people would eat under similar circumstances.

Like BED, night eating syndrome appears to be more common among overweight individuals. Not all individuals with night eating syndrome engage in nocturnal eating; some simply consume the majority of their calories in the later evening. It has been posited that digesting large quantities of food in the late evening may contribute to sleep problems. All of George's problems likely contribute to one another. Poor sleep contributes to the eating, which contributes to the weight, which contributes to the sleep apnea, which contributes to the poor sleep.

Unspecified Feeding or Eating Disorder

The final diagnostic category in the *DSM-5* is "unspecified feeding or eating disorder," which includes any significant disorder of eating that does not meet the criteria for AN, BN, or BED but for which the individual making the diagnosis does not specify the reasons. This diagnosis is often given when a clinician has determined that an eating disorder is present;

cannot fit the symptom profile to AN, BN, or BED; and does not have the time or resources to clarify on the nature of the problem but needs a diagnosis to make a referral to a specialist. This diagnosis also may be given for individuals who do not meet the full criteria for a feeding disorder (described in Chapter 2); feeding disorders (pica, avoidant/restrictive food intake disorder, and rumination) do not have named variants in the OSFED category.

That an unspecified category is needed reveals the extent to which observed eating problems exceed the number of conditions that have sufficient bases in research to be named and described in the *DSM-5*. Numerous labels have emerged (mostly in the popular literature) to capture these unspecified eating problems, including "orthorexia," "drunkorexia," and "female athlete triad," among many, many others. Briefly, orthorexia refers to individuals who feel compelled to follow rigid rules about eating "right." In orthorexia what counts as eating right tends to reflect concerns about health (e.g., eating organic foods) or being socially conscious (e.g., eating locally grown foods) but results in a highly restricted diet that interferes with the person's everyday life. Drunkorexia has been characterized in late adolescent and young adult individuals (e.g., high school and college students) who restrict their intake of food to "save calories" for excessive alcohol consumption. The female athlete triad involves (1) insufficient caloric intake relative to high caloric demands of athletic performance, (2) menstrual disturbances, including the loss of menstrual cycles (**amenorrhea**), and (3) bone loss (osteoporosis). The female athlete triad has a strong research base, with 239 citations emerging from a search of "female athlete triad" in the PubMed database (compared with 45 citations for "purging disorder"). It is unclear, however, whether the female athlete triad should be considered an eating disorder. It may best be considered a related condition that may or may not be accompanied by disordered eating. Chapter 2 considers other conditions that are related to eating disorders but are not themselves eating disorders, namely, feeding disorders and obesity.

Eating Disorders as a Continuum of Problems

Defining AN, BN, and BED and describing their prevalences represents a categorical approach to eating disorders; that is, an individual either does or does not have one of these disorders. Many experts prefer to think of eating disorders as existing on a continuum. One end of the continuum represents diagnosable eating disorders, and the other end represents healthy eating attitudes and behaviors. This perspective seems to match what is known about the presence of disordered eating attitudes and behaviors in the general population and in the course of individuals' lives. It also eliminates the need for separate categories for BN and bulimia nervosa of low frequency and/or limited duration and may even allow atypical anorexia nervosa to be placed on a continuum with its full-threshold counterpart.

Many people experience disordered eating at some point in their lives. Some may experiment with disordered eating behaviors and never develop any significant problems. Others, however, probably have genuine problems with eating and body image that do not fall within the narrow definitions given to the disorders characterized in the *DSM* or *ICD*. For example, body image disturbance may be present in many women who do not meet the