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Review

Characterization of eating patterns among individuals with eating disorders: What is the state of the plate?

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HIGHLIGHTS

- We review diagnostic definitions for eating disorders.
- We review literature on eating patterns and diet quality in eating disorders.
- We review ecological momentary assessment studies in eating disorders.
- We identify areas for future research on eating patterns in eating disorders.

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ABSTRACT

Eating disorders will affect approximately 18 million individuals in the United States at some point in their lives, and are associated with significant psychological distress, psychosocial and quality-of-life impairment, medical morbidity, and mortality. Although aberrant eating behaviors play a central role in diagnostic definitions for eating disorders, much remains to be learned about eating patterns, diet quality, and energy balance among individuals with eating pathology. The goal of the current paper was to systematically review and integrate findings from published research studies characterizing the eating behaviors of individuals with eating disorders, including findings from both descriptive and laboratory-based research. We also describe results from studies using ecological momentary assessment — a methodology that assesses individuals' behaviors in their natural environment as they occur, which may reduce retrospective recall bias, and provide improved ability to prospectively assess the temporal occur of changes in multiple eating behaviors over time. We conclude with suggestions for future research, including the need for additional studies to test for differences in eating patterns among different demographic groups of individuals with eating disorders, and the need for new, more objective, assessment tools.

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1. Introduction

Eating disorders will affect approximately 18 million individuals in the United States at some point in their lives [54], and are associated with significant psychological distress, quality-of-life impairment [22,88], and medical morbidity (for a review, see [94]). The risk for mortality for individuals suffering from eating disorders is higher than for any other psychiatric disorder [18,51,91], and on par with mortality rates for serious non-psychiatric diseases, such as acute lymphocytic leukemia [55]. Mortality in individuals with eating disorders is often related to the effects of starvation (e.g., renal failure or heart attack) or to suicide [18,145]. Although eating disorders represent significant public health concerns, treatments for certain eating disorders often are inefficacious [10], and much remains to be learned about psychological, biological, and behavioral factors involved in the etiology and maintenance of eating pathology.

1.1. Diagnostic definitions of eating disorders

The Fifth Edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; [3]) includes four specific eating disorders: anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), and other specified feeding or eating disorder (OSFED) (see Table 1). The cardinal feature of AN is restriction of energy intake relative to requirements that results in a significantly low body weight. Additional symptoms include an intense fear of gaining weight or becoming 'fat', or persistent behavior that interferes with weight gain, and disturbance in the way in which one's body weight or shape is perceived. Notably, a portion of individuals with AN may also regularly engage in binge eating and/or purging behaviors (forced expelling of food or calories from the body [e.g., self-induced vomiting, laxative misuse, diuretic misuse]). Individuals with BN experience recurrent episodes of binge eating (episodes in which the person eats a large amount of food and experiences a subjective sense of loss-of-control over their eating), inappropriate compensatory behaviors (e.g., fasting, excessive exercise, or purging), and their self-evaluation is largely based on their body weight or shape. BED, like BN, is also characterized by recurrent binge eating episodes, but without the accompanying compensatory behaviors. BED requires the presence of several behavioral and cognitive indicators reflecting loss-of-control over eating, and requires that the binge eating episodes be accompanied by marked distress. Low weight is a diagnostic criterion for AN, but not for BN or BED (e.g., if an individual endorses all

Table 1
Diagnostic terms and definitions.

Term	Definition
Objective binge episodes (OBEs)	Eating within a discrete period of time (e.g., within any two-hour period), an amount of food that is 'definitely larger' than what most others would eat during that time under similar circumstances. These episodes must be accompanied by a sense of lack of control during the eating episode (e.g., feeling that one cannot control what or how much one is eating).
Subjective binge episodes (SBEs)	An eating episode that occurs within a discrete period of time, and that is accompanied by a sense of lack of control during the eating episode. However, the eating episode is not definitely larger than what most others would eat during that time under similar circumstances.
Purging	Forced expelling of food or calories from one's body. Includes self-induced vomiting, laxative, diuretic, enema, or suppository misuse. Can also include omission of insulin in individuals with Type I diabetes mellitus, and inappropriate use of thyroid medication.
Inappropriate compensatory behavior (ICB)	Behaviors to counteract the effects of eating or to lose weight. Includes purging behaviors (see above), fasting, and excessive exercise.
Anorexia nervosa (AN)	Self-starvation syndrome characterized by fear of weight gain, and perceptual distortion in how one views one's body weight or shape. Some individuals with AN engage in recurrent episodes of binge eating and/or purging.
Bulimia nervosa (BN)	Recurrent objective binge eating episodes and inappropriate compensatory behavior that occurs once per week or more for three months. Individuals also base their self-evaluation largely upon their body shape or weight. Cannot occur exclusively during episodes of AN.
Binge eating disorder	Recurrent objective binge eating episodes and marked distress that the binge eating is present. Associated with cognitive symptoms, such as feeling disgusted, depressed, or very guilty after the binge eating episodes. Cannot be associated with regular use of ICBs, and cannot occur exclusively during episodes of AN or BN.
Other specified feeding or eating disorder (OSFED)	Eating disorders that cause clinically significant distress, psychosocial impairment, or increase risk for death or disability, but do not meet full criteria for the other eating disorders.