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Alternative methods of classifying eating disorders: Models incorporating comorbid psychopathology and associated features

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HIGHLIGHTS

- Categorical descriptive approaches to psychiatric classification have limitations.
- In the eating disorders (EDs), several alternative nosologies have been described.
- We review alternative models that incorporate comorbid psychopathology.
- Impulsivity, compulsivity, distress, and avoidance versus risk were common themes.
- Comorbidity-based ED classes may promote neurobiologically-informed research.

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ABSTRACT

There is increasing recognition of the limitations of current approaches to psychiatric classification. Nowhere is this more apparent than in the eating disorders (EDs). Several alternative methods of classifying EDs have been proposed, which can be divided into two major groups: 1) those that have classified individuals on the basis of disordered eating symptoms; and, 2) those that have classified individuals on the basis of comorbid psychopathology and associated features. Several reviews have addressed symptom-based approaches to ED classification, but we are aware of no paper that has critically examined comorbidity-based systems. Thus, in this paper, we review models of classifying EDs that incorporate information about comorbid psychopathology and associated features. Early approaches are described first, followed by more recent scholarly contributions to comorbidity-based ED classification. Importantly, several areas of overlap among the classification schemes are identified that may have implications for future research. In particular, we note similarities between early models and newer studies in the salience of impulsivity, compulsivity, distress, and inhibition versus risk taking. Finally, we close with directions for future work, with an emphasis on neurobiologically-informed research to elucidate basic behavioral and neuropsychological correlates of comorbidity-based ED classes, as well as implications for treatment.

Contents

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1. Introduction

There is growing recognition of the limitations of current categorical approaches to psychiatric classification. Although the two leading nosological systems, the *Diagnostic and Statistical Manual of Mental Disorders, 4th ed.* (DSM-IV; American Psychiatric Association, 1994) and the International Classification of Diseases, 10th ed. (ICD-10; World Health Organization, 2010), have many strengths, they also have several serious shortcomings including: 1) heterogeneity in symptom presentation within diagnostic categories; 2) high rates of co-occurrence between putatively distinct diagnoses; 3) lack of agreement between diagnostic categories and findings from clinical neuroscience; and 4) a failure to predict treatment response (Insel et al., 2010; Krueger, Watson, & Barlow, 2005; Widiger & Samuel, 2005).

Nowhere are the limitations of current categorical models of psychiatric classification more apparent than in the eating disorders (EDs). Current approaches to ED classification are based entirely on distinctions among individuals with respect to eating and weight-control behaviors and associated features. For example, individuals with extremely low body weight and cognitive distortions related to shape or weight are diagnosed with anorexia nervosa (AN), regardless of the presence or absence of other disordered eating symptoms (e.g., binge eating, self-induced vomiting, laxative misuse). Conversely, individuals who are normal-weight or overweight may be diagnosed with bulimia nervosa (BN), binge eating disorder (BED), or a variety of EDs not otherwise specified (EDNOS) depending on the frequency, duration, and specific constellation of ED symptoms. Although existing models of ED classification have some advantages (Keel, Brown, Holland, & Bodell, 2012), they also have significant limitations including reliance on post hoc analyses to validate categories derived from clinical consensus, lack of diagnostic stability, and in the DSM-IV, high rates of EDNOS diagnoses (Keel et al., 2012; Wonderlich, Joiner, Keel, Williamson, & Crosby, 2007). Moreover, current psychiatric nosologies provide no insight into potential mechanisms that may drive disordered eating, which limits their ability to inform models of etiology and maintenance, and hinders the development of interventions to target risk and maintaining factors for EDs (Insel et al., 2010).

Given the limitations of current approaches to ED classification, a number of alternative models have been described, which can be divided into two major groups: 1) those that have classified individuals on the basis of ED symptoms; and 2) those that have classified individuals on the basis of comorbid psychopathology and associated features. Alternative symptom-based approaches to ED classification have been reviewed extensively (see, e.g., Keel et al., 2012; Wonderlich, Joiner, Keel, Williamson, & Crosby, 2007; Striegel-Moore, Wonderlich, Walsh, & Mitchell, 2011), and thus will not be a focus of the current manuscript.

In contrast, we are aware of no paper that has provided a comprehensive review of studies examining comorbidity-based approaches to ED classification. Several methods of classifying EDs that incorporate comorbid psychopathology or associated features have been described, and there is a burgeoning literature documenting the validity of these models relative to existing schemes (see, e.g., Holliday, Landau, Collier, & Treasure, 2005; Steiger et al., 2009; Stice, Bohon, Marti, & Fischer, 2008; Wildes et al., 2011). Comorbidity-based approaches to ED classification offer an intriguing alternative to models that focus exclusively on ED symptoms, because heterogeneity in patterns of comorbid psychopathology among individuals with EDs might reflect different pathways to the expression or maintenance of aberrant eating (Westen & Harnden-Fischer, 2001). Furthermore, by focusing on psychopathological dimensions that may be more stable than disordered eating symptoms and have been shown to systematically differentiate ED subgroups, the EDs field could capitalize on work from other areas that has examined behavioral or biological processes that underlie the expression of these traits.

Thus, the overall aim of the current manuscript is to provide a critical review of the literature on comorbidity-based approaches to ED classification. To this end, we searched online databases (e.g., MEDLINE, PsycINFO) using the terms *eating disorder*, *anorexia nervosa*, *bulimia*, *binge eat**, and *purg** coupled with *comorbid**, *classification*, *classify*, *nosology*, *nosological*, *subgroup*, *subtype*, *cluster*, *latent*, *anxiety*, *anxious*, *autis**, *avoid**, *fear*, *inhibit**, *rigid**, *obsess**, *compuls**, *impulsiv**, *borderline*, *depress**, *neurocog**, *neuropsy**, and *reward*. We also scanned the reference lists from articles and chapters for additional papers. In the sections that follow, we describe the results of our review.

2. Early comorbidity-based approaches to classifying EDs

Interest in the potential utility of classifying individuals with EDs on the basis of comorbid psychopathology and associated features is not new. Indeed, clinicians and researchers long have noted that ED patients presenting with particular patterns of comorbid psychopathology differ from their non-comorbid peers on a variety of clinically relevant measures (e.g., trauma history, treatment response). Although some of the "early" comorbidity-based approaches to ED classification no longer are a focus of active research, these models are important because they provide clues about aspects of comorbid psychopathology that may differentiate meaningful subgroups of the ED population, and set the stage for current work incorporating comorbid psychopathology and associated features into the classification of EDs.

2.1. Multi-impulsive versus uni-impulsive EDs

One of the earliest proposals for incorporating comorbid psychopathology into the classification of EDs emphasized the distinction between "multi-impulsive" and "uni-impulsive" (p. 641) forms of bulimia (Lacey & Evans, 1986). In a series of articles, Lacey and colleagues (Lacey, 1993; Lacey & Evans, 1986; Lacey & Moureli, 1986; Lacey & Read, 1993) argued that individuals who present with multiple forms of impulsive psychopathology comprise a distinct subgroup of the psychiatric population characterized by a common underlying mechanism and a poor response to treatment. Although multi-impulsivity was not conceptualized as being specific to EDs, operational criteria for a "multi-impulsive form of bulimia" (p. 644) were described, and this construct has generated considerable interest in the EDs field.

The initial criteria for multi-impulsive bulimia outlined by Lacey and Evans (1986) included: 1) bulimia accompanied by at least one additional impulsive behavior; i.e., "gross alcohol abuse, 'street drug' abuse, multiple overdoses, repeated self-damage, sexual disinhibition, [or] shoplifting" (p. 644); 2) a "sense of being out of control" (p. 644) during impulsive behaviors; 3) impulsive behaviors have a fluctuating course and are interchangeable (e.g., if binge eating and purging subside, alcohol abuse or self-injury may increase); and 4) decreases in impulsive behavior are associated with increases in depression and anger. Several studies have examined the validity of this multi-impulsive