Subtyping women with bulimia nervosa along dietary and negative affect dimensions: A replication in a treatment-seeking sample

C.M. Grilo, R.M. Masheb, and R.M. Berman
Department of Psychiatry, Yale University School of Medicine, New Haven, CT, USA

ABSTRACT. Recent cluster-analysis studies of women with bulimia nervosa (BN) have suggested two subtypes, a pure dietary subtype and a mixed dietary-negative affect. We aimed to replicate the subtyping findings in a clinical study group of 48 adult women with BN. Cluster analyses revealed a dietary-negative affect subtype (56% of cases) and a pure dietary subtype (44% of cases). The dietary-negative affect subtype was characterized by significantly greater eating-related attitudinal psychopathology and associated psychological disturbance. Our findings suggest that severe restraint is a central feature of BN and that affective disturbance, which occurs in roughly half of cases, is associated with greater eating-related attitudinal psychopathology and psychological symptomatology.


INTRODUCTION

Risk factor models of bulimia nervosa (BN) (1) have emphasized the potential roles of dietary restraint (2) and affect regulation (3). Dietary restraint models posit that excessive dieting or restraint increases the likelihood of binge eating (2). Affect regulation models posit that emotional disturbance and coping deficits also increase this likelihood (4). The dual-pathway model proposed by Stice (5) posits that dietary restraint and/or affective regulation problems may trigger binge eating. The dual pathways represent the final proximal factors by which general biopsychosocial factors lead to binge eating.

Stice et al. (6) suggested that some individuals with BN conform better to the dietary restraint model, others to the negative affect model. They subtyped 265 females with BN along dietary restraint and negative affect dimensions. Cluster analyses revealed a “pure dietary” subtype (62% of cases) and a “dietary-depressive” subtype (38% of cases). Both subtypes were similar in their frequency of binge eating and purging behaviors, but the dietary-depressive subtype was characterized by significantly higher levels of weight, shape, and eating concerns, as well as significantly greater levels of associated psychiatric and social maladjustment. Stice et al. (6) concluded that severe dietary restraint is a central feature of BN and that affective disturbances occur in only a subset of cases. However, the combination of dietary and depressive affect signals a more severe type of BN. The present study set out to replicate these subtypings in a clinical study group of female outpatients with BN.

METHOD

Participants
Participants were 48 consecutive adult female outpatients who met DSM-IV (7) criteria for BN, purging subtype. Their mean age was 31.8 (SD=10.0), 96% (n=46) were Caucasian, and 50% (n=24) were single. Body mass index ([BMI; weight (kg) divided by height squared(m²)]) averaged 24 (SD=6.0). Written informed consent was obtained.

DSM-IV (7) diagnoses were derived by consensus, and based on clinical eating disorder interviews conducted by experienced Ph.D.-level research clinicians (CMG, RMM), and relevant portions of two self-report instruments (described below), namely the

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Correspondence to:
Carlos M. Grilo, M.D., Yale Psychiatric Research - Congress Place, Yale University School of Medicine, P.O. Box 200098, 301 Cedar Street, New Haven, CT 06519, USA
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Eating Disorder Examination-Questionnaire (EDE-Q) (8) and the Questionnaire on Eating and Weight Patterns-Revised (QEWP-R) (9).

**Measures**

The EDE-Q is the self-report version of the investigator-based Eating Disorder Examination Interview, 12th Edition version (EDE) (10). It focuses on the previous 28 days and assesses several aspects of eating disorders, such as the frequency of different forms of overeating (including objective bulimic episodes i.e., binge eating defined as unusually large quantities of food coupled with a subjective sense of loss of control) and purging (e.g., vomiting). It has four subscales: dietary restraint, eating concern, weight concern, and shape concern. The dietary restraint subscale reflects attempts to restrict food intake in order to influence weight and shape. The eating concern subscale is self-explanatory. The weight- and shape-concern subscales also measure the degree to which of these concerns unduly influence self-evaluation. Items are rated on a seven-point forced-choice format (0-6), with higher scores reflecting greater severity or frequency. The EDE-Q has been empirically validated with BN (8, 11).

The QEWP-R is another self-report instrument. It assesses each criterion of the DSM-IV (7) eating disorder diagnoses, including BN, and has demonstrated adequate validity (12).

The Three-Factor Eating Questionnaire (TFEQ) (13) is a widely used psychologically established measure with three subscales reflecting important eating disordered domains: cognitive restraint, disinhibition, and hunger. It is widely used in eating disorder studies and has undergone extensive psychometric evaluation (14).

The Beck Depression Inventory (BDI) (15) 21-item version is a psychometrically sound, widely used inventory of the cognitive, affective, and somatic symptoms of depression. Psychometric evaluations have reported adequate internal consistency (alpha coefficient =0.73-0.95), acceptable short-term test-retest reliability, and convergent validity with clinician ratings of depressive symptoms (mean r=0.75) (16). The BDI taps a fairly broad range of negative affect, not just depressive affect. For example, it correlates nearly as strongly with self-report anxiety scales (mean r=0.65) (17) as with other self-report depression scales (mean r=0.68) (16). Higher scores reflect higher levels of depression.

The Rosenberg Self-Esteem Scale (RSE) (18) is a widely used, 10-item measure of global self-esteem and self-worth with established reliability and validity. Studies have reported adequate internal consistency (alpha coefficient =0.72-0.92) and test-retest reliability coefficients generally above 0.85 (18). Subjects rate the items (e.g. ‘On the whole, I am satisfied with myself) on a scale from 1 (strongly agree) to 4 (strongly disagree). Higher scores reflect higher self-esteem.

The Body Shape Questionnaire (BSQ) (19) is a 34-item measure of body dissatisfaction that assesses the frequency of preoccupation with and distress about body size/shape. Respondents rate items (e.g. “Have you felt so bad about your shape that you have cried?”) on a scale from 1 (never) to 6 (always). Higher scores reflect greater dissatisfaction. Cooper et al. (20) demonstrated that body dissatisfaction is a related but distinct problem from overvalued ideas regarding weight and shape (i.e., EDE-Q subscales) that are considered the core cognitive symptomatology of BN (7).

The Impulsivity Control Scale (ICS) (21) is a 15-item measure of impulsivity that is independent of aggressive behavior. Respondents rate items on a 4-point frequency scale (never to very much). The items ask about the tendency to engage in “spur of the moment” or impulsive type acts (e.g., “Do you do things on the spur of the moment?”, “Do you say whatever pops into your head?”). The ICS has demonstrated internal consistency in adults (alpha coefficient = 0.77-0.79) (22). Research has documented associations between impulsivity and bulimia (23).

**Data-analysis plan**

This study set out to see whether 48 BN patients could be subtyped along dietary restraint and negative (depressive) affect dimensions, following the approach used by Stice et al. (6). A cluster analysis was performed on their scores on the EDE-Q dietary restraint scale and the TFEQ restraint scale, and on the BDI and the RSE. To test the validity of this subtyping, we examined whether the BN subtypes differed in the severity of their eating-related behaviors and attitudes as well as in associated psychological domains.