A family history study of binge-eating disorder

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Abstract

Family studies of anorexia nervosa and bulimia nervosa have yielded important information about the etiologies of these eating disorders. By contrast, little is known about familial factors of etiologic importance for binge-eating disorder (BED). The purpose of the current family history study was to assess the prevalence of comorbid psychopathology in a non–treatment seeking female sample of 31 probands with BED, 32 control probands without BED, and their 283 first-degree relatives. In-person semistructured clinical interviews were conducted with the probands, who also served as informants for all of their first-degree relatives. Significantly higher lifetime rates of major depressive disorder, dysthymic disorder, and social phobia were found among women with BED compared with control women. Significantly higher lifetime rates of bipolar (I or II) disorder, any depressive disorder, nearly all anxiety disorders, anorexia nervosa, and BED were reported among the first-degree relatives of women with BED compared with the first-degree relatives of control women. Furthermore, female relatives of women with BED were reported to have higher rates of substance use disorders and dysthymic disorder compared with female relatives of control women without BED. Nearly all disorders that were elevated in relatives of women with BED followed a pattern of independent transmission from BED. The primary exception was substance use disorder among female relatives, whose transmission pattern was consistent with that of a shared etiology with BED. Thus, BED and substance use disorder may share a common mechanism of familial transmission among women.

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1. Introduction

Binge-eating disorder (BED) is characterized by persistent, frequent binge eating that is not accompanied by the regular compensatory behaviors seen in bulimia nervosa (BN). The prevalence rate of BED is estimated to be between 2% and 3% in the general population and between 20% and 30% among university/medical center weight reduction program samples [1-3].

Binge-eating disorder is associated with significant psychiatric comorbidity. As many as 50% of patients with BED have a lifetime history of major depressive disorder and high levels of depressive symptomatology [4-9]. Individuals with BED also report an elevated prevalence of anxiety disorders [6-8], with lifetime rates estimated to be up to 50%. Although there is substantial literature demonstrating elevated rates of substance abuse and dependence in women with BN [10], relatively little is known about substance use disorders in those with BED. One study found no increased rate of substance abuse among obese patients with BED [7]. By contrast, patients with BED do appear to have increased lifetime rates of other eating disorders, specifically BN. For instance, Yanovski and colleagues [7] found a small but significantly greater lifetime history of BN in obese patients with BED compared with obese patients without BED, suggesting the possibility of some shared vulnerability across a range of eating disorders.

One potential strategy to investigate the etiologic importance of comorbid psychiatric disorders is to use a family study design, in which patterns of familial aggregation of various disorders among first-degree relatives of probands are examined. Through examining patterns of aggregation among relatives, one can better understand the nature of the relationship between disorders that coexist in individuals with BED. Specifically, if one observes elevated rates of the comorbid disorder of interest among relatives of
proband with BED who themselves are free of that comorbid disorder, this would suggest some shared familial etiology between BED and that comorbid disorder. If, instead, elevated rates of the comorbid disorder of interest are observed only among relatives of probands who themselves have the comorbid disorder, this would suggest independent familial transmission of BED and the comorbid disorder. Several such family studies of anorexia nervosa (AN) and/or BN have been conducted, but there have been no family studies of BED that have explicitly evaluated patterns of familial transmission with BED and other comorbid disorders.

Both mood and anxiety disorders have been examined in family studies of AN and BN, with mixed findings. Some studies have documented patterns of independent familial transmission of eating disorders and these comorbid disorders [11-13], and some have documented patterns of common transmission [14-17]. There is substantial literature demonstrating elevated rates of substance abuse and dependence in women with BN and their family members [10], with consistent evidence of independent familial transmission [18-20]. Thus, BN does not appear to share a common underlying etiology with substance use disorders. By contrast, published family study data support the likelihood that restricting-type AN and obsessive-compulsive personality disorder share a common liability [13,17]. In contrast to AN and BN, there are few family studies of BED. A recent population-based twin study did find a substantial heritability estimate (41%) for the core syndrome of BED (ie, recurrent binge eating without compensatory behavior), thus supporting the heritable nature of the condition [21]. One recent large, direct-interview family study examined familial aggregation of the BED diagnosis itself [22]. Hudson and colleagues [22] conducted interviews of overweight or obese probands with (n = 150) and without (n = 150) BED. They also interviewed approximately half of the probands’ first-degree relatives. The authors assessed lifetime diagnosis of BED, in addition to current and highest lifetime body mass index. They found that BED aggregated strongly in families, independent of obesity. However, these authors did not report any data on comorbid psychopathology in relatives.

By contrast, Lee and colleagues [23] did examine familial aggregation of BED and other psychiatric disorders. Using a family history design, they compared treatment-seeking obese female probands with and without BED on personal weight history, as well as history of weight, eating disorders, and other psychiatric disorders, among first-degree family members. There were no differences found in the lifetime histories of any eating disorder, including BED, or any other psychiatric illness between the family members of probands with and without BED.

Finally, the only other family study of BED found no increased rate of substance abuse among obese patients with BED themselves but did find an elevated rate of substance abuse in their family members, as reported through family history interviews with probands [7]. This finding needs to be replicated but may indicate a shared familial vulnerability to loss of control or difficulties with impulse modulation. Given the dearth of family studies of psychopathology in BED, and the absence of any such studies with a nonclinical sample, the aim of the current study was to assess the prevalence and familial transmission patterns of comorbid psychopathology among a non–treatment seeking sample of women with and without BED.

2. Methods

2.1. Participants

Participants were 31 female probands with a current diagnosis of BED and 32 control probands without BED and no lifetime history of any eating disorder. Given that binge eating is more common among women [2], many studies of binge eating have been restricted to women [23]. Because our relatively modest sample size precluded an examination of family history by sex of proband, the sample was restricted to women to ease recruitment of a relatively homogeneous group that could be compared with the small existing literature. Exclusion criteria were any self-reported conditions that would interfere with the collection of reliable interview data (eg, current psychosis). All control probands with and without BED were recruited through newspaper advertisements in the community and the medical center where the study was conducted, which solicited participants who have had “difficulty controlling their weight.” Importantly, comorbid psychiatric symptomatology in the proband was assessed by a different interviewer independent of BED ascertainment, so that the interviewer remained blinded to proband BED status. The study was approved by a human subjects review committee, and all study participants provided informed, voluntary, and written consent, in accordance with institutional guidelines. Probands were provided US $75 for their participation.

2.2. Assessment instruments

2.2.1. Binge Eating Scale questionnaire

The Binge Eating Scale (BES) questionnaire [24] initially was used to screen for presence or absence of BED symptoms in all study applicants. This screening instrument has been found to reliably distinguish between those with and without BED by using a threshold of at least 27 to indicate likely presence of BED and a threshold of no more than 17 to indicate likely absence of BED [25]. The BES has been shown to have good test-retest reliability [26] and high internal consistency [24].

2.2.2. Beck Depression Inventory

The Beck Depression Inventory (BDI) is a 21-item self-report assessment of depressive symptomatology experienced
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