

Short communication

Is binge eating experienced as an addiction?

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Abstract

To ascertain to what degree binge eating is experienced as an addiction, this study examined the proportion of women with binge-eating disorder (BED) whose symptoms met criteria for an addiction. Women ($N = 79$) with current BED completed a structured telephone interview to assess for symptoms of a modified version of DSM-IV substance dependence and Goodman's [(1990). *Addiction: Definition and implications. British Journal of Addiction*, 85, 1403–1408] proposed diagnosis of 'addictive disorder'. Most binge eaters (92.4%) met modified DSM-IV criteria for substance dependence, whereas many fewer (40.5%) met Goodman's more restrictive criteria for addictive disorder. Women meeting criteria for addictive disorder had more frequent eating binges than those who did not. Despite certain observed similarities between binge eating and addictions, we argue that BED should remain classified as an eating disorder.

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Is binge eating experienced as an addiction?

Due to the perceived similarity in certain symptoms, binge eating is commonly described and treated as an addiction (von Ranson & Cassin, 2007; Wilson, 1991). A recent survey found that 26.9% of clinicians often or always use addictions-based therapies for eating disorders, and an additional 15.4% refer eating disorder clients to adjunctive addictions-based treatments (von Ranson & Robinson, 2006). The addiction model of eating disorders characterizes binge eating as a physiological food addiction and treats it accordingly by advocating absolute abstinence from certain 'addictive' or 'toxic' foods (Ronel & Libman, 2003). Eating disorders and substance-use disorders co-occur at higher than expected rates, particularly among individuals who binge eat, and conversely, elevated rates of eating disorders are reported by individuals with substance-use disorders (Holderness, Brooks-Gunn, & Warren, 1994). Laboratory findings have provided some evidence that binge eating, like addictions, might involve the endogenous opioid systems (Grigson, 2002; Volkow & Wise, 2005) and the mesocortical dopamine system (Davis,

Strachan, & Berkson, 2004; Volkow & Wise, 2005). Low levels of dopamine D_2 receptors have been reported in individuals with compulsive disorders, including both drug addiction and compulsive overeating (Wang et al., 2001). It has been postulated that compulsive overeating may occur to compensate for reduced activation of reward circuits which are modulated by dopamine (Wang et al., 2001).

It is difficult to determine whether binge eating is an addiction because no gold standard exists by which to judge a behavior as an addiction. Indeed, experts lack a common definition of addiction (Walters & Gilbert, 2000), and "addiction" does not appear as a concept in any existing diagnostic manuals (Shaffer, 1996). Nevertheless, the theoretical construct of "addiction" is widely used and appears to have descriptive utility. Ultimately, whether binge eating is considered an addiction will depend on the breadth of the definition selected.

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) substance-dependence criteria (often considered the prototypical addiction), and Goodman's (1990) proposed 'addictive disorder' criteria are two definitions of addiction that could potentially be applied to binge eating. Goodman (1990) incorporated and adapted many of the criteria for DSM-IV psychoactive substance dependence and

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pathological gambling into his definition of addictive disorder, making it applicable to both psychoactive substances and behavioural addictions. Relative to addictive disorder definitions (such as DSM-IV substance dependence) which require only a subset of criteria to be met, Goodman's (1990) more restrictive diagnostic criteria, which require the presence of four essential symptoms and at least five additional symptoms (see Table 1), are less susceptible to criticism that they are too all-inclusive and at risk of overpathologizing.

The purpose of this study was to examine rates of endorsement of DSM-IV substance-dependence criteria and Goodman's addictive disorder criteria by individuals who binge eat, and the proportion of individuals meeting criteria for an addiction according to these different, though related, definitions of addiction. Because binge eating is commonly described as 'compulsive overeating' or a 'food addiction' (Haddock & Dill, 1999), empirical research addressing this question is long overdue. We investigated individuals with binge-eating disorder (BED) because individuals with anorexia and bulimia nervosa restrict their dietary intake to a greater extent (Wilfley, Schwartz, Spurrell, & Fairburn, 2000), so their binge eating may be driven more by starvation and malnutrition. A secondary purpose of the study was to identify clinical variables that differentiated between individuals who met the criteria for binge-eating addiction and those who did not. We hypothesized that individuals meeting the criteria for binge-eating addiction would have more severe binge-eating symptoms, such as greater binge-eating frequency.

Method

Participants

Community women ($N = 79$) with a current diagnosis of BED who had previously participated in research at our laboratory and agreed to have their name added to a database for possible participation in future studies took part in the study. There were no exclusionary criteria in the study and the participation rate was 100%. The participants were predominantly Caucasian (92.4%) and had a mean age of 44.5 years ($SD = 12.4$).

Materials and measures

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 1996) eating disorder module (and additional detailed probe questions to reliably assess symptoms) was used to assess current BED. The substance-dependence module was used to assess current substance dependence, with the term 'substance' referring to binge eating rather than psychoactive drugs. This modification was made so that binge eating could be compared, as directly as possible, to the prototypical addiction of substance dependence. The term 'substance' dependence henceforth refers to this modified definition. We developed a structured interview to assess for current symptoms of a behavioral addiction according to Goodman's criteria for addictive disorder. Goodman's diagnostic criteria for addictive disorder were

Table 1
Percentage of participants endorsing modified DSM-IV substance-dependence criteria and Goodman's addictive disorder criteria

DSM-IV substance dependence criteria		Goodman's addictive disorder criteria	
Diagnostic criteria	<i>N</i> (%)	<i>N</i> (%)	Diagnostic criteria
Binge eating larger amounts than intended	73 (92.4)	79 (100.0)	A feeling of lack of control while binge eating (required)
Continued binge eating despite knowledge of persistent adverse effects	72 (91.1)	72 (91.1) 69 (87.3)	Continued binge eating despite knowledge of persistent adverse effects Recurrent failure to resist impulses to binge eat (required)
Persistent desire or unsuccessful efforts to control binge eating	66 (83.5)	66 (83.5) 63 (79.7) 62 (78.5) 55 (69.6)	Repeated efforts to reduce, control, or stop binge eating Binge eat more frequently or for longer period than intended Pleasure or relief at the time of binge eating (required) Increasing sense of tension immediately prior to binge eating (required)
Withdrawal (e.g., restlessness, irritability, headaches)	53 (67.1)	53 (67.1)	Restlessness or irritability if unable to binge eat
Great deal of time spent binge eating or recovering from the effects	47 (59.5)	47 (59.5) 41 (51.9)	Great deal of time spent binge eating or recovering from the effects Frequent preoccupation with binge eating
Tolerance: need to consume more food for desired effect	39 (49.4)	39 (49.4)	Tolerance: need to increase frequency/intensity of binge eating
Important activities given up or reduced because of binge eating	38 (48.1)	38 (48.1) 38 (48.1)	Important activities given up or reduced because of binge eating Frequently binge eat when expected to fulfill obligations
Meet full criteria for substance dependence	73 (92.4)	32 (40.5)	Meet full criteria for addictive disorder

Note: DSM-IV = Diagnostic and Statistical Manual of Mental Disorders (4th ed.). DSM-IV substance dependence criteria were modified such that the term "binge eating" replaced "substance". Full criteria for DSM-IV substance dependence require the endorsement of three symptoms. Full criteria for Goodman's addictive disorder require the endorsement of all four required symptoms and five additional symptoms.

translated into questions to assess for each symptom. A copy of the interview can be obtained from the authors.

Procedure

Participants were telephoned and invited to participate in a phone interview examining similarities and differences between binge eating and addictions. They provided demographic information and eating disorder treatment status, then completed the SCID eating disorder module, followed by the two interviews in counterbalanced order: SCID substance-dependence module and Goodman's addictive disorder module. All interviews were conducted by the primary author (a clinical psychology doctoral student) or a bachelor-level psychology student who underwent interview training, role play interviews, and regular supervision throughout the study.

Statistical analysis

The percentage of participants who endorsed each DSM-IV substance dependence and Goodman's addictive disorder criterion were calculated, as were percentages of participants who met criteria for diagnoses of DSM-IV substance dependence and Goodman's addictive disorder. Independent samples *t*-tests were conducted with continuous variables (e.g., binge frequency), and chi-square analyses with categorical variables (e.g., treatment status), to identify differences between individuals who did and did not meet the criteria for binge-eating addiction. A McNemar chi-square analysis was performed to examine whether DSM-IV and Goodman's diagnostic criteria performed differently in their classification of addiction, and Cohen's Kappa was calculated to examine the agreement between DSM-IV and Goodman's diagnoses.

Results

Participants engaged in a mean of 4.0 eating binges/week ($SD = 1.8$) and had been binge eating for a mean of 14.8 years ($SD = 11.9$). Eating disorder treatment had been sought by 20 participants (25.3%) from a physician, psychiatrist, psychologist, counselor, support group, or 12-step program. Only 6 participants (7.6%) had been formally diagnosed with an eating disorder by a psychologist or psychiatrist.

Table 1 presents the percentage of participants who endorsed each DSM-IV substance-dependence criterion and who met criteria for a diagnosis of substance dependence. Almost all participants (92.4%) met criteria for a diagnosis of DSM-IV substance dependence. There were too few participants not meeting full criteria for substance dependence to analyze clinical variables distinguishing the groups.

Table 1 presents the percentage of participants who endorsed each of Goodman's addictive disorder criteria and who met criteria for a diagnosis of addictive disorder.

As expected, fewer participants (40.5%) met Goodman's more restrictive criteria for a diagnosis of addictive disorder. Relative to individuals not meeting criteria for addictive disorder, those who met full criteria engaged in more frequent eating binges, $t(73) = 2.56$, $p = .012$, and were more likely to have been formally diagnosed with an eating disorder, $\chi^2(1, N = 75) = 7.34$, $p = .007$. The two groups did not differ with respect to eating disorder duration, $t(73) = .30$, $p = .77$, or treatment seeking status, $\chi^2(1, N = 75) = 1.67$, $p = .20$.

Thirty-two (40.5%) participants met both DSM-IV and Goodman's criteria, whereas 6 (7.6%) participants did not meet either criteria. In the cases of diagnostic disagreement, 41 (51.9%) participants met DSM-IV but not Goodman's criteria. All participants who met Goodman's criteria also met DSM-IV criteria. Thus, DSM-IV and Goodman's criteria performed differently in the classification of addiction, McNemar $\chi^2(1, N = 79) = 16.44$, $p < .001$, primarily because Goodman's criteria were more conservative. There was a significant but relatively low agreement between DSM-IV and Goodman's diagnoses, $K = .106$, $p = .036$.

Discussion

The present study examined whether binge eating would qualify as an addiction according to modified DSM-IV substance-dependence criteria and Goodman's addictive disorder criteria. Binge eating was classified as an addiction for the majority of participants (92.4%) when using the DSM-IV substance-dependence criteria, but for many fewer (40.5%) when using Goodman's more conservative criteria.

To elucidate similarities and differences between binge eating and addictions, we examined the specific diagnostic criteria participants endorsed. Because some patients describe their binge eating as "a food addiction" or "compulsive overeating", this information may help health care professionals understand what their patients mean by these comments, enabling them to normalize their patients' experience of binge eating rather than dismissing their adamant belief in food addiction. The primary similarities reported by participants included consuming larger amounts of the substance than was intended, continuing to engage in the behavior despite knowledge of persistent adverse effects, and having a persistent desire or making unsuccessful efforts to stop the behavior. In contrast to these symptoms, which had high consensus across participants, the most controversial symptoms of tolerance and withdrawal varied substantially across participants. Common withdrawal symptoms reported were irritability, moodiness, anxiety, restlessness, migraines, insomnia, poor concentration, and lethargy. These withdrawal symptoms are similar to those previously reported by clinicians working with individuals who binge eat (McAleavey & Fiumara, 2001).

The results of the present study suggest that some individuals with BED experience their binge eating as an addiction whereas others do not, just as only a portion of those who regularly consume large quantities of alcohol

and other psychoactive substances are addicted (Volkow & Wise, 2005). That is, only a subset of individuals who consume “addictive” substances or engage in “addictive” behaviours are addicted. Although 50% of college women occasionally engage in binge eating (Striegel-Moore, Silberstein, Grunberg, & Rodin, 1990), fewer than 6% of individuals eventually develop bulimia nervosa or BED (APA, 1994), and an even smaller percentage of these individuals, typically those who engage in more frequent eating binges, would meet criteria for addictive disorder. The research of Wang et al. (2001) suggests that individuals with reduced dopamine D₂ receptors may be more susceptible to developing a binge-eating addiction because they may use food as a means of compensating for reduced activation of reward circuits modulated by dopamine.

These results should not be misconstrued as providing unconditional support for the recharacterization of BED as an addiction. Although many women with BED perceive their binge eating as akin to an addiction, BED also shares core features with anorexia and bulimia nervosa, such as concern with weight and shape, in addition to binge eating itself. Thus, we argue that BED remains best classified as an eating disorder. If BED were instead classified as an addiction, these results suggest that this diagnosis would not fit 8–60% of binge eaters, depending on the definition used.

A discussion of the study’s limitations is warranted. First, participants’ responses may have been influenced by demand characteristics. To minimize demand characteristics, we described the study as an examination of “similarities and differences between binge eating and addictions” rather than using a leading question such as “whether binge eating is an addiction”, which could have contributed to elevated endorsement rates. Second, the reliability and validity of the structured interview assessing Goodman’s addictive disorder criteria have not been tested. Similarly, it is uncertain whether replacing ‘substance’ with ‘binge eating’ in the SCID substance-dependence module changes its psychometric properties. As the utility and psychometric properties of the DSM-IV psychoactive substance-dependence criteria have been widely criticized (e.g., Langenbucher et al., 2004), it may be premature to transport these criteria to the assessment of binge-eating addiction. We used DSM-IV substance-dependence criteria and Goodman’s addictive disorder criteria to assess binge-eating addiction because these criteria have been central in the debate regarding the similarities and differences between binge eating and addictions.

Considering the criticisms against the DSM-IV substance-dependence criteria, an attempted replication of this study with a larger sample of binge eaters might conduct item response theory analyses to examine the performance of each diagnostic criterion as applied to binge eating (e.g., which criteria discriminate participants on the latent dimension of binge-eating severity). The study could also be replicated with individuals with bulimia nervosa, an eating disorder also characterized by recurrent binge eating.

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