

Individual Psychopathology Relative to Reports of Unwanted Sexual Experiences as Predictor of a Bulimic Eating Pattern

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Objective: *The goal of this study was to determine whether family and individual psychopathology mediate the relationship between unwanted sexual experiences and bulimic eating behavior.* **Method:** *Sixty-one women diagnosed with bulimia nervosa and 92 women students and university staff who had never met criteria for an eating disorder completed standardized questionnaires on eating behavior, sexual abuse, individual psychopathology, and family psychopathology.* **Results:** *Linear regression showed bulimic eating behavior to be significantly related to sexual abuse ($\beta = .40$; $p < .0001$; $R^2 = 8.9\%$). However, multiple regression analyses with family and individual psychopathology as independent variables in addition to sexual abuse showed only individual psychopathology to predict significantly abnormal eating behavior ($\beta = .53$, $p < .0001$; overall $R^2 = 49.6\%$). Specifically, depressive symptoms, suicidality, and impulsive behavior, but not substance abuse, were the components of individual psychopathology most directly associated with bulimia.* **Discussion:** *The findings suggest that the primary focus in treatment should not be the traumatic events themselves, but their long-term consequences for the individual.* © 1997 by John Wiley & Sons, Inc. *Int J Eat Disord* 21: 229–236, 1997.

Over the past decade, increased awareness of the deleterious developmental effects of unwanted sexual experiences in childhood and adolescence (Finkelhor, 1990) has led to more systematic inquiries into recollections of early traumatic experiences in women patients as part of routine history taking. Initial observations of high rates of sexual abuse in women patients with bulimia nervosa led to the view that the two phenomena are causally related (Oppenheimer, Howells, Palmer, & Chaloner, 1985; Root & Fallon, 1988). Yet subsequent surveys raised skepticism, since few statistically significant differences in

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the prevalence of unwanted sexual experiences were observed when clinical samples of eating-disordered patients were contrasted with women in treatment for other psychiatric conditions (Bulik, Sullivan, & Rorty, 1989; Finn, Hartman, Leon, & Lawson, 1986; Folsom, Krahn, Nairn, Gold, Demitrack, & Silk, 1993; Pope & Hudson, 1992; Steiger & Zanko, 1990). Furthermore, when rates of childhood sexual abuse in the general population were compared to those of bulimia nervosa patients recruited through advertisements, they were found to be about the same (Pope, Mangweth, Negrao, Hudson, & Cordas, 1994).

Finkelhor (1990) has described long-lasting negative effects of sexual abuse in childhood on the lives of women and men. Studies that have evaluated the psychiatric outcomes of women who reported childhood sexual abuse or assault have shown higher prevalence rates for several psychiatric disorders (Winfield, George, Schwartz, & Blazer, 1990; Pribor & Dinwiddie, 1992). However, if sexual abuse experiences increase the risk of psychiatric morbidity, then specific effects of sexual abuse on the bulimic eating pattern might be difficult to assess in clinical populations of bulimia nervosa patients, given their high psychiatric comorbidity (Hatsukami, Eckert, Mitchell, & Pyle, 1984; Herzog, Staley, Carmody, Robbins, & van der Kolk, 1993) and individual and family psychopathology (Kendler et al., 1991; Waller, 1992; Kassett et al., 1989). Capturing the influence of each of these factors on the abnormal eating pattern requires a method that weighs their relative contribution.

This was the aim of the present investigation. The study was conducted with a clinical population of women patients with bulimia nervosa and a control population of age-matched women with no present or past diagnosis of an eating disorder. The following question was explored: What is the nature of the relationship between unwanted sexual experiences, bulimic eating behavior, individual psychiatric symptoms, and behavior, and psychiatric morbidity in family members?

METHOD

Subjects and Procedure

Bulimia Nervosa Sample

Sixty-one women, aged 16 to 54, consecutively seeking treatment for an eating disorder participated in this study. Ten women were diagnosed with bulimia according to criteria outlined in the 3rd ed. of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric Association [APA], 1980); those subsequently diagnosed qualified for bulimia nervosa according to criteria outlined in DSM-III-R; APA, 1987. Prior to receiving treatment, all women completed standardized measures, as described below. Following completion of the questionnaire, a research assistant who was blind to the type of eating disorder met with each participant to ensure complete answers to all items.

Control Group Sample

Ninety-two age-matched women, 14 to 63 years old, were recruited from students and staff at a university. They were included in the control group only if they had never formally met criteria for any eating disorder, as determined by their response to a screening questionnaire. The controls completed the same standardized measures as the bulimia nervosa sample. They received \$10 for their participation.

Demographic and Body Mass Characteristics

Demographic characteristics included age, marital status, education, and primary role (student, wage earner, homemaker, or other). The body mass index (BMI) was calculated from the weight and height (kg/m^2) reported on the questionnaire.

Measures of Abnormal Eating Behavior

Eating Attitudes

The Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) assesses thoughts, feelings, and behaviors regarding eating and weight. It contains 40 items with responses recorded on 6-point scales ranging from "always" to "never." The item scores were summed to yield a total score, with higher scores indicating more abnormal eating attitudes.

Eating Patterns

Binge eating, vomiting, laxative use, and fasting were eating patterns whose frequencies in the past month were assessed on 7-point scales on which 1 = never, 2 = once a month or less, 3 = several times a month, 4 = once a week, 5 = several times a week, 6 = once a day, and 7 = more than several times a day.

Measures of Personal and Family Psychopathology

Unwanted Sexual Experiences

Explicitly worded open-ended questions were used to ask about childhood sexual abuse, rape, sexual harassment or molestation (as an adult), and about any upsetting sexual experience. This methodology was chosen to elicit information confidentially, although the lack of probing questions to inquire about these experiences may have resulted in underreporting of actual incidents (Koss, 1993). Childhood sexual abuse was defined as any sexual experience occurring when the subject was 17 years old or younger with a member of the subject's family and/or with one or more persons at least 5 years older, including when sex was forced. Rape was defined as any unwanted experience involving genital sexual contact that occurred after the subject was age 17. Sexual harassment/molestation was defined as any unwanted experience (after age 17) that did not involve genital sexual contact, but was sexual in nature. Upsetting sexual experiences included any other sexual experiences not subsumed by the other three categories that the respondent described as upsetting.

Emotional Distress and Suicidality

The Beck Depression Inventory was used to assess emotional distress and suicidality. Its 21 items measure cognitive, motivational, affective, and behavioral symptoms of depression rated for the past week (Beck & Beamesderfer, 1974).

Frequency of current emotional distress was assessed on each of seven items: depression, anxiety, crying episodes, irritability, fatigue, difficulty getting up in the morning, and difficulty falling asleep. Responses were recorded on a 5-point scale (never to always). Suicidality and self-destructive behavior were assessed with three items: Have you ever had thoughts of hurting yourself? Have you ever tried to physically hurt yourself (i.e., cut yourself, hit yourself with intent to hurt, burnt yourself)? Have you ever made a suicide attempt?

Impulsive Behaviors

Impulsive behaviors that were assessed included impulsive spending, impulsive sex, impulsive credit card use, gambling, lying, shoplifting or stealing, and cheating on tests or in other situations. For each activity, responses were recorded on a 4-point scale indicating the frequency with which the respondent had engaged in the activity: 1 = never, 2 = rarely, 3 = sometimes, and 4 = often.

Substance Use

Respondents indicated how many cigarettes they smoke daily. They reported whether they “feel that [they] have ever had an alcohol or drug abuse problem” using a 5-point scale (1 = extreme, 2 = very much, 3 = moderate, 4 = slight, and 5 = not at all). To assess frequency of using alcohol, amphetamines, barbiturates, hallucinogens, marijuana, tranquilizers, cocaine, and other drugs, responses were indicated on 5-point scales (1 = never, 2 = less than monthly, 3 = monthly, 4 = weekly, and 5 = daily).

Family Psychopathology

Participants were asked to identify any first-degree (blood) relatives who had ever had manic depressive illness or depressive disorder, alcohol dependence or abuse, drug dependence or abuse, or a relative with severe anxiety or panic attacks. Responses were coded as to whether subjects had a depressed father, depressed mother, alcoholic father, alcoholic mother, depressed family member, alcoholic family member, or drug-dependent family member.

Composite Variables

Principal component analyses were used to create composite variables for sexual abuse, bulimic eating behavior, family psychopathology, and individual psychopathology. Only variables that loaded on the first principal component with coefficients of greater than 0.25 were included. The sexual abuse variable, accounting for 45% of the variance, consisted of the first principal component (weighted composite) with four items—childhood sexual abuse, harassment or molestation (as an adult), rape, and any upsetting sexual experience. The bulimic eating behavior variable, accounting for 62% of the variance, consisted of the subject’s EAT score, as well as the frequency of bingeing, vomiting, laxative use, and fasting in the past month. The family psychopathology variable consisted of the first principal component, accounting for 35% of the variance, and included items reflecting the presence of depression, alcoholism, and drug dependence in the family members of subjects. The individual psychopathology variable consisted of the first principal component, accounting for 40% of the variance, for items assessing psychological problems in subjects, including (1) emotional distress and suicidality, (2) substance abuse, and (3) impulsive behaviors (described above). These three components of individual psychopathology were also each constructed as composite variables, accounting for 49%, 47%, and 50% of the variance, respectively.

RESULTS

Descriptive Analyses

Demographic Characteristics

There were no statistically significant differences between bulimic and control subjects in age, marital status, or years of education.

BMI, Eating Attitudes, and Eating Patterns

The two groups did not differ significantly in their BMI. However, as expected, women in the bulimia nervosa group scored significantly higher on all measures of disturbed eating, including eating attitudes and eating behaviors, than did women in the control group (all $ps < .0001$).

Sexual Abuse and Other Negative Sexual Experiences

Bulimic subjects reported significantly higher rates of having been sexually molested or harassed as an adult, $X^2(1) = 20.45, p < .0001$, having been a rape victim, $X^2(1) = 6.59, p < .05$, or having had any upsetting sexual experience, $X^2(1) = 4.28, p < .05$, than did control subjects. The difference in rates of childhood sexual abuse between bulimics and controls, however, did not reach statistical significance.

Relationship Between Sexual Abuse, Individual Psychopathology, Family Psychopathology, and Abnormal Eating Behavior

Multiple regression analyses were conducted to examine whether a reported history of sexual abuse and upsetting sexual experiences was associated with abnormal patterns of eating behavior in our sample of control and bulimic subjects; and, specifically, whether family and individual psychopathology mediated the relationship between sexual abuse and abnormal eating behavior. As suggested by Baron and Kenny (1986), four sets of analyses were conducted to test a mediation model. The first analysis included only sexual abuse as a predictor of abnormal eating behavior. The second set of analyses included the additional variables of individual and family psychopathology as predictors of abnormal eating behavior. The third and fourth analyses examined the relationship between psychopathology and abnormal eating behavior, and sexual abuse and psychopathology, respectively, as required for testing the mediation model. All analyses used the composite variables that were created by applying principal component analysis to items related to sexual abuse, eating behavior, psychopathology in family members, emotional distress and suicidality, substance abuse, and impulsive behavior.

Regression Analyses

The top of Table 1 (Equation 1) shows the significant results of the simple linear regression analysis predicting abnormal eating behavior from sexual abuse. Family and individual psychopathology were then entered into the equation. The increment to R^2 test for these two equations was highly significant, $F(3,118) = 19.94, p < .0001$. However, as Table 1 shows (Equation 2), now only individual psychopathology served as a significant predictor of abnormal eating behavior. To further examine the effect of individual psychopathology, its three components—emotional distress and suicidality, substance abuse, and impulsive behavior—were entered into the equation along with sexual abuse and family psychopathology (Equation 3). Emotional distress and impulsive behavior, but not substance abuse, came out as significant predictors of abnormal eating behavior, over and above the effects of sexual abuse and family psychopathology. Notably, in both Equations 2 and 3, when individual psychopathology was included, the relationship between sexual abuse and abnormal eating behavior decreased essentially to zero, suggesting that the psychopathology variable is a single, dominant mediator (Baron & Kenny, 1986).

A linear regression analysis predicting abnormal eating behavior from individual psychopathology showed individual psychopathology to be a highly significant predictor ($\beta = .55; p < .0001$); overall $F(1,122) = 118.63, p < .0001$, and $R^2 = 49.3\%$. A linear regression analysis predicting individual psychopathology from sexual abuse also showed sexual

Table 1. Multiple regression analyses predicting bulimic eating behavior from sexual abuse, family psychopathology, and individual psychopathology

Predictors	Standardized Beta	Overall F Statistic	Overall R ²
Equation 1		$F(1,142) = 13.90^{***}$	8.9%
Sexual abuse	.40 ^{***}		
Equation 2		$F(3,118) = 38.70^{***}$	49.6%
Sexual abuse	.06		
Family psychopathology	.03		
Individual psychopathology	.53 ^{***}		
Equation 3		$F(5,117) = 26.27^{***}$	52.9%
Sexual abuse	.03		
Family psychopathology	.06		
Emotional distress and suicidality	.49 ^{***}		
Substance abuse	-.03		
Impulsive behaviors	.25 ^{**}		

** $p < .01$.

*** $p < .0001$.

abuse to be a highly significant predictor ($\beta = .55$; $p < .0001$); overall $F(1,127) = 14.86$, $p < .0001$, and $R^2 = 10.5\%$. The significant results for both of these equations complete the requirements to establish that individual psychopathology is a mediator of the relationship between sexual abuse and abnormal eating behavior.

Further Analyses

Finally, the same mediation analyses were conducted to test whether similar relationships among sexual abuse, individual psychopathology, and abnormal eating behavior exist when bulimic and control subjects are examined separately. Because the resulting sample sizes were cut approximately in half, some of the regression paths failed to reach conventional levels of statistical significance (e.g., for the sample of 61 bulimia nervosa patients, impulsive behavior was a marginally significant predictor of abnormal eating behavior, $\beta = .31$; $p < .09$, in Equation 3). However, the patterns of results were identical to those found for the combined sample, suggesting that individual psychopathology mediates the relationship between upsetting sexual experiences and abnormal eating behavior both for women with bulimia nervosa and for normal women with disturbed eating patterns and attitudes.

DISCUSSION

This study identified self-reported psychopathology—symptoms of depression, suicidality, and impulsive behaviors in particular—but not a history of sexual abuse, as the overriding factor determining bulimic eating behaviors. Our findings may well explain some of the discrepancies in the literature (Pope & Hudson, 1992). Since many of the previous studies attempted to establish a relationship between a history of unwanted sexual experiences and bulimia nervosa or abnormal eating behavior without assessing other variables (Conners & Morse, 1993), sexual abuse considered alone was repeatedly found to be significantly associated with abnormal eating behavior, just as it was in our study. The association between a bulimic eating pattern and a history of sexual abuse remains controversial even in the recent literature and may well be the result of differ-

ences in the populations and methods used. For example, Hastings and Kern (1994) and Everill and Waller (1995) observed a connection between sexual abuse and bulimic symptomatology, while Kinzl, Traweger, Guenther, and Biebl (1994) observed no such relationship. Our observations provide support for a close link between bulimic eating behavior and the individual's psychological equilibrium (DeGroot, Kennedy, Rodin, & McVey, 1992). They suggest that adverse environmental experiences, such as sexual abuse, constitute but one probable cause for the development of bulimic eating disorders through increasing emotional distress and depressive symptoms. Our results are in accordance with findings that sexual abuse at an early age can be a risk factor for psychiatric disorders, such as alcohol dependence, panic disorder, major depression, and posttraumatic stress disorder (Winfield et al., 1990; Pribor & Dinwiddie, 1992).

Two other factors examined in our study—current substance abuse and psychiatric morbidity in the family—were not found to mediate the relationship between sexual abuse and bulimic eating behavior. Regarding family influences, the presence of a psychiatric condition in a family member per se is not necessarily detrimental to children, and may not be, if parent-child interactions are supportive. Several studies have shown that lack of parental support (Smolak, Levine, & Sullins, 1990) and a chaotic family environment, as recalled by subjects, contribute significantly to the development of bulimic eating disturbances (Hastings & Kern, 1994). In other research, a history of family psychological abuse, such as blaming and criticism (with and without childhood sexual abuse), has been found to increase the likelihood of psychiatric and personality disorders in women with bulimia nervosa and in control subjects (Kinzl et al., 1994).

We conclude, therefore, that the individual's psychological functioning mediates the impact of sexual abuse experiences on bulimic eating behavior. Other influences that might interact with individual psychopathology, such as familial psychological abuse and a chaotic family background, may also play a role. The principal goals of treatment, therefore, should be to provide relief from the emotional distress, along with strategies to normalize eating behavior.

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