Eating Disorders, 10:205–213, 2002
Copyright ©2002 Brunner/Routledge
1064-0266/02 $12.00 + .00
DOI: 10.1080/10640260290081786

BrunnerRoutledge Taylor&Francis healthsciences

Self-Harm Behaviors Among Those with Eating Disorders: An Overview

RANDY A. SANSONE
Wright State University, School of Medicine, Dayton, Ohio and Kettering Medical Center, Kettering, Ohio, USA

JOHN L. LEVITT
Alexian Brothers Behavioral Health Hospital, Hoffman Estates, Illinois, and Clinical Practice, Rolling Meadows, Illinois, USA.

Large epidemiological studies on the prevalence of self-harm behavior among those with eating disorders are not currently available. Using the Medline and PsycINFO databases, the authors collectively summarize data from available studies. The largest group of studies reports the prevalence of suicide attempts among outpatients with bulimia nervosa to be 23% (n = *1211). The prevalence of suicide attempts among bulimic inpatients was 39%* (n = *260), alcoholic bulimics 54%* (n = *76), and outpatient anorexics 16%* (n = *261). Self-injury among bulimic outpatients was 25%* (n = *574), inpatient bulimics 25%* (n = *260), and outpatient anorexics 23%* (n = *52). The authors discuss the possible implications of these findings.*

Self-harm behavior is known to occur among some individuals with eating disorders. While the clinical significance of this association is not empirically clear, self-harm behavior in this clinical group has been associated with early histories of abuse (Fullerton, Wonderlich, & Gosnell, 1995; van der Kolk, McFarlane. & Weisaeth, 1996), dissociation (Brown, Russell, Thornton, & Dunn, 1999), "multi-impulsivity" (Fichter, Quadflieg, & Rief, 1994), personality disorders (Yates, Sieleni, & Bowers, 1989) including borderline personality disorder (Schmidt & Telch, 1990), greater severity of psychiatric illness (Herzog, Keller, Lavori, Kenny, & Sacks, 1992; Newton, Freeman, & Munroe, 1993), and more refractoriness to eating disorder treatment (Nagata, Kawarada, Kiriike, & Iketani, 2000).

The association between eating disorders and self-harm behavior in the eating disorder literature is unclear. The basic texts or "handbooks" (e.g.,

Address correspondence to Randy A. Sansone, M.D., Sycamore Primary Care Center, 2115 Leiter Road, Miamisburg, OH 45342. E-mail: Randy.sansone@kmcnetwork.org

Garner & Garfinkel, 1997) are relatively silent about self-harm in the context of eating disorders. Generally, self-harm behavior is discussed in the context of descriptive or prognostic indicators (e.g., Garner & Fairburn, 1988; Hsu, 1990; Johnson & Connors, 1987). The self-injury literature is, however, a bit more forthcoming on the association between eating disorders and self-harm/self-injury. Conterio and Lader (1998), Favazza (1987), and Miller (1994) view eating disorders as self-injury equivalents. Favazza (1987) suggests that there may be a self-injury rate as high as 35% in anorexia nervosa, 25% in bulimic nervosa, and 40% in bulimics that use laxatives. He then states that as many as 50% of self-mutilators have a history of anorexia or bulimia nervosa. Levenkron (1998) "infers" that the percentage of cutters in our society is similar to that among those who have anorexia nervosa. Conterio and Lader (1998) found that 61% of self-injurers they surveyed reported a current or past eating disorder. Walsh and Rosen (1988) found that self-mutilating teenagers were significantly more likely to have an eating disorder than nonmutilators.

In this paper, we review the available epidemiological data relating to self-harm behavior among those with eating disorders and summarize trends. Under the general heading of self-harm, we include specific behaviors such as suicide attempts, overdoses, and self-mutilation (e.g., cutting or burning oneself).

METHOD

We collected empirical papers for review by entering various search terms in two databases, Medline (back to 1966) and PsycINFO (back to 1967). Entered terms were suicide attempts, self-harm behavior, self-mutilation, self-destructive behavior, and anorexia nervosa, bulimia nervosa, and eating disorders. Resulting articles were reviewed for number of subjects, sample characteristics (e.g., inpatient, residential, outpatient setting), eating disorder diagnoses of subjects, type of self-harm behavior, and prevalence of the designated self-harm behavior in the study population.

Before presenting findings, several caveats are worth noting. First, we cannot determine how inclusive our literature search is because we discovered that the titles or abstracts of some relevant articles might not have reflected the designated search terms. As an example, we encountered one clinical overview article that presented the frequency of suicide attempts within a study population, but this particular self-harm behavior was not emphasized in the title or abstract of the article.

Second, articles with less than 20 subjects or those printed in foreign languages (e.g., Italian, Hebrew) were excluded. Third, when a single population was examined for two or more different behaviors, each self-harm behavior was listed (see Table 1) with the corresponding population size. Thus, a single article exploring the prevalence of suicide attempts and self-

TABLE 1. Self-Harm Behavior Among Those with Eating Disorders[a]

1st author (year)	N	Sample characteristics	Eating disorder population	Self-harm behavior	Prevalence
Bulik (1997)	60	OP	BN, no ETOH	Suicide attempts	11 (18.3%)
Bulik (1997)	54	OP	BN, ETOH	Suicide attempts	26 (48.1%)
Bulik (1999)	152	OP	BN	Suicide attempts	47 (30.9%)
Bulik (1999)	70	OP	AN	Suicide attempts	19 (27.1%)
Demitrack (1990)	30	IP	AN, BN	Suicide attempts/ self-mutilation	14 (46.7%)
Favaro (1995)	259	OP	AN, BN, EDNOS	Suicide attempts	33 (12.7%)
Favaro (1996)	29	OP	BN, P	Suicide attempts	12 (41.4%)
Favaro (1998)	125	OP	BN, P & NP	Self injury	27 (21.6%)
Favaro (1998)	125	OP	BN, P & NP	Suicide attempts	23 (18.4%)
Favaro (1998)	125	OP	BN, P & NP	Hair pulling	44 (35.2%)
Fichter (1994)	196	IP	BN	Suicide attempts	78 (39.8%)
Fichter (1994)	196	IP	BN	Self-mutilation	47 (24.0%)
Fullerton (1995)	98	OP	AN	Suicide attempts	10 (10.2%)
Fullerton (1995)	243	OP	BN	Suicide attempts	70 (28.8%)
Fullerton (1995)	353	OP	ED, NOS	Suicide attempts	82 (23.2%)
Garfinkel (1980)	68	?	AN-BP	Suicide attempts	16 (23.5%)
Garfinkel (1980)	68	?	AN-BP	Self-mutilation	6 (8.8%)
Garfinkel (1980)	73	?	AN-R	Suicide attempts	5 (6.8%)
Garfinkel (1980)	73	?	AN-R	Self-mutilation	1 (1.4%)
Gleaves (1993)	535	Residential	AN, BN, EDNOS	Suicide attempts	110 (20.6%)
Gleaves (1993)	535	Residential	AN, BN, EDNOS	Self injury	105 (19.6%)
Herzog (1992)	41	OP	AN	Suicide attempts	4 (9.8%)
Herzog (1992)	98	OP	BN	Suicide attempts	13 (13.3%)
Jacobs (1986)	40	OP	AN	Suicide attempts/ self injury	14 (35.0%)
Lacey (1993)	112	OP	BN, NL WT	Overdosed	20 (17.9%)
Matsunaga (2000)	64	IP	BN	Suicide attempts	23 (35.9%)
Matsunaga (2000)	64	IP	BN	Self-harming	19 (29.7%)
Mitchell (1986)	185	OP	BN	Self-injurious behavior	60 (32.4%)
Mitchell (1986)	185	OP	BN	Suicide attempts	32 (17.3%)
Mitchell (1987)	44	OP, early/ late onset	BN	Suicide attempts	7 (15.9%)
Mitchell (1990)	25	OP	BN, OW	Suicide attempts	14 (56%)
Mitchell (1990)	25	OP	BN, OW	Self injury	15 (60.0%)
Mitchell (1990)	25	OP	BN, NL WT	Suicide attempts	4 (16.0%)
Mitchell (1990)	25	OP	BN, NL WT	Self injury	5 (20.0%)
Nagata (2000)	29	OP	AN-R	Suicide attempts	2 (6.9%)
Nagata (2000)	29	OP	AN-R	Self-mutilation	4 (13.8%)
Nagata (2000)	23	OP	AN-BP	Suicide attempts	7 (30.4%)
Nagata (2000)	23	OP	AN-BP	Self-mutilation	8 (34.8%)
Rossotto (1997)	71	BN + SA, BN-SA, OP	BN	Suicide attempts	16 (22.5%)
Schmidt (1990)	23	College students	BN	Suicide attempts	0 (0.0%)
Suzuki (1994)	22	IP/OP	BN, ETOH	Suicide attempts or wrist cutting	15 (68.2%)
Suzuki (1994)	22	IP/OP	BN, no ETOH	Suicide attempts or wrist cutting	7 (31.8%)
Welch (1996)	102	OP	BN	Overdose	20 (19.6%)
Welch (1996)	102	OP	BN	Cutting or burning	27 (26.5%)

Note: AN = anorexia nervosa; AN-B = anorexia nervosa, binge-eating/purging type; AN-R = anorexia nervosa, restricting type; BN = bulimia nervosa; EDNOS = eating disorder, not otherwise specified; IP = inpatient; OP = outpatient; ETOH = alcohol; NL WT = normal weight; OW = overweight; SA = substance abuse

[a]Studies with $N > 20$

cutting among 100 subjects would have two individual listings, one for each self-harm behavior.

Fourth, most articles did not describe non-suicide forms of self-harm behavior beyond, for example, the global terms of "self-mutilation" or "self-injurious behavior." Therefore, for the majority of entries, we are unable to describe specific behaviors, such as cutting, burning, hitting oneself, and so forth, and their corresponding prevalence. Fifth, when reporting on a diagnostically mixed population, several articles did not separate out self-harm behavior as a function of eating disorder diagnosis. Likewise, some did not specify the treatment setting. These articles are included in Table 1 but could not be included in the summary of data by eating disorder diagnosis and type of self-harm behavior or treatment setting.

Sixth, several articles dichotomized study populations into specific clinical subsamples to examine a particular feature (e.g., those with alcohol abuse versus those without, those with early onset versus late onset bulimia). This subsample approach may have excluded particular subjects from an initially broader sample. However, if the subsamples were diagnostically defined by type of eating disorder pathology, they were included in the data summary.

Finally, several samples were reported from the same authorship group, each with a different publication date. It was not possible to determine if each individual article represented a new database of subjects. For the preceding reasons, we conservatively describe the following summary of available information on self-harm behavior among those with eating disorders as an "overview."

RESULTS

A summary of the articles on self-harm behavior among individuals with eating disorders, alphabetized by first author, is shown in Table 1.

Suicide Attempts in Bulimia Nervosa

In examining the prevalence of suicide attempts among individuals with bulimia nervosa, we divided available studies into outpatient versus inpatient samples. The largest number of studies within the Table 1 database relate to suicide attempts among *outpatients* with bulimia nervosa. These articles (Bulik, Sullivan, & Joyce, 1999; Favaro & Santonastaso, 1996; Favaro & Santonastaso, 1998; Fullerton, Wonderlich, & Gosnell, 1995; Herzog et al., 1992; Lacey, 1993; Mitchell, Boutacoff, Hatsukami, Pyle, & Eckert, 1986; Mitchell, Hatsukami, Pyle, Eckert, & Soll, 1987; Mitchell, Pyle, Eckert, Hatsukami, & Soll, 1990; Rossotto, 1997; Welch & Fairburn, 1996) encompass a total of 1,211 outpatients with bulimia nervosa. (The study by Schmidt & Telch [1990] was excluded from the preceding summary because partici-

pants were college students; the summarized samples reflect clinical populations.) The prevalence of suicide attempts in this collective outpatient sample was 23% (278 subjects).

With regard to suicide attempts among *inpatients* with bulimia nervosa, only two studies were available (Fichter et al., 1994; Matsunaga et al., 2000). Among the 260 subjects, 101 (39%) reported suicide attempts. Note that the prevalence of suicide attempts among inpatient bulimics was substantially higher compared with outpatient bulimics.

Suicide Attempts in Bulimia Nervosa and Comorbid Alcohol Abuse

Two studies (Bulik, Sullivan, Carter, & Joyce, 1997; Suzuki, Higuchi, Yamada, Komiya, & Takagi, 1994) compared bulimic subjects with and without alcohol abuse. One study (Bulik et al., 1997) exclusively examined outpatients while the second (Suzuki et al., 1994) examined both inpatients and outpatients. Adding these subjects together, 41 (54%) of 76 alcoholic bulimics reported suicide attempts compared with 18 (22%) of 82 nonalcoholic bulimics. Note that the rate of suicide attempts in those without alcohol abuse (22%) is nearly identical to the rate found among bulimic outpatients (23%).

Self-Injury in Bulimia Nervosa

For most studies, self-injury was not described in detail. Among available *outpatient* studies (Favaro & Santonastaso, 1998; Lacey, 1993; Mitchell et al., 1986; Mitchell et al., 1990; Welch & Fairburn, 1996), 143 (25%) of 574 subjects with bulimia nervosa reported self-injury. Among studies of *inpatients* with bulimia nervosa (Fichter et al., 1994; Matsunaga et al., 2000), 66 (25%) of 260 reported self-injurious behavior. Note that the prevalence of self-injury in both populations is identical.

Suicide Attempts in Anorexia Nervosa

Several studies have examined the prevalence of suicide attempts among *outpatients* with anorexia nervosa (Bulik et al., 1999; Fullerton et al., 1995; Herzog et al., 1992; Nagata et al., 2000). Among a total of 261 subjects, 42 (16%) reported such attempts. Only one study differentiated the subtype of anorexia nervosa (Nagata et al., 2000). Surprisingly, we were unable to locate any studies of suicide attempts among inpatients with anorexia nervosa.

Self-Injury in Anorexia Nervosa

We found only one article describing self-injury in anorexia nervosa (Nagata et al., 2000). Among 52 outpatients, 12 (23%) reported such behavior.

DISCUSSION

These data suggest that, among those suffering from bulimia nervosa, the prevalence of suicide attempts varies from a low of 23% among outpatients, to 39% among inpatients, to 54% among those with comorbid alcohol abuse. One observation is that treatment setting, to some degree, is predictive of the prevalence of suicide attempts, with inpatient populations demonstrating a much higher prevalence of such behaviors than outpatient populations.

These data also suggest that comorbid alcohol abuse appears to meaningfully heighten the risk of suicide attempts among bulimic individuals. In this regard, we previously reported our findings regarding three study cells of women (eating disorder only, substance abuse only, both eating disorder and substance abuse; Sansone, Fine, & Nunn, 1994) using the Self-Harm Inventory (Sansone, Wiederman, & Sansone, 1998). We found that the prevalence of self-harm behavior was substantially higher for the comorbid group (i.e., mean number of reported self-harm behaviors was 9.45 for eating disorder only, 9.24 for substance abuse only, and 15.88 for the comorbid group). In this same patient sample, using the Diagnostic Interview for Borderlines (Kolb & Gunderson, 1980), the prevalence of borderline personality among the eating disorder only group was 36%, the substance abuse only group 36%, and the comorbid group 94%. These latter data suggest that character pathology may be a contributory variable to self-harm behavior, and possibly to the heightened risk of suicide attempts, observed in those with bulimia nervosa.

The current review indicates that the frequency of suicide attempts among outpatients with anorexia nervosa is 16%. This percent is considerably lower than the prevalence found in both outpatient and inpatient populations of those with bulimia nervosa. The associated types of character pathology reported for these diagnostic groups might, in part, explain this. In this regard, among those with anorexia nervosa, particularly the restrictor type, there appears to be a higher prevalence of Cluster C personality disorders (Dennis & Sansone, 1997). The fearful, anxious, and inhibited nature of these personality disorders may be protective against overt self-harm behavior. In contrast, among those with bulimia nervosa or the binge-eating/purging type of anorexia nervosa, there appears to be a higher prevalence of Cluster B personality disorders (Dennis & Sansone, 1997). Among the Cluster B disorders, borderline personality may be the most frequent disorder (Dennis & Sansone, 1997). Cluster B disorders are highlighted by impulsivity and borderline personality is the only personality disorder in *DSM-IV* (American Psychiatric Association, 1994) which has a criterion for suicide attempts.

We wish to emphasize that the presence of personality disorder is likely to be but one of several contributory factors to self-harm behavior among individuals with eating disorders. As noted previously, early histories of abuse and the presence of dissociative defenses, as well as highly chaotic family

environments, lack of sufficient parental support, and extensive psychosocial stressors, may also confer significant risk.

According to our findings, the self-injury rate among those with bulimia nervosa appears to be around 25%. Realistically, it is difficult to compare this with the available inpatient samples of bulimic patients or those with anorexia nervosa due to the paucity of studies. However, it could be possible that the individuals who are experiencing self-injury are the same ones attempting suicide.

Our findings are subject to a number of potential limitations, many of which are listed in the methodology. In addition, other potential limitations include: (1) the relatively small numbers of studies and subjects in this area; (2) the lack of disclosure of suicide attempts and/or self-injury by participants due to embarrassment or fears of stigmatization; and (3) the unclear definitions of self-injury in many studies (e.g., scratching oneself versus cutting oneself versus lacerating oneself to the point of requiring stitches). In addition, comparisons of self-harm behavior among eating-disorder diagnostic groupings were compromised by largely unequal samples. Finally, the role of culture cannot be factored into the summaries and many of these studies were non-US ones (e.g., Italy, Japan, Germany).

Future studies need to clearly explicate the incidence, role, and function of self-harm behavior within the eating disorder population, in general, and the subtypes in particular. Additionally, studies need to *simultaneously* explore possible contributory variables (e.g., abuse histories, personality pathology, dissociative tendencies, perceived parental support, family environment stability, psychosocial stressors) to self-harm, use broader measures of self-harm behavior, assess lifelong physical damage caused by self-harm, and determine the social cost, if any. Likewise, cross-cultural studies are needed in this area. While self-harm behavior is likely to be a very complex psychological issue among patients with eating disorders, it appears to demonstrate a meaningful presence in most clinical populations of such patients.

REFERENCES

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington: Author.

Brown, L., Russell, J., Thornton, C., & Dunn, S. (1999). Dissociation, abuse and the eating disorders: Evidence from an Australian population. *Australian and New Zealand Journal of Psychiatry, 33*, 521–528.

Bulik, C. M., Sullivan, P. F., Carter, F. A., & Joyce, P. R. (1997). Lifetime comorbidity of alcohol dependence in women with bulimia nervosa. *Addictive Behaviors, 22*, 437–446.

Bulik, C. M., Sullivan, P. F., & Joyce, P. R. (1999). Temperament, character and suicide attempts in anorexia nervosa, bulimia nervosa and major depression. *Acta Psychiatrica Scandinavica, 100*, 27–32.

Conterio, K., & Lader, W. (1998). *Bodily harm: The breakthrough treatment program for self-injurers*. New York: Hyperion.

Demitrack, M. A., Putnam, F. W., Brewerton, T. D., Brandt, H. A., & Gold, P. W. (1990). Relation of clinical variables to dissociative phenomena in eating disorders. *American Journal of Psychiatry, 147*, 1184–1188.

Dennis, A. B., & Sansone, R. A. (1997). Treatment of patients with personality disorders. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders* (2nd ed., pp. 437–449). New York: Guilford.

Favaro, A., Magnavita, N., & Santonastaso, P. (1995). Suicide attempts by outpatients with eating disorders. *Rivista di Psichiatria, 30*, 47–51.

Favaro, A., & Santonastaso, P. (1996). Purging behaviors, suicide attempts, and psychiatric symptoms in 398 eating disordered subjects. *International Journal of Eating Disorders, 20*, 99–103.

Favaro, A., & Santonastaso, P. (1998). Impulsive and compulsive self-injurious behavior in bulimia nervosa: Prevalence and psychological correlates. *Journal of Nervous and Mental Disease, 186*, 157–165.

Favazza, A. R. (1987). *Bodies under siege: Self-mutilation in culture and psychiatry*. Baltimore: Johns Hopkins University Press.

Fichter, M. M., Quadflieg, N., & Rief, W. (1994). Course of multi-impulsive bulimia. *Psychological Medicine, 24*, 591–604.

Fullerton, D. T., Wonderlich, S. A., & Gosnell, B. A. (1995). Clinical characteristics of eating disorder patients who report sexual or physical abuse. *International Journal of Eating Disorders, 17*, 243–249.

Garner, D. M., & Fairburn, C. G. (1988). Relationship between anorexia nervosa and bulimia nervosa: Diagnostic implications. In D. M. Garner & P. E. Garfinkel (Eds.), *Diagnostic issues in anorexia nervosa and bulimia nervosa* (pp. 56–79). New York: Brunner/Mazel.

Garner, D. M. & Garfinkel, P. E. (Eds.) (1997). *Handbook of treatment for eating disorders* (2nd ed.). New York: Guilford Press.

Garfinkel, P. E., Moldofsky, M. D., & Garner, D. M. (1980). The heterogeneity of anorexia nervosa. *Archives of General Psychiatry, 37*, 1036–1040.

Gleaves, D. H., & Eberenz, K. P. (1993). Eating disorders and additional psychopathology in women: The role of prior sexual abuse. *Journal of Child Sexual Abuse, 2*, 71–81.

Herzog, D. B., Keller, M. B., Lavori, P. W., Kenny, G. M., & Sacks, N. R. (1992). The prevalence of personality disorders in 210 women with eating disorders. *Journal of Clinical Psychiatry, 53*, 147–152.

Hsu, L. K. G. (1990). *Eating disorders*. New York: Guilford.

Jacobs, B. W., & Isaacs, S. (1986). Pre-pubertal anorexia nervosa: A retrospective controlled study. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 27*, 237–250.

Johnson, C., & Connors, M. E. (1987). *The etiology and treatment of bulimia nervosa: A biopsychosocial perspective*. New York: Basic Books.

Kolb, J. E., & Gunderson, J. G. (1980). Diagnosing borderline patients with a semi-structured interview. *Archives of General Psychiatry, 37*, 37–41.

Lacey, J. H. (1993). Self-damaging and addictive behaviour in bulimia nervosa. A catchment area study. *British Journal of Psychiatry, 163*, 190–194.

Levenkron, S. (1998). *Cutting: Understanding and overcoming self-mutilation.* New York: W. W. Norton.

Matsunaga, H., Kiriike, N., Iwasaki, Y., Miyata, A., Matsui, T., Hagata, T., Yamagami, S., & Kaye, W. H. (2000). Multi-impulsivity among bulimic patients in Japan. *International Journal of Eating Disorders, 27,* 348–352.

Miller, D. (1994). *Women who hurt themselves.* New York: Basic.

Mitchell, J. E., Boutacoff, L. I., Hatsukami, D., Pyle, R. L., & Eckert, E. (1986). Laxative abuse as a variant of bulimia. *Journal of Nervous and Mental Disease, 174,* 174–176.

Mitchell, J. E., Hatsukami, D., Pyle, R. L., Eckert, E. D., & Soll, E. (1987). Late onset bulimia. *Comprehensive Psychiatry, 28,* 323–328.

Mitchell, J.E., Pyle, R.L., Eckert, E.D., Hatsukami, D., & Soll, E. (1990). Bulimia nervosa in overweight individuals. *Journal of Nervous and Mental Disease, 178,* 324–327.

Nagata, T., Kawarada, Y., Kiriike, N., & Iketani, T. (2000). Multi-impulsivity of Japanese patients with eating disorders: Primary and secondary impulsivity. *Psychiatry Research, 94,* 239–250.

Newton, J. R., Freeman, C. P., & Munro, J. (1993). Impulsivity and dyscontrol in bulimia nervosa: Is impulsivity an independent phenomenon or a marker of severity? *Acta Psychiatrica Scandinavica, 87,* 389–394.

Rossotto, E. (1997). Bulimia nervosa with and without substance use disorders: A comparative study. *Dissertation Abstracts International: Section B, 58,* 4469.

Sansone, R. A., Fine, M. A., & Nunn, J. L. (1994). A comparison of borderline personality symptomatology and self-destructive behavior in women with eating, substance abuse, and both eating and substance abuse disorders. *Journal of Personality Disorders, 8,* 219–228.

Sansone, R. A., Wiederman, M. W., & Sansone, L. A. (1998). The Self-Harm Inventory (SHI): Development of a scale for identifying self-destructive behaviors and borderline personality disorder. *Journal of Clinical Psychology, 54,* 973–983.

Schmidt, N. B., & Telch, M. J. (1990). Prevalence of personality disorders among bulimics, nonbulimic binge eaters, and normal controls. *Journal of Psychopathology and Behavioral Assessment. 12,* 169–185.

Suzuki, K., Higuchi, S., Yamada, K., Komiya, H., & Takagi, S. (1994). Bulimia nervosa with and without alcoholism: A comparative study in Japan. *International Journal of Eating Disorders, 16,* 137–146.

van der Kolk, B. A., McFarlane, A. C., & Weisaeth, L. (Eds.). (1996). *Traumatic stress: The effects of overwhelming experience on mind, body, and society.* New York: Guilford.

Yates, W. R., Sieleni, B., & Bowers, W. A. (1989). Clinical correlates of personality disorder in bulimia nervosa. *International Journal of Eating Disorders, 8,* 473–477.

Walsh, B.W. & Rosen, P.M. (1988). *Self-mutilation: Theory, research & treatment.* New York: Guilford Press.

Welch, S. L., & Fairburn, C. G. (1996). Impulsivity or comorbidity in bulimia nervosa. A controlled study of deliberate self-harm and alcohol and drug misuse in a community sample. *British Journal of Psychiatry, 169,* 451–458.

Copyright © 2002 EBSCO Publishing

Copyright of Eating Disorders is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.