Self-Injurious Behavior in Women With Eating Disorders

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Objective: The authors assessed lifetime and 6-month occurrence and phenomenology of self-injurious behavior in patients with eating disorders.

Method: Women (N=376) in inpatient treatment for an eating disorder (anorexia: N=119, bulimia: N=137, eating disorder not otherwise specified: N=120) were assessed for self-injurious behavior and completed the Traumatic Life Events Questionnaire, the Dissociative Experience Scale, the Barratt Impulsiveness Scale, and the Yale-Brown Obsessive Compulsive Scale.

Results: The lifetime rate of self-injurious behavior occurrence was 34.6%, with the highest rates found in subjects with eating disorder not otherwise specified (35.8%) and bulimia (34.3%); the 6-month rate of self-injurious behavior occurrence was 21.3%. Multivariate comparisons were computed for the factors of self-injurious behavior and diagnostic subgroup: self-injuring patients reported a significantly higher number of traumatic events, showed significantly higher dissociation scores, and exhibited significantly more obsessive-compulsive thoughts and behaviors. Bulimic patients showed significantly higher impulsivity scores.

Conclusions: This study strongly supports the assumption that patients with eating disorders are at risk for self-injurious behavior and points to the necessity of a routine screening for self-injurious behavior as well as the development of a standardized questionnaire. Group comparisons point to the relevance of traumatic experiences and comorbid dissociative phenomenology.

Although there is a lack of comprehensive epidemiological data, clinical reports indicate that 4%-10% of psychiatric patients injure themselves deliberately (1, 2). Self-injurious behavior may occur as a symptom in various psychiatric diagnoses: studies point to higher rates in institutionalized patients with mental retardation (3) and patients with antisocial (4), dissociative (5), and borderline (6-9) personality disorder.

Patients with anorexia or bulimia nervosa have repeatedly been suggested to be at high risk for self-injurious behavior (10-14). A few studies have investigated the occurrence of eating disorders in self-injuring patients (15-19), yielding eating disorder rates ranging from 61% in the largest study (17) (N=240) to 100% (18).

However, the empirical basis for the assumption of patients with eating disorders being a high-risk population for self-injurious behavior is rather sparse. The few relevant studies differ substantially in size as well as in definition of eating disorders and self-injurious behavior. The inclusion of suicidal behavior has been especially controversial (17, 20-25). The literature suggests that self-injuring is quite distinct from suicidal behavior in intent, bodily harm, frequency, and methods (26). In addition, the presence of a personality disorder was only assessed in one of these studies (which assessed for borderline personality disorder [19]), thus possibly inflating the rate of self-injuring.

Apart from marked similarities in sex ratio and age at onset (20-28), common psychopathological features of eating disorders and self-injurious behavior have been observed. Both have been linked to traumatic experience (mainly sexual and physical abuse) and greater dissociation. Several studies have suggested an impact of child sexual abuse on later self-injuring (6, 28-32). An association between later trauma and self-injuring has also been shown (33). Dissociation is a frequent concomitant (1, 15, 16, 20, 21, 25). The vast literature on the impact of abuse in the development of eating disorders yields discrepant results regarding whether abuse constitutes a general or specific risk factor (34-37).

The other line of research regarding similar psychopathological features focuses on impulsivity and obsessive-compulsive behavior. Since Lacey and Evans (37) proposed the construct of a "multi-impulsive personality disorder," deficits in impulse control have been investigated in self-injuring patients (17, 19) as well as in patients with eating disorders (38-40). Several authors have pointed to the co-occurrence of self-injuring and obsessive-compulsive behavior (13, 19). Regarding the eating disorders, studies have found impulse-control deficits in patients with bulimia nervosa (40, 41), whereas obsessive-compulsive behavior has been related to anorexia nervosa (42, 43). Nevertheless, these two aspects can also coexist: Favaro and Santonastaso (44) hypothesized a distinction between impulsive and compulsive self-injurious behavior in patients with bulimia nervosa.

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The objectives of this study were twofold. First, we sought to assess lifetime and current occurrence of self-injurious behavior and its phenomenology in patients with eating disorders. Second, we investigated the importance of traumatic experiences, dissociation, impulsivity, and obsessive-compulsive behavior on several aspects of self-injurious behavior, such as severity and frequency of injury, in order to identify high-risk patients.

Method

This research design consisted of a cross-sectional study of 376 consecutive female inpatients. During the first week of treatment, patients were diagnosed according to DSM-IV criteria. Patients were only included when fulfilling the criteria for anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified. Patients with comorbid borderline personality disorder were excluded. After complete description of the study, written informed consent was obtained from each subject.

Patients were asked to fill in a sociodemographic questionnaire as well as the German version of the Eating Disorders Questionnaire (45) and the Eating Disorder Inventory—2 (46). Apart from the questionnaires on trauma and self-injurious behavior, only standardized measures also available in the United States were used. To our knowledge, no standardized questionnaire on self-injurious behavior has been published. After a thorough literature review, we devised an instrument in accordance with the Self-Harm Behavior Survey (unpublished 1986 instrument of A.R. Favazza) and the Questionnaire on Self-Harm (unpublished 1998 instrument of B. Wenning). Self-injurious behavior was defined as a self-inflicted direct injury of the body without conscious suicidal intent. In a trial phase, this questionnaire was handed out to patients with eating disorders and discussed with them after completion, which allowed us to modify various items. This procedure led to the Questionnaire on Self-Injurious Behavior, which assessed self-injurious behavior as comprehensively as possible (manner of self-injuring, frequency, duration, intensity, the body parts affected, and possible consequences of the injury) as well as specific connections with eating disorder symptoms. This instrument checks for the criteria of the repetitive self-harm syndrome (17) and assesses the onset, triggering situation, and typical situations during or following which patients injure themselves. Also, patients are asked to rate their feelings immediately before, during, and after injuring themselves and describe the behavior's perceived functions. Finally, the patients are asked whether they have ever sought psychological or medical help regarding their self-injurious behavior.

In order to measure impulsivity, obsessive-compulsive behavior, and dissociative symptoms, the German versions of the Barratt Impulsiveness Scale (47), Yale-Brown Obsessive Compulsive Scale (48), and Dissociative Experience Scale (49), respectively, were used. The German version of the Traumatic Life Events Questionnaire (unpublished 1996 instrument of E. S. Kubany; for development and primary validation, see reference 50) was used to assess traumatic experiences according to DSM-IV.

For the analysis of data we used the computer program SPSS for Windows 8.0. Multivariate analyses of variance (MANOVAs) were computed across the measures for two factors: self-injurious behavior and diagnosis. The anorectic group was divided into two subtypes according to subtype (restricting versus binge eating/purging). Since there were only four nonpurging bulimic patients, no further distinction was possible for the bulimia nervosa group. The number of subjects varied slightly because of missing data. Statistical significance was set at 0.05 unless statistical prerequisites, such as homogeneity of covariances across dependent variables (Box test) and homogeneity of error variance (Levene's test), were not met; for these cases, statistical significance was set at 0.01.

Results

Of the 376 patients, 119 patients fulfilled DSM-IV criteria for anorexia nervosa (restricting subtype: N=59, purging subtype: N=60), 137 met bulimia nervosa criteria (133 were of the purging type), and 120 were diagnosed with eating disorder not otherwise specified. The diagnostic groups were comparable in terms of age and duration of illness. The mean age of the group was 24.3 years (SD=7.1); the mean duration of the eating disorder was 8.5 years (SD=7.9). The mean body mass index for the entire group was 18.5 kg/m² (SD=4.0) (anorexia group: mean=14.8, SD=1.9; bulimia group: mean=21.4, SD=3.4; eating disorder not otherwise specified group: mean=19.1, SD=2.9). Most patients (48.7%, N=183) lived with a parent, 31.9% (N=120) lived without a partner, and 10.4% (N=39) were married. The patients were mainly Protestant (51.3%, N=193). Sexual abuse before the age of 13 was reported by 67 patients (17.8%); 78 patients (20.7%) reported sexual abuse after this age.

Occurrence and Phenomenology of Self-Injurious Behavior

Of the 376 patients, 34.6% (N=130) reported ever having injured themselves, and 21.3% (N=80) had exhibited self-injurious behavior within the preceding 6 months. Differences in diagnosis (higher lifetime rates of self-injurious behavior were seen in patients with eating disorder not otherwise specified [35.8%, N=43] and bulimia [34.3%, N=47]) and differences in diagnostic subgroups (patients with anorexia of the binge eating/purging type showed higher lifetime [41.7%, N=25] and current [30.0%, N=18] occurrence of self-injurious behavior) were not statistically significant.

Among the self-injuring patients, 74.6% (N=97) reported having injured themselves within the past 12 months, 38.5% (N=50) within the past 30 days. The onset of self-injurious behavior occurred after the onset of the eating disorder for 64 (49.2%) of the patients (bulimic group: 48.5% [N=23]; anorexic group: 47.5% [N=19]; eating disorder not otherwise specified group: 51.2% [N=22]). The onset of self-injurious behavior occurred before the onset of the eating disorder for 33 (25.4%) of the patients (bulimic group: 29.8% [N=14]; anorexic group: 25.0% [N=10]; eating disorder not otherwise specified group: 20.9% [N=9]). For the remaining patients, the onset of the eating disorder and self-injurious behavior coincided.

One-third of the self-injuring patients reported a frequency of at least several times per month or more often. Most patients injured themselves by means of cutting (46.2%, N=60), hitting (38.5%, N=50), or scratching (34.6%, N=43). Most often arms and hands were affected (91.5% [N=119] and 50.0% [N=65], respectively) as well as the face (46.9%, N=61) and legs (30.0%, N=39); fewer than 10% of the patients reported injuring their genitals. Half of the
self-injuring women rated the severity of their injuries as slight; nevertheless, a considerable amount reported that the injuries resulted in bleeding (76.2%, N=99) and scars (74.6%, N=97). After the act of self-injuring, more patients sought medical help (19.2%, N=25) than psychological help (9.2%, N=12).

Patients rated the following functions of self-injurious behavior as most important: to reduce anger, to punish themselves, to reduce tension, to feel bodily instead of emotional pain, and to end uncomfortable feelings. Ninety of the patients (69.2%) stated that they would feel better immediately after injuring themselves. Varying the time interval since the injury revealed its short-term effect: a couple of hours later only about one-third of the patients felt better, and one-third felt worse.

**Group Comparisons**

The MANOVAs revealed no interaction between self-injurious behavior and diagnosis on any of the measures. Self-injuring patients experienced a significantly higher number of traumatic events (F=22.87, df=1, 363, p<0.001) and showed significantly higher dissociation scores than noninjuring patients on two of the three scales (Imaginative experience: F=14.07, df=1, 350, p<0.001; depersonalization/derealization: F=13.51, df=1, 350, p<0.001). For the tendency to engage in imaginative experiences, bulimic patients showed significantly higher scores than anorectic patients of the restricting type (F=4.15, df=3, 350, p<0.006). In addition, self-injuring patients exhibited significantly more obsessive-compulsive thoughts and behaviors (F=17.39, df=2, 367, p<0.001) than did noninjuring patients. Regarding impulsivity, a significant difference could only be found for cognitive impulsivity (F=4.45, df=1, 368, p<0.04). Here, the diagnostic groups proved highly significant: bulimic patients showed significantly higher scores on all three scales. Of course, the factor diagnosis is also relevant on the eating disorder scales. Of more interest in this regard is the factor self-injuring, which proved significant for bulimia, ineffective, interpersonal distrust, and interoceptive awareness as well as asceticism, impulse regulation, and social insecurity.Except for interpersonal distrust and social insecurity, self-injuring patients showed significantly higher scores, pointing to a more severe eating disorder pathology than that seen in noninjuring patients.

**Discussion**

The results of this study support the assumption that patients with eating disorders are at risk for self-injurious behavior. The lifetime occurrence of more than 50% found in this patient group stands in line with previous studies, especially when taking into account that suicidal behavior was excluded from the definition of self-injurious behavior and that borderline personality disorder was also an exclusion criterion. Regarding specific diagnoses, this study does not unanimously confirm the potentially higher risk of self-injurious behavior in patients with bulimia nervosa. Although anorectic patients of the binge eating/purging type showed higher lifetime and current occurrence of self-injurious behavior, the difference was not statistically significant. The phenomenology of self-injurious behavior confirms the previous finding that patients with eating disorders mainly inflict superficial and moderately severe injury on themselves by means of cutting, hitting, and scratching. This study also strongly confirms the function of self-injuring as a means of "self-help" in states of bodily or emotional discomfort—even though it may only have a short-term effect.

Group comparisons emphasized the relevance of traumatic experiences and comorbid dissociative phenomenology in self-injuring patients—a result in line with the study of Romans et al. (51), who found a strong association between childhood sexual abuse experiences and self-injuring that was most marked in those subjected to more intrusive and more frequent abuse. It also confirms the study of Zlotnick et al. (31), who founded a significant correlation between self-injurious behavior and dissociation. Only cognitive impulsivity distinguished between injuring and noninjuring patients, whereas both obsessive-compulsive thoughts and activities were significantly higher in self-injuring patients.

A limitation of this study is the selected group of women in inpatient treatment, who may possibly show inflated rates of self-injurious behavior compared with women in outpatient treatment. Also, the patient composition did not allow us to compare subgroups of self-injuring patients related to the subtypes of eating disorder diagnoses. Future studies should control for diagnostic subtypes accordingly, which was not possible here because rates were assessed in a given population. This study strongly confirms the relevance of self-injurious behavior as a comorbid feature of eating disorders and points to the necessity of a routine screening for self-injurious behavior in patients with eating disorders as well as the need for the development of a standardized questionnaire.

**References**

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