European Eating Disorders Review
Eur. Eat. Disorders Rev. **15**, 430–438 (2007)

Symptom Severity and Treatment Course of Bulimic Patients With and Without a Borderline Personality Disorder

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There are contradictory results concerning the frequency of borderline personality disorder (BPD) in bulimic patients and its impact on eating pathology and treatment outcome. We evaluated 240 patients with bulimia nervosa using EDI-2, SIAB and SCL-90-R. Only a minority of patients had a BPD (13.8%). There were no differences in binging or purging behaviour between patients with and without BPD, but borderline patients had significantly more feelings of ineffectiveness and more disturbances in interoceptive awareness. Bulimic patients with BPD showed significantly more general psychopathology. Although, BPD patients started with higher levels of pathology, there were similar reductions of symptoms over the course of treatment in both groups. Psychotherapy in bulimic patients with a BPD has to focus not only on eating pathology but also on aspects that are caused by the severe personality disturbance. Copyright © 2007 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords: bulimia nervosa; comorbidity; borderline personality disorder; treatment course; symptom severity

INTRODUCTION

Clinicians and researchers agree that there are different subgroups of bulimic patients, ranging from only slightly disturbed individuals that recover with little help to individuals with severe personality disorders (Rosenvinge, Martinussen, & Ostensen, 2000). In the latter, eating pathology is only part of several symptoms including self-destructive behaviour, emotional instability, suicidal ideation and profound interpersonal and social problems.

The subgroup of bulimic patients with a borderline personality disorder (BPD) was repeatedly described as the most difficult subgroup to treat and the one with the worst prognosis. Although bulimia nervosa and BPD do share some common features like impulsive behaviours, self-destructive tendencies and difficulties in affect regulation, it is not clear if and how severe personality disorders and eating disorders are related with regard to aetiology, development of psychopathology and long-term prognosis (Bruce & Steiger, 2005).

Soon after the first descriptions of bulimia nervosa, the influence of personality traits on the

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Published online 28 August 2007 in Wiley InterScience (www.interscience.wiley.com) **DOI**: 10.1002/erv.824

course and severity of bulimic symptoms has been discussed. Lacey and Evans (1986) coined the term 'multi-impulsive personality disorder' and later Fichter, Quadflieg, & Rief (1994) suggested the introduction of 'multi-impulsive bulimia nervosa' as a distinct group.

Since the 90s this was followed by a tendency to link aspects of personality (impulsivity, compulsivity, novelty seeking or harm avoidance) to eating pathology (see for example Vervaet, van Heeringen, & Audenaert, 2004) and to evaluate them as possible moderators of the treatment course. Some studies showed that Cluster C personality disorders (avoidant, obsessive–compulsive, passive–aggressive, self-defeating) are more often linked to anorexia nervosa, whereas Cluster B personality disorders (antisocial, borderline, histrionic, narcissistic) are linked to bulimia nervosa (Braun, Sunday, & Halmi, 1994; Gartner, Marcus, Halmi, & Loranger, 1989; Herzog, Keller, Lavori, Kenny, & Sacks, 1992; Pope, Frankenburg, Hudson, Jonas, & Yurgelun-Todd, 1987; Wonderlich, Swift, Slotnick, & Goodman, 1990). In a meta-analytic review Rosenvinge et al. (2000) found no difference in proportions of Cluster C personality disorders between anorexic and bulimic patients but higher proportions of Cluster B and (BPDs) in bulimics (44%).

Battaglia, Przybeck, Bellodi, & Cloninger (1996) postulated that the four temperament dimensions of Cloninger (novelty seeking, harm avoidance, reward dependence, persistence) are associated with the clusters of personality disorders and can help to explain the patterns of comorbidity between axis-I and –II diagnoses. In terms of eating disorders, studies showed that high scores in 'harm avoidance' are related to anorexia nervosa as well as bulimia nervosa. Bulimia nervosa was additionally associated with high scores in 'novelty seeking' and 'impulsivity' (Tomotake & Ohmori, 2002; Diaz-Marsa, Carrasco, & Saiz, 2000).

Bulimia Nervosa and Borderline Personality Disorder: Prevalence Rates

The prevalence rate of BPD in samples of bulimic patients varies broadly across studies (from 1.9% (Pope et al., 1987) to 48% (Sunday, Levey, & Halmi, 1993)). In a comparably large sample of 137 patients, Milos, Spindler, & Buddeberg (2003) reported that 69% of the bulimic patients had a personality disorder and 29% a Cluster B personality disorder. In a study by Matsunaga, Kaye, McConaha, Plotnicov, Pollice, & Rao (2000) 63% of the patients fulfilled criteria of multi-impulsivity, whereas Nagata, Kawarada, Kiriike, & Iketani (2000) reported a rate of 18%. When comparing studies it becomes obvious that differences in prevalence rates depend on sample selection and the diagnostic procedures used.

For an excellent overview on difficulties in the assessment of personality in eating disorders see Vitousek and Stumpf (2005).

Comorbid Borderline Personality Disorder and Psychopathology

There are only few studies evaluating the relationship between a comorbid BPD and the severity and characteristics of eating- and general psychopathology in bulimic patients (Herzog, Stiewe, Sandholz, & Hartmann, 1995; Matsunaga, Kiriike, Nagata, & Yamagami, 1998; Steiger & Stotland, 1996; Steiger, Thibaudeau, Leung, Houle, & Ghadirian, 1994). Early authors postulate an aetiological relationship and assume that disturbed eating patterns depict fundamental disturbances in affect regulation and personality (Fairburn, Cooper, Kirk, & O'Connor, 1985; Lacey & Evans, 1986; Yates, Sieleni, Reich, & Brass, 1989).

Concerning eating pathology, higher purging-frequencies in eating disorder patients with a personality disorder were found (Matsunaga et al., 1998; Wonderlich, Fullerton, Swift, & Kelin, 1994) as well as more depressive, anxious and obsessive–compulsive features (Matsunaga et al., 2000). But whereas Matsunaga et al. (1998) also reported higher binging frequencies, Wonderlich et al. (1994) did not. Other studies found no relationship between a personality disorder and more severe eating pathology (Herzog et al., 1995; Johnson, Tobin, & Dennis, 1990; Steiger & Stotland, 1996; Steiger et al., 1994). In summary, results are quite contradictory. In contrast, a relationship between the severity of general psychopathology and comorbidity with a personality disorder in patients with eating disorders has been described more consistently (Herzog et al., 1995; Steiger & Stotland, 1996; Steiger et al., 1994; Wonderlich et al., 1994).

Comorbid Borderline Personality Disorder and Course of Treatment

Several studies refer to the course of eating pathology and personality as a moderating factor (Ames-Frankl et al., 1992; Fahy, Eisler, & Rusell, 1993; Herzog et al., 1992; Skodol, Oldham, Hyler, Kellman, Doidge, & Davies, 1993), but in most of them this is not the main aim of investigation. Only few studies specifically deal with the influence of

DOI: 10.1002/erv

borderline pathology on the course of bulimia nervosa. Fahy et al. (1993), Herzog et al. (1992) and Tomotake (Tomotake & Ohmori, 2002) found a worse course in bulimia when a personality disorder was present. BPD as a predictor of a poor prognosis or chronicity in bulimic patients was described by Herzog et al. (1992), Matsunaga et al. (1998), Johnson et al. (1990), Steiger et al. (1994), Wonderlich et al. (1994) and Skodol et al. (1993). Other studies found that 'impulsivity' was associated with a negative outcome (Sohlberg, Norring, & Holmgren, 1989; Fichter et al., 1994). Wonderlich et al. (1994) showed that initial symptom severity of patients with a personality disorder was higher. At the end of treatment this was only true for general psychopathology but not for eating pathology. Some authors describe 'an intriguing degree of independence' concerning the course of bulimic symptoms and general psychopathology or borderline traits over the course of treatment (Steiger & Stotland, 1996) or over the follow-up period (Quadflieg & Fichter, 2003).

In a review Bell (Bell, 2002) comes to the overall conclusion that a Cluster B personality disorder and borderline symptom severity can impair outcome in the treatment of bulimia nervosa.

Aims of the Study

One aim of the study was to assess the prevalence rate of BPD in a sample of bulimic patients that were referred to a specialized centre for eating disorders in Germany.

The second aim was to compare the severity and characteristics of eating pathology as well as of general psychopathology in bulimic patients with and without BPD.

An additional aim was to compare the treatment course (pre/post) of bulimic patients with and without a BPD in terms of the reduction of eating and general psychopathology.

MATERIAL AND METHODS

Subjects

We included bulimic patients that were seen at the Department of Psychosomatic Medicine and Psychotherapy in Freiburg/Germany between 1990 and 2003 for treatment and diagnostic purposes. Only first treatment episodes were included.

Treatment Programmes

There are specialized treatment programmes (outpatient, inpatient, day clinic) for eating disorders in Freiburg that are described elsewhere (Herzog & Sandholz, 1997; Zeeck, Sandholz, Hipp, & Schmidt, 2005b; Zeeck, Hartmann, Buchholz, & Herzog, 2005a). Day clinic and inpatient treatment comprises a multimodal approach with individual and group sessions, body and art therapy as well as an additional focus on family dynamics. The treatment concept in all settings is psychodynamic in orientation and integrates cognitive–behavioural and systemic components.

Instruments

Diagnoses were made according to DSM-III-R/DSM-IV and ICD 10 by trained raters. A BPD was diagnosed using structured interviews (DIB-R, SCID-II). At admission and discharge general and specific psychopathology was assessed by the Symptom-Check-List SCL-90-R (Derogatis, 1977), the Eating-Disorder-Inventory EDI-2 (Garner, 1991) and the expert-rating and self-evaluation form of the Structured Inventory for Anorexic and Bulimic Syndromes SIAB-S, SIAB-Ex (Fichter & Quadflieg, 2001). The instruments and interviews (conducted by trained raters) were administered as part of the clinic routine after patients had given informed consent.

Over the years there were some changes in instruments because of new versions or developments: DSM IV was published (1994) and SCID-II became available in German (Wittchen, Zaudig, & Fydrich, 1997). From 1990 to 1997 a borderline personality diagnosis was given using the Diagnostic Interview for Borderline Patients DIB-R (Gunderson, Kolb, & Austin, 1981) (Score > 7). Starting in 1997, the SCID-II was used as it allows the description of the whole spectrum of personality disorders.

Frances, Clarkin, Gilmore, Hurt, & Brown (1984) calculated sensitivity and specificity of the DIB using DSM-III as a criterion. They found a high correlation between both approaches. To our knowledge, there are no published data comparing DSM-IV (SCID-II) and DIB-R. Zanarini, Frankenburg, and Vujanovic (2002) showed good inter-rater and test–retest reliability of the DIB-R.

The SIAB self-evaluation-form (SIAB-S) has been available since 1997 (Fichter & Quadflieg, 1997). In this study it was only used if no data from an expert rating were available. The SIAB allows an analysis of six subscales, but as we were interested in a detailed description of eating pathology, we computed an analysis on item level.

DOI: 10.1002/erv

Analysis

The data were analyzed using SPSS software. Group differences were tested by t-tests. For differences in outcome over time ANOVA for repeated measurement and cross-tabluations were used. Because of the exploratory nature of the investigation we report on uncorrected levels of significance (bonferroni-corrected levels of significance are provided with the tables).

RESULTS

Sample

240 patients, 231 women and 9 men were included in the study. For a description of the sample see Table 1. The mean age of the total sample was 26 (SD: 6.7) years.

Seventy patients (29%) were treated in an outpatient setting, 44 (18%) as inpatients and 40 (17%) in the day clinic of the department. Eighty six patients (36%) were sent to private psychotherapists for further treatment and were only seen for diagnostic purposes. The inpatient treatment lasted 87.6 days (SD: 17.8) and the day clinic treatment 92.6 days (SD: 17.5). The patients who were treated as outpatients received about 23 sessions. From 131 out of 154 patients treated in our department (85.1%), data from pre (admission) and post (end of therapy) measurements were available.

Comorbidity with Borderline Personality Disorder

Thirty three out of 240 patients were diagnosed as having a BPD (13.8%). In 193 of the cases, the diagnosis was made by the DIB (22/193; 11.4%) and

Table 1. Sample description

	Bulimia n. without BPD	Bulimia n. with BPD	*p*
	N = 207 *N*(%)/M(SD)	*N* = 33 *N*(%)/M(SD)	
Age	26.3 (6.7)	26.1 (6.7)	n.s.
Age at onset	17.2 (4.5)	16.9 (3.1)	n.s.
Duration of illness	9.0 (7.5)	9.4 (8.6)	n.s.
Previous anorexia nervosa	118 (57.0%)	17 (51.5%)	n.s.
Treatment setting			
Outpatient	65 (31.4%)	5 (15.2%)	
Day clinic	29 (14.0%)	11 (33.3%)	
Inpatient	34 (16.4%)	10 (30.3%)	
Diagnostic only	79 (38.2%)	7 (21.2%)	
Gender			n.s.
♀	200 (96.6%)	31 (93.9%)	
♂	7 (3.4%)	2 (6.1%)	
Previous anorexia nervosa	118 (57.0%)	17 (51.5%)	n.s.
Previous treatment			n.s.
Outpatient	60 (29.0%)	15 (45.5%)	
Inpatient	21 (10.1%)	10 (30.3%)	
Outpatient or inpatient	65 (31.4%)	16 (48.5%)	
Partnership			n.s.
Yes	84 (40.6%)	19 (57.6%)	
No	96 (46.4%)	11 (33.3%)	
No data	27 (13.0%)	3 (9.1%)	
Living situation			n.s.
Alone	64 (30.9%)	11 (33.3%)	
With parents	44 (21.3%)	5 (15.2%)	
With partner	41 (19.8%)	9 (27.2%)	
Other	30 (14.5%)	5 (15.2%)	
No data	28 (13.5%)	3 (9.1%)	
Education			n.s.
Primary school	16 (7.7%)	6 (18.2%)	
Secondary school	57 (27.5%)	12 (36.4%)	
High school	91 (44.0%)	8 (24.2%)	
Other	43 (20.8%)	7 (21.2%)	

DOI: 10.1002/erv

in 47 cases the SCID-II (11/47; 23.4%) was used. In the more intense treatment settings (inpatient, day clinic) a higher percentage of patients with a BPD were found (25%; see Table 1) compared to the outpatients.

Concerning socio-demographic variables no statistically significant difference was identified.

Bulimic Patients With and Without BPD: Eating Pathology

Comparing both groups on important aspects of the previous course of the eating disorder (age at onset, duration of illness, previous anorexia nervosa) there was no difference (Table 1). Focussing on details of current eating behaviour (time point of assessment in the outpatient clinic or admission), there were also no differences between groups in the frequencies of binging and purging behaviour, selection of foods, weight, or 'sense of lack of control when eating' (Table 2).

However, there were some differences in cognitive and affect-related aspects of eating pathology: the borderline group described a higher 'compulsion to eat' (SIAB) as well as a higher 'drive for thinness' (EDI-2) and a higher 'body dissatisfaction' (EDI-2). The most striking differences concern more profound feelings of 'ineffectiveness' (EDI-2) and more disturbances in 'interoceptive awareness' (EDI-2) (see Table 2).

Bulimic Patients With and Without BPD: General Psychopathology

In nearly all scales and items evaluating general aspects of psychopathology, the borderline group was more severely disturbed (see Table 3). All scales

Table 2. Eating pathology: bulimic patients with and without BPD

Instrument	Item/Scale	Bulimia n. without BPD	Bulimia n. with BPD	*T*	df	*p*
		N = 207 *N*(%)/M(SD)	*N* = 33 *N*(%)/M(SD)			
SIAB	Binge eating episodes	2.61 (1.3)	2.64 (1.4)			n.s
	Self-induced vomiting	2.08 (1.6)	2.48 (1.6)			n.s.
	Weight (BMI)					
	At admission	22.2 (4.5)	22.0 (6.1)			n.s.
	Lowest ever	18.2 (2.7)	17.3 (2.9)			n.s.
	Highest ever	25.1 (4.8)	24.8 (6.2)			n.s.
	Laxative abuse	0.57 (1.2)	0.70 (1.2)			n.s.
	Abuse of appetite Suppressants	0.11 (0.5)	0.24 (0.8)			n.s.
	Fear of gaining weight or getting fat	2.67 (1.2)	2.97 (1.2)			n.s.
	Avoidance of fattening foods and selective eating	1.93 (1.3)	2.21 (1.5)			n.s.
	Sense of lack of control with regard to eating	2.70 (1.4)	2.91 (1.4)			n.s.
	Compulsion to eat	0.67 (1.1)	1.18 (1.4)	−2.02	38.3‡	0.05*
	Preoccupation with food and eating	2.68 (1.2)	3.24 (1.1)			n.s.
	Preoccupation with body slimness, shape and body weight	2.97 (2.3)	3.00 (1.1)			n.s.
	Dependence of self-evaluation and self-esteem on body shape and weight	3.07 (1.1)	3.18 (1.0)			n.s.
	History of anorexia nervosa	118 (57.0%)	17 (51.5%)			n.s.
	Global assessment of symptoms	2.77 (0.9)	3.16 (0.9)	−2.30	234	0.02*
EDI -2†	Drive for thinness	11.52 (4.9)	14.54 (4.5)	−2.80	150	0.006**
	Bulimia	9.07 (4.5)	11.04 (4.8)			n.s.
	Body dissatisfaction	16.42 (8.1)	20.32 (6.2)	−2.72	41.6‡	0.009**
	Ineffectiveness	10.20 (6.5)	16.17 (7.2)	−4.08	150	0.000***
	Perfectionism	6.32 (4.1)	7.50 (4.7)			n.s.
	Interpersonal distrust	6.28 (3.7)	7.45 (4.5)			n.s.
	Interoceptive awareness	10.56 (6.6)	16.20 (6.7)	−3.85	150	0.000***
	Maturity fears	4.67 (4.2)	6.00 (4.3)			n.s.

Note: $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.
† Available: 128/207 BN; 24/33 BN+BPD.
‡ Varying df due to unequal variances (note: a bonferroni-correction of significance level for 22 comparisons reduces $p < 0.05$ to $p < 0.0023$).

DOI: 10.1002/erv

Table 3. General psychopathology: bulimic patients with and without BPD

Instrument	Item	Bulimia n. without BPD	Bulimia n. with BPD	*T*	df	*p*
		N = 207 M(SD)	*N* = 33 M(SD)			
SIAB	Feelings of insufficiency	2.06 (1.4)	2.85 (1.1)	−3.17	237	0.02*
	Reduced self-confidence in performance	1.88 (1.4)	2.79 (1.2)	−3.64	237	0.000***
	Auto-aggressive behaviour	0.38 (0.8)	1.00 (1.1)	−3.05	237	0.000***
	Alcohol abuse†	0.61 (0.6)	0.85 (0.7)	−2.04	237	0.04*
	Sexual anxieties	1.21 (1.6)	2.06 (1.9)	−2.79	236	0.000***
	Social withdrawal and avoidance of contacts	1.58 (1.2)	2.21 (1.27)	−2.72	236	0.000***
	Partner-relationship (stability)	1.96 (1.8)	1.85 (2.3)			n.s.
	Denial of illness	0.68 (1.0)	0.97 (1.3)			n.s.
SCL-90	Somatization	0.89 (0.67)	1.40 (0.74)	−3.50	154	0.001***
	Obsessive-compulsive	1.42 (0.78)	1.85 (0.84)	−2.54	154	0.012**
	Interpersonal sensitivity	1.64 (0.93)	2.45 (0.96)	−4.02	154	0.000***
	Depression	1.79 (0.86)	2.29 (0.84)	−2.72	154	0.007**
	Anxiety	0.99 (0.72)	1.80 (0.82)	−5.06	154	0.000***
	Anger-hostility	1.07 (0.72)	1.66 (1.02)	−2.82	154	0.008**
	Phobic anxiety	0.64 (0.66)	1.28 (1.01)	−3.11	154	0.004**
	Paranoid ideation	1.08 (0.81)	1.72 (0.93)	−3.57	154	0.000***
	Gsi (global severity index)	1.13 (0.57)	1.73 (0.64)	−4.82	154	0.000***

Note: $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ (a Bonferroni-correction of significance level for 17 comparisons reduces $p < 0.05$ to $p < 0.003$).
† Patients with severe substance dependency (if known) are sent to another department.

of the SCL-90-R revealed highly significant differences, including the Global Severity Index (GSI). Some more behaviour-related aspects measured with the SIAB (auto-aggressive behaviour, alcohol abuse, social withdrawal) also showed more disturbances in the borderline group.

There were no differences in denial of illness and patient's subjective ratings of the stability of their partnership.

Bulimic Patients With and Without BPD: Treatment Course

Complete data sets pre/post were available for 67.5% of the patients for the EDI-2 and for 98.7% of the patients for the SCL-90-R. The changes (effects) over time (beginning of therapy to end of therapy) on the EDI-2 (eating pathology) and the SCL-90-R (general psychopathology) were highly significant for all scales ($p < 0.000$). In comparison, there was only one trend in changes over time *between* groups (BN without BPD vs. BN with BPD): in the reduction of anxiety ($p < 0.04$; see Table 4).

DISCUSSION

The study was conducted at the university clinic of a medium sized town in southern Germany. The department is specialized in the treatment of eating disorders. Patients seen at the outpatient clinic are often referred when psychotherapists in private practice or general practitioners seek specialist advice. This is among other aspects reflected by the long mean duration of illness (9 years).

The overall rate of bulimic patients with an additional diagnosis of BPD was 14%. The finding confirms results of an earlier study of our group (Herzog et al., 1995) where we found an overall rate of 10% BPDs in anorexic as well as bulimic patients. The result is comparatively low but close to prevalence rates that were described by Matsunaga et al. (1998; 19%) or Herzog et al. (1992; 8%). In the sub-sample diagnosed with the SCID-II were more patients diagnosed as having a BPD (23.4% vs. 11.4% in the group diagnosed with the DIB-R) underlining the assumption of Zanarini et al. (2002) that the DIB-R probably describes a more homogeneous and severe subset of borderline patients.

In agreement with the study of Milos et al. (2003) we had the highest rates of patients with a BPD in the more intense treatment settings: we found about one-fourth in the subgroup of patients treated as inpatients or day clinic patients, only 7% in the outpatient sample and about 2% in the subgroup that was sent to private psychotherapists. We can probably expect even less in a group that never seeks treatment. Overall, we assume that only a

DOI: 10.1002/erv

Table 4. Changes during treatment course: bulimic patients with and without BPD

Instrument	Scale	Bulimia without BPD		Bulimia with BPD		Time ± BD		
		$N = 105/207$ N(%)/M(SD)		$N = 26/33$ N(%)/M(SD)				
		Pre	Post	Pre	Post	F	df	p
EDI	Drive for thinness	11.4 (4.7)	6.7 (4.9)	14.4 (3.7)	11.3 (5.8)			n.s.
	Bulimia	9.1 (4.5)	3.9 (1.0)	10.3 (4.8)	6.7 (6.2)			n.s.
	Body dissatisfaction	16.8 (7.8)	13.6 (8.7)	20.6 (5.6)	17.8 (9.4)			n.s.
	Ineffectiveness	9.8 (6.0)	6.4 (5.8)	14.9 (7.1)	10.9 (8.5)			n.s.
	Perfectionism	6.1 (3.9)	5.5 (3.5)	8.1 (4.9)	7.3 (4.9)			n.s.
	Interpersonal distrust	5.9 (3.4)	4.7 (3.4)	7.6 (4.3)	5.9 (4.2)			n.s.
	Interoceptive awareness	9.8 (6.4)	6.4 (6.0)	14.8 (6.5)	10.1 (8.3)			n.s.
	Maturity fears	4.4 (3.6)	3.4 (3.2)	5.2 (3.3)	7.0 (6.6)			n.s.
SCL-90	Somatization	0.79	0.51	1.36	1.01			n.s.
	Obsessive–compulsive	1.36	0.85	1.78	1.33			n.s.
	Interpersonal sensitivity	1.64	1.12	2.37	1.69			n.s.
	Depression	1.74	1.09	2.18	1.60			n.s.
	Anxiety	0.89	0.59	1.76	1.12	4.4	103	0.04*
	Anger-hostility	0.99	0.66	1.77	1.14			n.s.
	Phobic anxiety	0.55	0.38	1.06	0.73			n.s.
	Paranoid ideation	1.03	0.70	1.66	1.17			n.s.
	Gsi	1.07	0.70	1.68	1.22			n.s.

* A Bonferroni-correction of significance level for 17 comparisons reduces $p < 0.05$ to $p < 0.003$.

minority of bulimic patients suffer from a BPD. Nevertheless, this group plays an important role in clinics that offer more intense and specialized treatments.

There were no differences between bulimic patients with and without a BPD concerning developmental aspects of the eating disorder: age at onset, amount of patients starting eating pathology with an episode of anorexia nervosa, weight (current, lowest and highest weight ever) and duration of illness at the time point of presentation.

In terms of eating pathology, there were no differences in eating behaviour (frequency of binging and purging behaviour, use of laxatives or appetite suppressants, selection of foods) or in the intensity of thoughts on eating, weight or body. This is in line with findings of Steiger and Stotland (1996) who postulated that axis-II comorbidity is of limited relevance to the severity of bulimic symptoms. Of those SIAB-items describing more eating related pathology, only one, 'compulsion to eat', showed higher values in the borderline group. This finding can be related to higher levels of impulsivity in borderline patients but does not seem to have a relevant impact on the concrete eating behaviour (severity and frequency of binging). On the EDI-2 scales borderline patients showed a stronger drive for thinness, possibly as a reaction to the strong urge to eat (wish for control) and a higher body dissatisfaction. But again, the stronger drive for thinness is not reflected by behaviour that would cause a lower weight.

Two other EDI-2 scales showed significant differences between groups: BPD patients had stronger feelings of ineffectiveness and more problems with interoceptive awareness. These aspects are related to eating pathology but may also be explained by characteristics of borderline pathology and experiences with physical and sexual abuse which most of those patients report. It is a limitation of the study that we have no data on traumatization and sexual abuse that could be tested for associations with scales measuring interoceptive awareness or body dissatisfaction (for an overview concerning links between sexual abuse, borderline features and bulimia see Everill & Waller, 1995).

Qualitative data will be necessary to more clearly examine different functions and meanings that bulimic symptoms and weight regulation have in patients with or without a personality disturbance.

In contrast to eating pathology, we found marked and highly significant differences in general psychopathology between groups (SCL-90-R and EDI-2). These differences comprise behavioural aspects (alcohol abuse, auto-aggressive behaviour, social withdrawal) as well as cognitive and emotional aspects (helplessness, sexual fears, depression, anxiety, anger–hostility) and psychopathological features like

DOI: 10.1002/erv

obsessive–compulsiveness and somatization. One finding was in contrast to the literature and clinical experience: there were no differences in interpersonal distrust (EDI-2, factor 6). Here we had expected higher scores in the borderline group, which typically exhibits profound difficulties establishing stable relationships. The finding might be explained by interpersonal difficulties in the whole group of bulimics. This is partly supported by the finding that patients in both groups were in a relationship in only half of the cases and both report problems in its stability.

There were no differences between groups in the reduction of eating and general psychopathology over the course of treatment except for the reduction of anxiety, which was slightly higher in the group of borderline patients but this should not be over interpreted. It has to be considered that the BPD-group started with higher levels of pathology.

Probably due to the more severe overall psychopathology, clinicians rated the borderline group as more severely disturbed and more in need of an intense therapy (SIAB item 84: 'global severity of symptoms'), reflecting the situation that bulimics with a BPD could more often be found in day clinic and inpatient settings (see above).

In summary, we found that only a minority of bulimic patients had a BPD. This subgroup showed a similar eating pathology, but more severe general psychopathology. Over the course of treatment, borderline patients started with higher levels of pathology but reduced it to a similar extent by the end of treatment.

Bulimic patients with a BPD more often will be in need of an intense treatment setting not because of bulimia nervosa but because of the more severe general psychopathology. Therefore, treatment should not only focus on eating pathology but additionally on interpersonal and social problems, self-destructive behaviour, self and body image and on impulse and affect regulation.

We have to take into account that the diagnosis of a personality disorder might be wrongly given in the acute stage of an eating disorder and that borderline features may remit with successful interventions (Vitousek & Stumpf, 2005). This leaves us to tailor interventions to the need of individual patients and to identify state- and trait-related aspects of personality disturbance during the ongoing psychotherapeutic process.

There are limits to the study in a lacking of generalizability since our data are related to the special context in Freiburg/Germany. Additionally, there are no follow-up data on the treatment outcome. Concerning pre/post data, only 67.5% of the EDI-2 was available. Furthermore, there were changes to new versions of instruments over time.

REFERENCES

Ames-Frankl, J., Devlin, M., Walsh, B., Strasser, T., Sadik, C., Oldham, J., et al. (1992). Personality disorder diagnosis in patients with bulimia nervosa: Clinical correlates and changes with treatment. *Journal of Clinical Psychiatry*, *53*, 90–96.

Battaglia, M., Przybeck, T., Bellodi, L., & Cloninger, C. (1996). Temperament dimensions explain the comorbidity of psychiatric disorders. *Comprehensive Psychiatry*, *37*, 292–298.

Bell, L. (2002). Does concurrent psychopathology at presentation influence response to treatment for bulimia nervosa? *Eating and Weight Disorders*, *7*, 168–181.

Braun, D. L., Sunday, S. R., & Halmi, K. A. (1994). Psychiatric comorbidity in patients with eating disorders. *Psychological Medicine*, *24*, 859–867.

Bruce, K., & Steiger, H. (2005). Treatment implications of axis-II comorbidity in eating disorders. *Eating Disorders*, *13*, 93–108.

Derogatis, L. R. (1977). *SCL-90-R, administration, scoring & procedures manual-I* for the (Revised version). Baltimore: Johns Hopkins University School of Medicine.

Diaz-Marsa, M., Carrasco, J., & Saiz, J. (2000). A study of temperament and personality in anorexia and bulimia nervosa. *Journal of Personality Disorders*, *14*, 352–359.

Everill, J., & Waller, G. (1995). Reported sexual abuse and eating psychopathology: A review of the evidence for a causal link. *International Journal of Eating Disorders*, *8*, 1–11.

Fahy, T., Eisler, I., & Rusell, G. (1993). Personality and treatment response in bulimia nervosa. *British Journal of Psychiatry*, *162*, 765–770.

Fairburn, C. G., Cooper, P. J., Kirk, J., & O'Connor, M. (1985). The significance of the neurotic symptoms of bulimia nervosa. *Journal of Psychiatric Research*, *19*, 135–140.

Fichter, M., & Quadflieg, N. (1997). *Strukturiertes Inventar für Anorektische und Bulimische Essstörungen (SIAB)*. Göttingen Bern Toronto Seattle: Hogrefe Verlag für Psychologie.

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

Fichter, M., & Quadflieg, N. (2001). The structured interview for anorexic and bulimic disorders for DSM-IV and ICD-10 (SIAB-EX): Reliability and validity. *European Psychiatry*, *16*, 38–48.

Frances, A., Clarkin, J., Gilmore, M., Hurt, S., & Brown, R. (1984). Reliability of criteria for borderline personality disorder: A comparison of DSM-III and the diagnostic interview for borderline patients. *American Journal of Psychiatry*, *141*, 1083.

Garner, D. M. (1991). *Eating Disorder Inventory-2. Professional Manual*. Odessa, Florida, U.S.A: Psychological Assessment Resources.

DOI: 10.1002/erv

Gartner, A., Marcus, R., Halmi, K., & Loranger, A. (1989). DSM-III-R personality disorders in patients with eating disorders. *American Journal of Psychiatry*, *146*, 1585–1591.

Gunderson, J., Kolb, J., & Austin, V. (1981). The diagnostic interview for borderline patients. *American Journal of Psychiatry*, *138*, 896–903.

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

Herzog, T., & Sandholz, A. (1997). Störungsspezifische konflikt- und symptomzentrierte Kurzpsychotherapie der Bulimia Nervosa. *Psychotherapeut*, *42*, 106–115.

Herzog, T., Stiewe, M., Sandholz, A., & Hartmann, A. (1995). Borderline-Syndrom und Essstörungen - eine Interview-Studie an 172 konsekutiven InanspruchnahmepatientInnen einer Spezialambulanz für Eßstörungen. *Psychotherapie medizinische Psychologie*, *45*, 97–108.

Johnson, C., Tobin, D., & Dennis, A. (1990). Differences in treatment outcome between borderline and non-borderline bulimics at one-year follow-up. *International Journal of Eating Disorders*, *9*, 617–627.

Lacey, J., & Evans, C. (1986). The impulsivist: A multi-impulsive personality disorder. *British Journal of Addiction*, *81*, 641–649.

Matsunaga, H., Kaye, W., McConaha, C., Plotnicov, K., Pollice, C., & Rao, R. (2000). Personality disorders among subjects recovered from eating disorders. *International Journal of Eating Disorders*, *27*, 353–357.

Matsunaga, H., Kiriike, N., Nagata, T., & Yamagami, S. (1998). Personality disorders in patients with eating disorders in Japan. *International Journal of Eating Disorders*, *23*, 399–408.

Milos, G., Spindler, A., & Buddeberg, C. (2003). Axis I and II comorbidity and treatment experiences in eating disorder subjects. *Psychotherapy and Psychosomatics*, *72*, 276–285.

Nagata, T., Kawarada, Y., Kiriike, N., & Iketani, T. (2000). Multi-impulsivity of Japanese patients with eating disorders: Primary and secondary impulsivity. *Psychiatry Research*, *17*, 239–250.

Pope, H., Frankenburg, F., Hudson, J., Jonas, J., & Yurgelun-Todd, D. (1987). Is bulimia associated with borderline personality disorder? A controlled study. *Journal of Clinical Psychiatry*, *48*, 181–184.

Quadflieg, N., & Fichter, M. (2003). The course and outcome of bulimia nervosa. *European Child & Adolescent Psychiatry*, *12*, 99–109.

Rosenvinge, J., Martinussen, M., & Ostensen, E. (2000). The comorbidity of eating disorders and personality disorders: A meta-analytic review of studies published between 1983 and 1998. *Eating and Weight Disorders*, *5*, 52–61.

Skodol, A. E., Oldham, J. M., Hyler, S. E., Kellman, H. D., Doidge, N., & Davies, M. (1993). Comorbidity of DSM-III-R eating disorders and personality disorders. *International Journal of Eating Disorders*, *14*, 403–416.

Sohlberg, S., Norring, E., & Holmgren, S. (1989). Impulsivity and long-term prognosis of psychiatric patients with anorexianervosa/bulimia nervosa. *Journal of Nervous and Mental Disease*, *177*, 249–258.

Steiger, H., & Stotland, S. (1996). Prospective study of outcome in bulimics as a function of axis-II comorbidity: Long-term responses on eating and psychiatric symptoms. *International Journal of Eating Disorders*, *20*, 149–161.

Steiger, H., Thibaudeau, J., Leung, F., Houle, L., & Ghadirian, A. (1994). Eating and psychiatric symptoms as a function of axis II comorbidity in bulimic patients. *Psychosomatics*, *35*, 41–49.

Sunday, S., Levey, C., Halmi, K. (1993). Effects of depression and borderline personality traits on psychological state and eating disorder symptomatology. *Comprehensive Psychiatry*, *34*, 70–74.

Tomotake, M., & Ohmori, T. (2002). Personality profiles in patients with eating disorders. *Journal of Medical Investigation*, *49*, 87–96.

Vervaet, M., van Heeringen, C., & Audenaert, K. (2004). Personality-related characteristics in restricting versus binging and purging eating disordered patients. *Comprehensive Psychiatry*, *45*, 37–43.

Vitousek, K., & Stumpf, R. (2005). Difficulties in the assessment of personality traits and disorders in eating-disordered individuals. *Eating Disorders*, *13*, 37–60.

Wittchen, H.-U., Zaudig, M., & Fydrich, T. (1997). *SKID Strukturiertes Klinisches Interview für DSM-IV (Achse I + II)*. Göttingen Bern Toronto Seattle: Hogrefe-Verlag.

Wonderlich, S., Fullerton, D., Swift, W., & Kelin, M. (1994). Five-year outcome from eating disorders: Relevance of personality disorders. *International Journal of Eating Disorders*, *15*, 233–243.

Wonderlich, S., Swift, W., Slotnick, H., & Goodman, S. (1990). DSM-III-R personality disorders in eating-disorder subtypes. *International Journal for Eating Disorders*, *9*, 607–616.

Yates, W., Sieleni, B., Reich, J., & Brass, C. (1989). Comorbidity of bulimia nervosa and personality disorder. *The Journal of Clinical Psychiatry*, *50*, 57–59.

Zanarini, M., Frankenburg, F., & Vujanovic, A. (2002). Inter-rater and test–retest reliability of the revised diagnostic interview for borderlines. *Journal of Personality Disorders*, *16*, 270–276.

Zeeck, A., Hartmann, A., Buchholz, C., & Herzog, T. (2005a). Drop out from inpatient treatment of anorexia nervosa. *Acta Psychiatrica Scandinavica*, *111*, 29–37.

Zeeck, A., Sandholz, A., Hipp, W., & Schmidt, A. (2005b). Stationäre und teilstationäre Bulimietherapie - das Freiburger Konzept. *Psychotherapeut*, *50*, 43–51.

DOI: 10.1002/erv