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Borderline patients have difficulties describing feelings; bipolar II patients describe difficult feelings. An alexithymia study

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Objective: Apparent similarities between borderline personality disorder (BPD) and bipolar II disorder (BIP-II) contribute to clinical difficulties in distinguishing between the disorders. Here, we aimed to explore how subjective Difficulties with the Identification and Description of Feelings (DIDF), a major constituent of the alexithymia construct and assessed as a part of the Toronto Alexithymia Scale (TAS), are related to relationship problems and health complaints in these groups.
Methods: Twenty-two patients with BPD; 22 patients with BIP-II; and 23 healthy controls (HC) completed TAS. Health complaints, including symptoms associated with mood swings, were assessed with the Giessener Subjective Complaints List (Giessener Beschwerdebogen—GBB), and relationship problems with the Health of the Nation Outcome scale, Relationship item (HoNOSR). Bivariate correlations were run.
Results: Both patient groups had high DIDF and GBB scores. In BPD only, there was a significant positive correlation between DIDF and HoNOSR. In BIP-II only, there was a significant positive correlation between DIDF and GBB total score. In BIP-II, DIDF correlated highly with those GBB subscales assessing symptoms typically occurring during bipolar mood swings (cardiovascular and gastrointestinal symptoms, exhaustion).
Conclusion: Our results suggest that in BPD, high DIDF scores represent genuine problems with identifying and describing emotions which are expected to correlate with relationship problems. In BIP-II, high DIDF scores could potentially represent difficulties with understanding the unpredictable symptoms of bipolar mood swings. The findings suggest that difficulties with identifying and describing feelings in patients should be carefully explored to increase the validity of the diagnostic evaluation.

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Key words: differential diagnosis; borderline personality disorder; bipolar disorder; alexithymia

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Significant outcomes

- Borderline and bipolar II patients report subjective difficulties with identifying and describing feelings to a similar degree.
- The findings in borderline patients suggest that these patients have genuine difficulties with identifying/describing feelings.
- The findings in the bipolar II group suggest that these patients may not have genuine difficulties with identifying/describing feelings. Rather, they may subjectively perceive difficulties with identifying/describing feelings due to the unpredictable nature of bipolar symptoms, which often occur without any identifiable psychosocial cause.

Limitations

- Relatively small sample size.
- Skewed gender balance with few male participants.
- Examination of relationship problems was based on a single item assessment only.

Introduction

The distinction between borderline personality disorder (BPD) and bipolar disorder may represent a challenge in clinical practice due to these disorders' apparently similar symptom presentation. Correct diagnostic classification is highly important, as there are major differences between BPD and bipolar disorder regarding optimal treatment. The manias of bipolar I disorder are usually easily recognizable and qualitatively distinct from BPD phenomenology. However, the alterations—sometimes very rapid—between depressive and hypomanic episodes in bipolar II disorder (BIP-II) may be difficult to separate from the mood instability in BPD. Thus, research has mostly focused on the relationship between BPD and BIP-II. For an overview of the current knowledge base, see for example the most recent review from an Australian group that has been prolific in this research field (1). The present study aims to further explore the relationship and the delineation between BPD and BIP-II.

BPD and BIP-II are, according to current classification, distinct disorders with separate complexes of symptoms and signs representing their respective core psychopathologies. Importantly, central features of each disorder are not shared with the other. BPD is characterized by instability of interpersonal relationships; instability of self-image; instability of affects; and marked impulsivity (2). A large body of research has shown that instability of relationships and self-image, as well as an altered ability to *understand* one self and others (i.e., mentalization difficulties) are highly interrelated and constitute essential features of BPD (3–6). Instability of affects and impulsivity are mainly manifested in interpersonal contexts (7) and may even mediate the effect of mentalization difficulties on interpersonal functioning (8). They may also approach features of BIP-II, albeit with distinct differences (9–11). In this comparison with BIP-II, we will focus on disturbances in Self-image and Interpersonal relationships as absolute essential and defining features of BPD and use the term *Self-other-difficulties* to describe these disturbances.

The corresponding BIP-II core symptom complex consists of mood fluctuations that frequently occur spontaneously, that is, without psychosocial triggers. Such fluctuations are considered a hallmark of bipolar disorders (12). In BIP-II, depressive episodes and symptoms, usually accompanied by anxiety and somatic complaints, constitute far more of patients' time than hypomanic episodes (2, 12–14). Psychosocial factors may influence the fluctuations (15), but bipolar disorders have strong genetic and biological underpinnings and non-psychological factors such as alterations in clock genes and seasonal changes in day/night ratio are important triggers (16, 17). We will use the term *Biologically influenced symptom fluctuations* to describe these phenomena in the present study.

Importantly, affective symptoms in BPD are mostly reactive to interpersonal stress (15) and not considered *Biologically influenced symptom fluctuations*. Regarding *Self-other-difficulties* in BIP-II, interpersonal problems are often understood as epiphenomena to mood cycling and living with bipolar disorder (18). Impaired social cognition, which may contribute to *Self-other-difficulties*, has been shown in some studies of bipolar disorder, and a recent meta-analysis showed impaired Theory of Mind, which is one facet of social cognition,

in euthymic BIP-II (19). However, the number of studies including BIP-II is still very low, and it is not established to which degree social cognition, including real-world functioning, is affected, and whether any impairment is related to the general cognitive impairment which has been more definitely associated with the disorder (20–23). However, regardless of these unanswered questions, *Self-other-difficulties* are not included in the diagnostic criteria for BIP-II and are not considered to be *core* phenomena of BIP-II.

In spite of major differences, the distinction between BPD and BIP-II sometimes appear blurred in clinical practice. A similar time course in both disorders may contribute in this respect. Although defined as an episodic disorder, BIP-II patients often spend large parts of their time in various degrees of clinical and subclinical depressive phases (14), and their condition may thus approach a permanent state of fluctuating symptoms, similar to the continuous nature of BPD. Subthreshold BIP-II, for example patients with hypomanias of shorter duration than 4 days, could potentially be even harder to differentiate from BPD, although a recent study showed otherwise (24). Finally, the high reciprocal comorbidity of 10–20% (25), also contributes to difficulties with the differentiation between the disorders.

Here, we suggest that an additional reason for apparent similarities could be that patients belonging to both categories may experience and express similar feelings of difficulties with understanding and describing their emotions and symptoms. For example, they may tell their therapist that 'I do not understand what is happening inside me' or 'It is difficult to describe what is happening inside me'. We further suggest that these similar subjective experiences could actually be rooted in the disorders' respective core pathologies. Specifically, manifestations of *Self-other-difficulties* such as problems with understanding oneself, one's own emotions, and one's reactions to other people could be responsible for a feeling of such difficulties in BPD. Correspondingly, suddenly appearing *Biologically influenced symptom fluctuations* such as depression, lack of energy, anxiety, and somatic manifestations; arising for apparently no reason could be difficult to understand and describe for patients with BIP-II.

Measures of *alexithymia* could potentially be useful for assessing subjective difficulties of understanding and describing symptoms and emotions (26). This term literally means 'no words for emotions' in Greek and describes a personality construct which was originally formulated in a psychosomatic context (26). The development of the most commonly used measure of this construct, the self-report Toronto Alexithymia Scale, (TAS) (27) has had a central role for the present understanding of the construct. TAS classifies responses into three subscales, which combined defines alexithymia: DIF (Difficulties Identifying Feelings, DDF (Difficulties Describing Feelings), and EOT (External Oriented Thinking) (27). EOT describes a stimulus-bond, externally oriented cognitive style. DIF and DDF may be combined into a DIDF (Difficulties Identifying and Describing Feelings) score (28). Individuals that are considered alexithymic have difficulties with the understanding of other people as well as themselves, and frequently experience interpersonal difficulties (29, 30). Thus, the alexithymia construct, in particular the DIF/DDF/DIDF scores, approximates the *Self-other-difficulties* in BPD. Also, high levels of alexithymia have been demonstrated in previous studies of patients with BPD (31).

Based on BIP-II core symptoms, one would not expect that BIP-II in itself should be associated with alexithymia, although one study found elevated alexithymia in a bipolar sample which included some BIP-II patients (32). However, one could theorize that apparently alexithymic features could arise on the basis of sudden, unpredictable, and inexplicable symptoms: In addition to normal mental and bodily reactions to psychosocial stressors, BIP-II patients experience *Biologically influenced symptom fluctuations,* including apparently spontaneous anxiety and somatic complaints, that they do not share with most other people. The consequential perceived lack of understanding of one's mental and bodily reactions, as well as the difficulties with explaining these seemingly inexplicable phenomena to other people, have been documented in qualitative studies focusing of living with bipolar disorder (33). Consequently, such a phenomenon could also subjectively approach the alexithymia construct, in particular the DIF/DDF/DIDF scores.

We are not aware of studies comparing alexithymia in BPD and BIP-II. However, emotion regulation strategies in these diagnostic groups have been compared by means of a series of self-report questionnaires (34). BPD participants generally reported more maladaptive strategies than BIP-II. On measures investigating emotional clarity and awareness—which approaches the alexithymia construct—BPD had number wise higher scores than BIP-II, but the differences were not large.

To investigate whether mechanisms as outlined could contribute to apparent similarities between BPD and BIP-II, we investigated patients with

these disorders and without reciprocal comorbidity. The participants completed the TAS questionnaire. Furthermore, core aspects of the disorders, that is, *Self-other-difficulties* and *Biologically influenced symptom fluctuations*, were investigated by means of instruments assessing relationship problems and a variety of mental and bodily symptoms and health complaints. A healthy control group (HC) was included, mainly for comparison of TAS and symptom load levels.

Aims and hypotheses

The aim of the study was to investigate subjectively perceived difficulties with identifying and describing feelings in borderline personality disorder patients, bipolar II disorder patients, and healthy controls; and to investigate how such difficulties were correlated with core aspects of the respective disorders. We hypothesized that both patient groups would present with elevated alexithymia scores, but partly due to separate underlying phenomena. We expected a significant positive correlation between the Difficulties Identifying and Describing Feelings score and relationship problems in borderline patients only, as we considered both factors to be related to *Self-other-difficulties*. In bipolar II disorder patients only, we expected that the Difficulties Identifying and Describing Feelings score would be significantly positively correlated with symptom load, as, according to the previous discussion, these patients have *Biologically influenced symptom fluctuations*. In exploratory analyses in this patient group, we expected to observe a pattern where the strongest positive correlations were observed with symptoms typical for anxiety and depression. The weakest correlations were expected to be observed with symptoms of musculoskeletal pain, which are highly widespread in the general population and probably less puzzling to patients. Furthermore, we explored how high versus low total alexithymia scores were associated with relationship problems and symptom load in the respective patient groups.

Material and methods

Subjects

The Regional Ethics Committee of Southeastern Norway (REK Sør-Øst) approved the study (REK no 6.2008.158). Written informed consent was obtained after description of the study to the subjects. Twenty-two outpatients meeting the DSM-IV criteria for BPD were recruited from the Department for Personality Psychiatry at Oslo University Hospital. Twenty-two outpatients meeting the DSM-IV criteria for BIP-II were recruited from psychiatric outpatient clinics in the greater Oslo area and from the Department of Psychosomatic Medicine at Oslo University Hospital. Twenty-three healthy control subjects were recruited through local advertising. Patients with BPD were excluded if they met the criteria for bipolar I or II disorder. To avoid including BPD patients even with subthreshold bipolarity, we excluded patients with a history of hypomanic symptoms that lasted more than 24 h. BPD patients were also excluded if they had a schizotypal or schizoid personality disorder. Patients with BIP-II were excluded if they met the criteria for any cluster A or B personality disorder. Patients in both diagnostic categories were excluded if they had a lifetime psychotic disorder. Controls were excluded if they had any previous or present psychiatric disorder, including personality disorder. Participants in all groups were excluded if they were under age 18 or above age 50; if they had a history of a neurological or other severe chronic somatic disorder (including heart disease or asthma requiring regular medication); or a history of head injury with loss of consciousness for more than 5 min.

Diagnosis, demographics, and supplementary information

Axis I and axis II assessments of patients were based on the Mini-International Neuropsychiatric Interview, version 5.0.0 (MINI) (35) and the Structured Clinical Interview for Personality Disorders (SCID-II) (36), respectively. All patients were interviewed by two clinicians. MINI interviews were carried out by a psychiatrist with expertise in mood disorders (EB), and SCID-II interviews were carried out by a psychiatrist with expertise in personality disorders (BH). The reliability of each patient's diagnosis was ascertained with the LEAD principle ('Longitudinal, Expert, All Data') (37). All available information was used. When necessary, interviews with relatives were conducted to facilitate the diagnostic evaluation. Control subjects were screened for axis I disorders with the MINI interview, while Axis II disorder assessment was based on a clinical interview, combined with the self-report Personality Disorder Questionnaire, version 4 (PDQ-4) (38). For all participants, demographic and supplementary information was obtained with the Stanley Foundation Network Entry Questionnaire (NEQ) (39). Alcohol and substance use were assessed with the clinical Alcohol Use Scale (AUS) and Drug Use Scale (DUS) (40).

Assessments

Alexithymia was assessed by the twenty-item TAS (27). In this self-report questionnaire, each item is ranked from 1 to 5, yielding a total score and three subscale scores; DIF, DDF, and EOT. Total scores of 61 or higher are considered as 'alexithymic', scores in the 52–60 range as 'possible alexithymic', and scores of 51 or lower as 'not alexithymic' (41). We were primarily interested in the participants' subjective experiences regarding identification and description of feelings, which are captured by the DIF and DDF subscales. The last TAS subscale, EOT, assesses an externally oriented cognitive style, which we considered to be of less interest given the object of our study. However, as EOT is regarded as an important part of the alexithymia construct (42), total scores as well as subscale scores were assessed and analyzed. In line with our main focus on DIF and DDF, and to maximize statistical power, we calculated a sum score of these subscales and labeled this score DIDF (Difficulties with Identifying and Describing Feelings). The DIDF score has been used previously (28).

General health complaints were assessed by the Giessener Subjective Complaints List (Giessener Beschwerdebogen, abbreviated GBB) (43). Here, subjects are asked to rate the extent to which they are bothered by 24 different health complaints on a 5-point likert scale from 0 (not at all) to 4 (very much). The items are classified into four subscales. The *Exhaustion* subscale assesses problems such as lack of energy, tiredness, and increased need for sleep (which may often indicate depression). *Gastrointestinal complaints* assesses feeling bloated, stomach ache, and similar symptoms. *Musculoskeletal complaints* assesses pain and heaviness in limbs, head and more; and *Cardiovascular complaints* assesses symptoms like palpitations, dizziness, breathlessness, lump in the throat (which may often indicate anxiety). Relationship problems in patients were assessed by the interviewer (EB) during the axis I evaluation by means of the 'Problems with relationships' item from the Health of the Nation Outcome Scales (HoNOSR) (44). Here, problems are rated on a scale from 0 (no problems) to 4 (severe problems). HoNOSR was not assessed in HC.

TAS and GBB are self-report questionnaires that do not specify a time window and thus aim to capture traits or long-term complaints.

Statistics

Statistical analyses were conducted with SPSS, version 25. In group comparisons of demographic and clinical data, Student's *t*-tests and Mann–Whitney *U* tests were performed to test for differences in continuous variables; whereas Fischer's exact tests were performed to test for differences in categorical variables.

In line with our hypotheses, our main analyses were the correlations between DIDF and HoNOSR, and between DIDF and GBB, in the two patients groups. For these analyses, we considered a two-tailed *P*-value of $P < 0.013$ to be statistically significant (Bonferroni correction based on two analyses in two groups, that is, $P < 0.05/4$). In exploratory analyses, we further investigated correlations between all TAS and GBB Total and subscale scores.

Non-parametric correlation analyses (Spearman's Rho) were chosen due to the small samples; the HoNOSR being a single item ordinal value; and a lack of normal distribution in HC. HoNOSR mean values were calculated for illustrational purposes. Whether correlation coefficients in BPD and BIP-II were significantly different from each other was investigated by means of the online calculator http://vassarstats.net/rdiff.html.

In additional exploratory analyses, HoNOSR and GBB scores in patients with definitive alexithymia (defined as TAS $\geq$ 61) were compared with scores in patients who were definitely not alexithymic (defined as TAS $\leq$ 51) in each patient group separately by the Mann–Whitney U test.

Ongoing depression might potentially influence TAS scores (45). The correlation analyses between TAS, HoNOSR, and GBB including subscales were thus rerun in currently not depressed patients.

Results

Demographic and clinical characteristics

Data are shown in Table 1. The groups differed in age. Comorbidity profiles were similar between patient groups. More BIP-II patients used lamotrigine, and more BPD patients were having a substance use disorder.

Alexithymia, HoNOSR, and GBB scores

Results are presented in Table 1. Briefly, the patient groups presented with very similar total and subscale TAS scores. Both groups had higher scores than HC on TAS, DIF, DDF, and DIDF. Ten BPD and 6 BIP-II patients could be classified as alexithymic (TAS $\geq$ 61), while 4 BPD and 9 BIP-II patients could be classified as not alexithymic (TAS $\leq$ 51). BPD patients had

Table 1. Demographic and clinical characteristics

	BPD $N = 22$	BIP-II $N = 22$	HC $N = 23$	All compared P	Patients compared P
Age in years, mean (SD)	25.2 (4.8)	32.9 (6.1)	28.5 (8.7)	.002	<.001
Females, *n* (%)	20 (90.9)	17 (77.3)	17 (73.9)	.393	
Educational level, *n* (0–10/11–13/14–17/>17 years)	1/10/8/3	1/4/9/8	0/6/11/6	.319	
MDE (current), *n* (%)	3 (13.6)	5 (22.7)			.101
MDE (lifetime), *n* (%)	20 (90.9)	22 (100)			.488
Anxiety disorder, *n* (%)	12 (54.5)	9 (40.9)			.547
PTSD, *n* (%)	2 (9.1)	0			.488
OCD, *n* (%)	1 (4.5)	1 (4.5)			1.000
Eating disorder, *n* (%)	1 (4.5)	0			1.000
Psychosomatic disorder, *n*	0	0			
No alcohol or substance use disorder, *n* (%)	15 (68.2)	20 (90.9)			.009
Alcohol use disorder, *n* (%)	3 (13.6)	1 (4.5)			.315
Substance use disorder†, *n* (%)	5 (22.7)	1 (4.5)			.042
Any psychotropic medication, *n* (%)	13 (59.1)	19 (86.4)			.088
Lamotrigine, *n* (%)	4 (18.2)	14 (63.6)			.005
Valproic acid, *n* (%)	0	1 (4.5)			1.000
Lithium, *n* (%)	0	0			
Antidepressant, *n* (%)	11 (50)	9 (40.9)			.763
Antipsychotic, *n* (%)	1 (4.5)	3 (13.6)			.607
Benzodiazepine, *n* (%)	1 (4.5)	5 (22.7)			.185
TAS score, mean (SD)	57.8 (10.0)	55.0 (12.1)	36.5 (7.4)	<.001	.411
TAS DIF	24.4 (4.6)	23.3 (4.5)	10.3 (3.3)	<.001	.295
TAS DDF	16.4 (4.8)	15.0 (4.8)	10.0 (3.4)	<.001	.377
TAS DIDF (DIF + DDF)	40.7 (8.5)	38.4 (8.5)	20.3 (5.8)	<.001	.249
TAS EOT	17.1 (3.6)	16.6 (4.6)	16.2 (4.4)	.701	.795
HoNOSR score, mean (SD)	1.7 (0.8)‡	0.5 (0.6)			<.001
(No. of scores 0/1/2/3/4)	3/2/14/2/0	13/8/1/0/0			
GBB score, mean (SD)	34.2 (13.6)	27.1 (11.9)	3.4 (4.0)	<.001	.063
GBB Cardiovascular	5.6 (3.9)	4.7 (3.6)	0.1 (0.3)	<.001	.450
GBB Exhaustion	13.5 (4.7)	10.5 (5.9)	1.1 (1.5)	<.001	.075
GBB Gastrointestinal	5.0 (4.2)	3.9 (3.1)	0.7 (1.2)	<.001	.507
GBB Musculoskeletal	10.0 (5.1)	8.0 (3.8)	1.6 (2.1)	<.001	.099

BPD, Borderline Personality Disorder; BIP-II, Bipolar II Disorder; HC, Healthy Control; MDE, Major Depressive Episode; Anxiety disorder includes panic disorder, agoraphobia, social phobia, general anxiety disorder. PTSD, Post Traumatic Stress Disorder; OCD, Obsessive Compulsive Disorder; TAS, Toronto Alexithymia Scale; TAS subscales: DIF, Difficulties Identifying Feelings; DDF, Difficulties Describing Feelings; DIDF, sum of DIF and DDF; EOT, External Oriented Thinking; HoNOSR, Health of the Nation Outcome Scales, Relation item; GBB, Giessener Beschwerde Bogen/Giessener Subjective Complaints List.

†Substances: BPD: cannabis, cocaine, benzodiazepines, amphetamine. BIP-II: cannabis.

‡HoNOS scores available from 21 BPD patients.

significantly higher HoNOSR scores than BIP-II patients. All GBB scores were significantly higher in patients than in HC. They did not differ significantly between the patient groups, but BPD patients had somewhat higher scores than BIP-II numerically.

Correlations

Detailed results are presented in Table 2 A. Regarding the main analyses of DIDF, HoNOSR and GBB, there was a significant positive correlation between DIDF and HoNOSR in BPD ($\rho = 0.542$, $P = 0.011$) but not in BIP-II ($\rho = 0.194$, $P = 0.388$). There was a significant positive correlation between DIDF and GBB ($\rho = 0.579$, $P = 0.005$) in BIP-II, but not in BPD ($\rho = 0.416$, $P = 0.054$).

The differences in correlation coefficients between the disorders did not reach statistical significance or trend significance for any analyses.

Comparison between alexithymic and non-alexithymic patients

Results are presented in Table 3. Generally, the results supported the findings from the correlational analyses.

Analyses of non-depressed patients

TAS scores of non-depressed patients were comparable with those of all patients. Correlational analyses are presented in Table 2B. The positive correlation between DIDF and HoNOSR in BPD was slightly weaker in this group than in the whole sample ($\rho = 0.477$, $P = 0.045$). The positive

Table 2. Correlations between HoNOS, TAS, and GBB

		HoNOS Relation (rho, *P*)	GBB Total (rho, *P*)	GBB Cardio. (rho, *P*)	GBB Exhaust. (rho, *P*)	GBB Gastro. (rho, *P*)	GBB Musc. (rho, *P*)
A. All participants							
BPD (*N* = 22)	TAS	0.498	0.364	0.429	−0.079	0.369	0.373
		0.021	0.096	0.046	0.728	0.091	0.087
	DIF	0.473	0.475	0.231	0.335	0.605*	0.187
		0.030	0.026	0.301	0.127	0.003	0.406
	DDF	0.503	0.173	0.170	−0.155	0.179	0.304
		0.020	0.441	0.448	0.490	0.426	0.169
	DIDF	0.542*	0.416	0.306	0.089	0.421	0.355
		0.011	0.054	0.166	0.685	0.051	0.105
	EOT	0.073	0.090	0.424	−0.317	0.055	0.220
		0.753	0.690	0.049	0.151	0.808	0.326
BIP-II (*N* = 22)	TAS	0.107	0.589*	0.540*	0.413	0.473	0.111
		0.635	0.004	0.009	0.056	0.026	0.623
	DIF	0.188	0.544*	0.457	0.480	0.466	0.001
		0.403	0.009	0.032	0.024	0.029	0.998
	DDF	0.158	0.608*	0.572*	0.428	0.489	0.136
		0.481	0.003	0.005	0.027	0.021	0.545
	DIDF	0.194	0.579*	0.487	0.480	0.516	0.030
		0.388	0.005	0.022	0.024	0.014	0.896
	EOT	0.017	0.464	0.441	0.289	0.243	0.181
		0.941	0.030	0.040	0.192	0.275	0.419
HC (*N* = 23)	TAS		0.131	0.117	0.222	−0.180	0.111
			0.551	0.596	0.309	0.411	0.614
	DIF		0.458	0.071	0.500	0.249	0.376
			0.028	0.749	0.015	0.252	0.077
	DDF		−0.024	−0.047	−0.036	−0.155	−0.065
			0.914	0.831	0.870	0.479	0.769
	DIDF		0.271	0.012	0.284	0.061	0.193
			0.210	0.958	0.188	0.782	0.378
	EOT		0.032	0.153	0.100	−0.200	0.037
			0.886	0.486	0.651	0.359	0.865
B. Currently non-depressed patients							
BPD (*N* = 19)	TAS	0.459	0.350	0.537	−0.186	0.325	0.393
		0.056	0.141	0.018	0.445	0.175	0.096
	DIF	0.409	0.450	0.266	0.343	0.593*	0.187
		0.092	0.053	0.271	0.151	0.007	0.444
	DDF	0.443	0.201	0.355	−0.311	0.249	0.258
		0.066	0.410	0.136	0.194	0.304	0.287
	DIDF	0.477	0.399	0.426	−0.019	0.439	0.315
		0.045	0.090	0.099	0.937	0.060	0.190
	EOT	0.082	0.070	0.400	−0.347	−0.057	0.318
		0.746	0.775	0.090	0.145	0.818	0.185
BIP-II (*N* = 17)	TAS	0.103	0.699*	0.698*	0.494	0.546	0.297
		0.693	0.002	0.002	0.044	0.023	0.247
	DIF	0.238	0.672*	0.617*	0.616*	0.515	0.152
		0.357	0.003	0.008	0.009	0.034	0.560
	DDF	0.154	0.704*	0.679*	0.496	0.671*	0.278
		0.555	0.002	0.003	0.043	0.003	0.279
	DIDF	0.225	0.679*	0.623*	0.589	0.592*	0.167
		0.385	0.003	0.008	0.013	0.012	0.521
	EOT	−0.071	0.592*	0.597*	0.339	0.294	0.397
		0.788	0.012	0.011	0.184	0.252	0.115

HoNOS Relation, Health of the Nation Outcome Scales, Relation item; GBB, Giessener Beschwerde Bogen/Giessener Subjective Complaints List; GBB subscales: Cardio., Cardiovascular complaints; Exhaust., Exhaustion; Gastro., Gastrointestinal complaints; Musc., Musculoskeletal complaints; TAS, Toronto Alexithymia Scale; TAS subscales: DIF, Difficulties Identifying Feelings; DDF, Difficulties Describing Feelings; DIDF, Difficulties Identifying and Describing Feelings; EOT, External Oriented Thinking; BPD, borderline personality disorder; BIP-II, bipolar II disorder; HC, healthy control.

*$P < 0.013$.

correlation between DIDF and GBB in the non-depressed BIP-II group was slightly stronger than when all patients were included ($\rho = 0.679$, $P = 0.003$). Furthermore, correlations between alexithymia scores and the GBB Cardiovascular, Exhaustion, and Gastrointestinal subscales were

Table 3. Relationship problems and health complaints in alexithymic and not alexithymic patients

		Alexithymic (TAS ≥ 61) (BPD $N = 10$; BIP-II $N = 6$)	Not alexithymic (TAS ≤ 51) (BPD $N = 4$; BIP-II $N = 9$)	P
HoNOS Relation, mean (SD)	BPD	2.0 (0.5)	0.5 (1.0)	0.036
Score (0/1/2/3/4)		0/1/8/1/0	3/0/1/0/0	
	BIP-II	0.3 (0.5)	0.2 (0.4)	0.776
		4/2/0/0/0	7/2/0/0/0	
GBB, mean (SD)	BPD	40.8 (10.1)	32.0 (11.2)	0.240
	BIP-II	34.5 (12.8)	19.8 (7.9)	0.008*
GBB Cardiovascular, mean (SD)	BPD	7.4 (3.1)	6.0 (4.1)	0.374
	BIP-II	8.0 (3.1)	2.8 (2.4)	0.005*
GBB Exhaustion, mean (SD)	BPD	13.8 (4.9)	14.0 (6.2)	0.839
	BIP-II	11.3 (3.9)	6.7 (4.9)	0.050
GBB Gastrointestinal, mean (SD)	BPD	7.2 (4.4)	2.3 (2.1)	0.054
	BIP-II	6.2 (2.6)	2.7 (1.9)	0.018
GBB Musculoskeletal, mean (SD)	BPD	12.4 (2.8)	9.8 (5.4)	0.454
	BIP-II	9.0 (5.4)	7.7 (2.3)	0.689

BPD, Borderline Personality Disorder; BIP-II = Bipolar II Disorder; HC = Healthy Control; HoNOS Relation = Health of the Nation Outcome Scales, Relation item; GBB = Giessener Beschwerde Bogen/Giessener Subjective Complaints List.
*$P < 0.013$.

slightly stronger than when all BIP-II patients were included. The strongest positive correlations, with ρ values between 0.6 and 0.7, were observed between TAS/DIF/DDF/DIDF and GBB Total/Cardiovascular.

Discussion

The present study investigated self-assessed alexithymia and its association with relationship problems and symptom load in BPD, BIP-II, and HC. The patient groups had similarly elevated alexithymia scores and reported similarly elevated symptom load. The BIP-II group stood out from the other groups in two ways: First, among BIP-II patients there were no clear associations between alexithymia scores and relationship problems; second, a significant positive association between alexithymia scores and symptom load was identified. In contrast, alexithymia scores were associated with relationship problems in BPD, while there generally were no strong associations between alexithymia scores and health complaints in either BPD or HC. The results are in line with our hypotheses, and suggest that in BPD patients, elevated alexithymia scores represent genuine difficulties with identifying and describing feelings. However, in BIP-II patients, elevated alexithymia scores may at least partly represent subjectively perceived difficulties that may be accounted for by unpredictable mental or somatic symptoms.

BPD, alexithymia scores, and Self-other-difficulties

We identified positive correlations between alexithymia scores and relationship problems in the BPD group. Although the HoNOSR item is a very simple way of assessing the quality of relationship problems, these results nevertheless suggest a connection between alexithymia and relationship problems in BPD. A large number of studies have found that alexithymia is related to relationship problems. First, prerequisites for normal relational functioning are affected in alexithymic individuals. Not only do they have difficulties with identifying and describing their own feelings, they also have a reduced ability to understand *other* people's feelings (30, 46–49). Also, actual interpersonal functioning has been shown to be negatively correlated with high levels of alexithymia (29, 50). Held together, the association between alexithymia scores and relationship problems in BPD supports that alexithymia is related to the *Self-other-difficulties* core symptoms of BPD.

Alexithymia scores in BIP-II

In the BIP-II group, a similar degree of alexithymia elevations as in BPD was observed without any association with relationship problems. The actual prevalence of such problems was very low. This is not surprising in a sample selected for not having a cluster A or B personality disorder. Yet it is arguably surprising to identify high levels of alexithymia in patients nearly devoid of relationship problems. The lack of association is however in line with our assumption that *Self-other-difficulties* are not central in BIP-II psychopathology. On the other hand, alexithymia scores were positively correlated with health complaints in the BIP-II group in line with our hypotheses. Moderate positive correlations between symptoms and alexithymia have

previously been reported in the general population and appear unspecific (51). However, in the present study, the associations in BIP-II differed from those observed in both BPD and HC. First, the pattern of associations between alexithymia and the different GBB subscales were in accordance with our hypotheses, described in more detail below. Second, on a TAS subscale level, positive correlations were consistently observed with the DIF/DDF/DIDF scores, which is also in line with our hypotheses. Third, positive correlations were distinctly stronger in BIP-II than in the other groups, although the between-group differences in correlation coefficients did not reach statistical significance. Lastly, the analyses comparing alexithymic and non-alexithymic BIP-II patients (Table 3) showed a similar subscale pattern as the correlational analyses, giving further support to the validity of the findings.

Relatively strong correlations were found between alexithymia scores and GBB Cardiovascular complaints. Also, there was relatively a large difference between alexithymic and non-alexithymic individuals regarding cardiovascular complaints (Table 3). The Cardiovascular subscale is highly likely to represent anxiety and panic in these somatic healthy subjects. Panic attacks may affect around 75% of BIP-II patients (52), but vary with mood state and are most prominent in depressive phases (53). In hypomanic phases, BIP-II patients may on the contrary feel unusually resistant to anxiety (54). Sudden cardiovascular/anxiety symptoms without an identifiable reason could thus conceivably induce a sense of unpredictability and lack of control in BIP-II, giving rise to high alexithymia scores. The positive correlation between alexithymia and GBB Gastrointestinal complaints could seem surprising at first glance. However, gastrointestinal symptoms are common in bipolar disorders, and recently such complaints were shown to be linked to mood swings in BIP-II (55). The positive correlation between alexithymia and GBB Exhaustion is compatible with the lack of energy and related phenomena observed in bipolar depression. Importantly, there were no associations between alexithymia and GBB Musculoskeletal complaints. Musculoskeletal complaints are usually diffuse, protracted, and almost universally prevalent in all population groups (56). Thus, they may be less likely to be perceived as strange or inexplicable for BIP-II patients. Held together, the TAS—GBB subscale association pattern supports our hypothesis that alexithymia scores may be, at least partly, caused by *Biologically influenced symptom fluctuations* in BIP-II.

Alexithymia scores and GBB in BPD

The BPD patients exhibited high levels of health complaints. However, correlation analyses between TAS and GBB yielded mixed results. The DIDF-GBB correlation did not reach statistical significance. A relatively strong positive correlation was observed between DIF and GBB Gastrointestinal complaints. Also, there was a number-wise large difference regarding Gastrointestinal complaints between alexithymic and non-alexithymic BPD patients. These findings could potentially be caused by an association between BPD and gastrointestinal symptoms and diseases, as some studies have suggested (57, 58). However, there was no strong association between Gastrointestinal complaints and DDF, as one would normally have expected given the close relatedness between DIF and DDF (27). Neither were there particular strong associations between DIF and the other GBB subscales similar to those observed in BIP-II. Generally, the results point toward a moderate positive association between alexithymia and symptom load in BPD, which is not surprising as this pattern is observed in the general population (51). Perhaps unpredictable gastrointestinal symptoms are frequent in BPD; this could be further explored in future studies. However, the correlations between alexithymia and GBB did not exhibit a consistent subscale pattern as found in BIP-II, and do not support a general link between *Biologically influenced symptom fluctuations* and alexithymia similar to the one observed in the BIP-II group.

External oriented thinking (EOT)

There were similar, moderately positive, associations between TAS EOT and GBB Cardiovascular complaints in both patient groups which we consider warrant a comment. This finding could, on one hand, suggest that individuals with this kind of external oriented style have a greater tendency to develop health complaints. However, an alternative explanation is that this association could represent a way of coping with symptoms: based on either their own experience, psychoeducation, or advice from therapists; patients who experience cardiac or anxiety symptoms may attempt to *not* listen to their feelings and symptoms, but rather try to override them intellectually.

Alternative interpretations

The present study contains purely correlational information and cannot definitely inform us about causality. The correlation between TAS and

relationship problems in BPD could be caused by high alexithymia leading to relationship problems; or the development of alexithymia be due to relationship problems; or a common underlying factor could form the basis for both alexithymia and relationship problems. Likewise, correlations between symptoms and alexithymia in BIP-II could be caused by alexithymia predisposing individuals for the development of symptoms; or that these symptoms in some way or another lead to alexithymia; or that a common underlying factor predisposes for both. The important finding is, however, the different patterns of correlations between the participating clinical groups.

Limitations

The number of participants was relatively small, limiting the generalizability of our results. The small sample size may also be responsible for the lack of significant differences between correlation coefficients. The gender balance was skewed, with few male participants, particularly in the BPD group. The inclusion of the HC group was of limited value, since they had particularly low levels of TAS and GBB. The use of HoNOSR with only a single item for the assessment of relationship problems is a weakness of the study; a more comprehensive assessment would have been preferable. Also, HoNOSR assessment was lacking in HC.

The use of a self-report questionnaire for the assessment of alexithymia has limitations. However, the present study did not intend to study alexithymia per se. Rather, we were interested in patients' subjective experiences of difficulties with the identification and description of feelings. Also, recent research suggests that self-report assessment may actually be more suited for assessing patients' subjective experiences than previously thought (59). Still, an alternative assessment of alexithymia, for example an observer-rated measure like the Toronto Structured Interview for Alexithymia (60), would have been highly valuable in light of our findings and could perhaps be applied in future studies.

This study did not intend to investigate the alexithymia construct or the TAS questionnaire in itself. However, based on our findings, it is reasonable to suggest that alexithymia as measured by self-report TAS may not represent entirely equivalent underlying psychological and psychopathological mechanisms in different clinical groups.

Study strengths

We consider the main strength of the study to be the very careful selection of patients, thus ensuring 'pure' patient samples without reciprocal comorbidity.

Conclusions and implications

Our findings of similar TAS scores and symptom load in BPD and BIP-II concur with the notion that these disorders may be difficult to separate in clinical practice. However, the clearly different correlational profiles suggest that they represent distinct clinical entities and emphasize the importance of careful diagnostic evaluation. Patients with either disorder may express difficulties with identifying and communicating their emotions. The quality of these difficulties needs to be explored in line with the present findings.

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Disclosures

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Data availability statement

The data are not available due to privacy or ethical restrictions.

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