Borderline personality disorder (BPD) is a severe disorder of affective dysregulation, accompanied by distorted perceptions of self image and social interaction. Problems mostly develop in early adolescence: severe mood swings, aggressive outbreaks, and severe self doubt are often the first signs. If these are accompanied by self harm, attempted suicide, drug problems, and eating disorders, then clinically the existence of BPD can be suspected. In addition to these conspicuous signs in behaviour and experience, structural and functional changes of the central frontolimbic regulatory mechanisms are seen (1). Most clinical deviations therefore have to be regarded as the result of affective dysregulation or as a (dysfunctional) attempt to cope with this. Self harm, for example, or binge eating or alcohol abuse are often used to find relief in periods of intense tension and excitement. In the long term, however, these attempted “solutions” often manifest as comorbid disorders. These influence the development of symptoms negatively and often hinder therapy.

Epidemiology and clinical course

The prevalence of BPD is estimated at 2% (2). In view of the fact that most patients are female and 15 to 45 years of age, it may be assumed that some 3% of young adult women and 1% of men meet the criteria of BPD. This means that this serious disorder is more common than schizophrenic disorders, for example. About 80% of those affected seek psychiatric or psychotherapeutic help, and some 15% of patients in psychiatric-psychotherapeutic hospitals meet the criteria of BPD – at least in the secondary diagnosis. This makes BPD one of the most common diagnoses at admission in psychiatric hospitals. The fact that this group of

Definition

- Affective dysregulation accompanied by distorted perception of self image and social interaction.
- The first signs are severe mood swings, aggressive outbreaks, and serious self doubt.
BOX 1

Diagnostic criteria for BPD according to DSM-IV

- For a diagnosis of borderline personality disorder according to DSM-IV, a minimum of five of the following nine criteria have to be met:

**Affectivity**
1. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)
2. Affective instability due to a marked reactivity of mood
3. Chronic feelings of emptiness

**Impulsivity**
4. Impulsivity in at least two areas that are potentially self-damaging (e.g., sexuality, substance abuse, reckless driving, binge eating)
5. Recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior

**Cognition**
6. Transient stress-related paranoid ideation or severe dissociative symptoms
7. Identity disturbance: markedly and persistently unstable self-image or sense of self

**Interpersonal behavior**
8. Frantic efforts to avoid real or imagined abandonment
9. A pattern of unstable and intense interpersonal relationships

BOX 2

Clinical diagnosis of borderline disorder

**Lead symptom**
Sudden-onset intense aversive tension, self harm

**Operationalized diagnosis**
Structured clinical interview for DSM-IV personality disorders (SCID II) or IPDE (international personality disorder examination, borderline module)

**Assessing the degree of severity**
Using the list of borderline symptoms (e.g. Bohus et al)

**Comorbidity**
SCID I (structured clinical interview for Axis I disorders, after DSM-IV)

Epidemiology and clinical course
- The prevalence is estimated at 2%.
- 80% of people affected seek psychiatric or psychotherapeutic help; 15% of patients in psychiatric-psychotherapeutic hospitals meet the criteria for BPD.

Diagnosis
- In addition to the diagnosis, the degree of severity of any symptoms should be determined.
- Comorbid disorders or affective disorders should be captured completely by using an operationalized instrument (SCID I).
patients seek a lot of professional help makes particularly heavy demands on the healthcare system. Annual treatment costs in Germany amount to 3 billion, some 15% of the total expenditure for psychological disorders (3). 90% of these costs are incurred by inpatient treatment. The average duration of hospitalization in Germany is currently 68 days per year. As described above, the onset of the disorder usually dates back to early adolescence. The average age of patients receiving their first inpatient treatment, however, is 24. At this age, the probability of having to be admitted to psychiatric or psychotherapeutic institutions every year for the following 10 years is some 80% (3). Recent studies from the United States showed that the long-term course of BPD seems better than previously assumed. Zanarini et al (4), in a large catamnesis study of 290 female patients with BPD who received psychotherapeutic treatment, found that the psychopathology reduces clearly over the years. Another long-term study, the CLPS study (5), largely confirmed these findings. The generalizability of these data to conditions in Germany is the subject of ongoing controversial debate, however. Comparable data for the European or German areas are urgently required but do currently not exist.

**Diagnosis**

The diagnostic criteria laid out in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), an internationally recognized catalogue of criteria, are summarized in box 1. For a diagnosis of BPD, five out of nine criteria as well as the general criteria for a personality disorder have to be met over a long period of time.

For the scientific and clinical diagnosis it has been proved useful to determine the severity of the symptoms, in addition to the diagnosis. The recommended instruments to make the diagnosis are the Structured Clinical Interview for DSM-IV Personality Disorders (SCID II; 6) or the International Personality Disorder Examination (IPDE; 7). Both instruments are available in a German-language version. To determine the severity of the disorder, three instruments have been developed; of these three, only the list of borderline symptoms published by Bohus et al (8) is available as a questionnaire in the German-speaking area.

Since comorbid conditions such as addiction disorders, post-traumatic stress disorders, or affective disorders substantially influence the course and prognosis, and therefore the planned therapy, it has been confirmed in clinical practice that it is worth gathering complete information on these by using an operationalized instrument (SCID I).

For the purposes of differential diagnosis it seems important to point out that the experiences and behavioral patterns associated with BPD do not occur exclusively during depressive episodes.

Clinical diagnosis in practice should use the following decision algorithm (box 2).

**Etiology and symptoms**

Most scientists currently favor an etiological model that assumes interactions between genetic and psychosocial variables and dysfunctional behavior and interaction patterns. The only twin study, which compares the concordance rates of monozygous and dizygous twins of whom one twin has a manifest personality disorder as diagnosed by DSM-IV, was published in November 2000 (9). The trial suggests that genetic factors have a significant role in the development of BPD. Another, indirect, hint at genetic involvement is the fact that some 50% of those affected retrospectively report a manifest attention deficit and hyperactivity disorder (ADHD) in childhood, and a clear genetic predisposition has been confirmed in ADHD. The biographically relevant psychosocial stress factors include experiences of sexual violence (65%), of physical violence (60%), and severe neglect.

**Etiology**
- Borderline disorders have a genetic component.
- There is no evidence that borderline disorder is primarily a chronic, post-traumatic stress syndrome.

**Symptoms**
- 80% of patients report at least one suicide attempt, 8% actually commit suicide.
- The most important motive for self harming is the intention to alleviate tension.
In case of the sexual violence, the experiences are mostly very early, long-term traumatizing events, and it has been found that borderline patients experience these primarily in their families (10). It is, however, important to point out that sexual trauma is not a necessary or sufficient prerequisite for the development of BPD. The assumption that BPD is a chronic, post-traumatic stress syndrome, which is popular among clinicians, has no scientific evidence base.

The pathogenetic model would certainly not be sufficient if the destabilizing effect of dysfunctional behavior patterns were not taken into account. At the symptomatic level, many suicide attempts are worrying. Some 80% of all borderline patients report at least one attempt at taking their own lives; most report several such attempts. Some 8% of those affected are unfortunately successful in their attempt. An important risk factor for suicide is self-harming behaviour, such as cutting, hitting, burning, inflicting chemical burns, which 85% of borderline patients display at least during some time periods. About half of patients report that this behavior pattern started when they were primary school age. The most important motive for self-harming behavior is to try to minimize severe negative emotion states or tension. Most of those affected are insensitive to pain during these episodes. About 20%, however, cut themselves in spite of, or because of, intense feelings of pain.

The latter group experiences a "kick" through self harm, i.e., they feel euphoric; their cognitive abilities and ability to achieve are enhanced. The formative influence of drugs and alcohol abuse on affective regulation during adolescence is often underestimated. The same is true for eating and drinking disorders, which can be found in almost every medical history of BPD.

**Emotional dysregulation**

In the view of most scientifically oriented working groups, affective dysregulation is at the center of borderline problems (1): the threshold for external or internal events that trigger emotions is low, the level of excitement rather high. Patients reach their original emotional level only with a delay. Patients do not perceive the different emotions in a differentiated way, but they do experience these as extremely painful, diffuse tension states. Often they are so intense that those affected experience a strong sense of unreality, and substantial parts of the central sensory processing of stimuli, such as the perception of pain, are disrupted (dissociation). The

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**CASE STUDY**

**A case of suspected borderline personality disorder**

A surgical intensivist sought immediate psychiatric consultation. A 24-year-old woman had been admitted to hospital by three friends after a suicide attempt. She had inflicted cuts on her forearms and had taken about 500 ml of her own blood. The hemoglobin had dropped to 5.3. Since there was a danger she might try to escape the patient had been restrained.

The underweight, anemic woman reported after a moment’s hesitation that she had found out the previous day that her friend was intending to leave her to go and live abroad. She could not imagine life without her. In complete despair she had got drunk and then taken her blood. She did this frequently as it helped her not to feel herself quite as intensely. Before losing consciousness she had telephoned her friend to say goodbye. On questioning she reported having had severe mood swings for years and having cut herself regularly to alleviate her tension. She wanted to return home immediately as the friend had now agreed to continue the relationship.
named self-harming behavioral patterns can reduce these aversive states of tension, which in the sense of learning theory can be described as negative reinforcement.

The striking behavioral patterns in social interaction can also be explained with emotional dysregulation. Among these, difficulties in regulating closeness and distance are particularly dominant in this context. Patients are dominated by an intense fear of being alone and by poor intrapsychological anchoring of people who are important to them and thus often confuse aloneness with abandonment. They therefore try to form permanent ties to significant others. On the other hand, the perception of closeness and security often causes a high degree of fear, guilt, or shame.

The consequence: long-term, difficult relationships with frequent separations and reconciliations. To outsiders, these interaction manoeuvers are often inexplicable or "manipulative." Many doctors, and even psychotherapists, who have not undergone additional training, feel out of their depth and oscillate between exaggerated worry and harsh rejection. Even under study conditions, half of all unspecific psychotherapies are ended prematurely.

Another symptom of affective dysregulation are the striking dissociative phenomena. In situations of high stress, senso-motoric integration is disrupted, which is subjectively experienced as a distortion of the spatial-temporal sense, as an intense feeling of alienation, and foremost as a loss of control over reality. Further, frequent "flashbacks" occur, the reliving of scenes of traumatic events, which cognitively are assigned to the past but emotionally experienced as current and real. These flashbacks can last hours and days and are often misdiagnosed as psychotic events by clinically inexperienced people.

Nighmares as well as difficulties in falling asleep and sleeping through also place stress on people's general wellbeing and are emotionally destabilizing. Alcohol and drug abuse, eating disorders, neglect of physical activity, and dealing with physical illness in a neglectful way can all cause social problems such as poor education and unemployment.

Psychotherapy for BPD

The effort to develop disorder-specific psychotherapeutic treatment concepts for psychological disorders has found its way into BPD. In addition to dialectic behavioral therapy (DBT; 11), a behavioral therapeutic concept, manualized therapeutic concepts from other therapeutic schools have become available in the meantime. O Kernberg developed "transference focused therapy" (TFT; 12); Bateman and Fonagy, "mentalization based treatment" (MBT; 13, 14); and J Young, "schema focused therapy for BPD" (15). Before we focus on the respective studies, the common features of these disorder-specific forms of treatment will be outlined briefly:

**Diagnosis**

The basic condition for a disorder-related psychotherapy is a diagnosis that is based on defined criteria and that is open to the patient.

**Time frame**

It has become established practice to agree a clear, limited time frame for the therapy at the beginning, and to stick to this. Most therapies take up to 3 years.

**Therapy agreement**

Common to all therapies are clear rules and agreements relating to how to deal with suicidality, crisis interventions, and disturbances to the therapeutic framework conditions. These are agreed at the start of therapy in the so-called therapy contracts.

**Psychotherapy for BPD**

- The main requirement is a diagnosis that is based on defined criteria.
- Clear rules and agreements between doctor and patient ("therapeutic contract") are obligatory.
- Suicide attempts or urgent suicidal ideation are treated as priority.
**Prioritizing therapeutic goals**
The goals of the therapy are ranged in hierarchical order for all disorder-specific procedures to treat BPD – suicide attempts or suicidal ideation are always given priority. Priority should also be given to behavioral patterns that endanger the therapy, for example those that place a heavy burden on the therapist or the fellow patients. Priority also needs to be given to physical sequelae of psychological disorders that would hinder emotional learning processes (severe anorexia, benzodiazepine dependency, drug or alcohol addiction).

**Multimodal approach**
Most approaches combine different methods such as individual therapy, group therapy, pharmacotherapy, and especially telephone counseling for the purpose of crisis intervention.

**Supervision**
Experts all agree that the supervision of the treating therapist should be part of the therapy. Strictly speaking, all scientific proof of efficacy has been found only under supervised conditions.

**Evidence-based psychotherapy**
The Cochrane Collaboration in 2006 published a metaanalysis about the effectiveness of psychotherapeutic approaches in the treatment of BPD (17) and concluded that some of the most important, borderline-typical problems could be improved through talking cures or behavioral therapy, but that the data were still too weak to make definite statements. In the meantime, two more controlled, randomized studies have been published that confirm the effectiveness of disorder-specific psychotherapy (18, 19).

So far, effectiveness has been proved for three forms of psychotherapy (see additional table e1 at the end of this article): for dialectic behavioral therapy (DBT) in the inpatient and outpatient setting, for MBT as part inpatient long-term therapy, and for schema-focused therapy as a 3-year outpatient therapy. The effectiveness of DBT was shown by 4 independent working groups in 7 randomized therapeutic studies; few randomized controlled studies are available for other forms of therapy (2). A controlled study from Germany further proved the effectiveness of a 3-month inpatient treatment concept for DBT (20). MBT has thus far been proved to be effective for part inpatient treatment (13, 14); with low dropout rates, significant improvements are found only after 12 months, notable effects, however, only after 3 years' treatment, when the therapy was administered as continuous outpatient therapy in this time period. The superiority of the schema-focused therapy according to Young (3 years' outpatient treatment) vis-à-vis the transference focused treatment (TFT) developed by Kernberg was shown in a randomized, controlled trial (18). Nothing can currently be said with respect to the general effectiveness of TFT, as no proof of efficacy has been published.

In spite of these altogether promising results, all studies found that only 50% of treated patients responded to the procedures used. Investigations into general or treatment-specific predictor variables have thus far not been carried out. It therefore remains unclear which patients respond to psychotherapy at all and which patients respond to specific treatment options. It also remains unclear whether it makes sense to repeat treatments that have not been successful at first or whether to change the procedures. Comorbid anxiety disorders put a great strain on the patients, such as post-traumatic stress disorder (PTSD), social phobias, and generalized anxiety disorders. These often continue even when the severe disorders at the behavioral level, such as suicidality and self harm, temporarily cease. The traditional, established, exposure-based and cognitive psychotherapeutic procedures are not far-reaching enough for borderline patients. Some hospitals in Germany offer...
Pharmacotherapy for BPD

The few randomized controlled pharma studies into BPD are mostly based on small numbers of cases and include only short observation periods. Currently, no drug is licenced for the treatment of BPD; the drugs are characterized by a more or less typical efficacy for certain areas of psychopathology (21). Several placebo-controlled studies have been conducted over the past 10 years, which showed efficacy for selective serotonin reuptake inhibitors (SSRIs), mood stabilizers such as valproic acid, and atypical neuroleptics (see additional table e2). Initial positive findings for topiramate will have to be confirmed. Good effectiveness with regard to affective regulation, depression, impulsiveness, and anxiety has been found for the atypical neuroleptic olanzapine, which is preferable to classic neuroleptics because of its better tolerability, although the commonly accompanying weight gain can be problematic especially in female patients with comorbid eating disorders. Aripiprazole and quetiapine are alternatives (e2). A recent placebo-controlled study proved the superiority of combined treatment with DBT and olanzapine versus DBT with placebo (22).

Open studies have shown positive effects for risperidone and clozapine. The efficacy of naltrexone in dissociative symptoms was also shown in an open study (23). In acute states of excitement, catapresan has often been found to be useful. Benzodiazepines in borderline patients have a considerable potential for addiction and should be restricted to a few individual cases, short-term only, and for good reasons.

The current situation in Germany

Although disorder-specific psychotherapeutic treatment concepts have been found to be effective, it has to be emphasized that the current situation with respect to care for borderline patients in Germany in the outpatient setting is completely unsatisfactory. Most of the inpatient costs could certainly be drastically reduced by establishing integrated care pathways. In this context, one high-risk group has to be mentioned in particular: borderline patients with comorbid alcohol or drug addiction have the highest risk of suicide and chronification – and especially for this group of patients, the treatment options in Germany are least developed.

Conclusions for clinical practice

General practitioners, but also primary care paediatric specialists, who are in contact with adolescents, should consider the likelihood of a borderline personality disorder when faced with obvious scars from cuts and burn wounds. Affective dysregulation should be elicited (intense tension, mood swings, serious self doubt), and doctors should find out about suicidal ideation or suicide attempts. In case this is reasonably suspected, the patient should be informed about the possibility of a borderline personality disorder. In the meantime, some useful patient information materials (24) have been published, and reports of affected patients are available (25), which enable thorough reflection on the subject.

If the diagnosis is confirmed, it should urgently be ensured that the patient seeks specialized psychiatric or psychotherapeutic treatment, if possible from a doctor who has received disorder-specific additional training. It needs to be borne in mind that borderline patients often have a tendency to ignore physical illnesses and not to have these treated adequately. The reasons for this include an intense hatred of one’s own body as well as traumatic sexual experiences that lead to intense fears and anxiety about the physical closeness that is required.

**Pharmacotherapy**
- Currently, no drug has been licensed for the treatment of borderline personality disorder.
- The superiority of combined treatment with DBT and olanzapine has been proved.

**Conclusion**
- When faced with obvious scarring from cuts and burn wounds, consider borderline disorder.
- IF BPD is present, inform patient.
- Enable patient to control automatic crisis-promoting behaviors.
for a medical examination. The doctor is then faced with the difficult task of finding a balance between careful restraint and urgent insistence that the patient receives adequate physical care. This is especially so as far as body weight and threatening metabolic syndromes are concerned (many borderline patients are either anorexic or seriously overweight), although orthopedic disorders (as a result of overweight) also have to be considered.

Sometimes borderline patients have an urge to consult several medically or therapeutically active professionals at the same time. The recommendation is for all involved to communicate with each other and to ensure that the treatment is handed over to one specialist. There is a tendency to be seduced to act unprofessionally because of the emotional needs of the patient. In this setting it is of particular importance not to transgress one’s personal and ethical boundaries but to maintain a professional distance. Interventions are the domain of the expert. If, as is mostly the case, referral to a specialist is not possible, then a specialist inpatient center should be contacted.

Psychiatric/psychotherapeutic treatment should primarily aim to enable the patient to assert control over automatic, crisis-promoting behavior. Suicidality, serious self harm, high-risk behaviors, and drug abuse are all important in this context. Only as a second step is it possible to tackle problems at the level of emotional experience (such as the sequelae of sexual trauma).

Conflict of Interest Statement
The authors declare that no conflict of interest exists according to the Guidelines of the International Committee of Medical Journal Editors.

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REFERENCES
For e-references please refer to the additional references listed below.


ADDITIONAL REFERENCES


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FURTHER INFORMATION

This article has been certified by the North Rhine Academy for Postgraduate and Continuing Medical Education.

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Please answer the following questions to participate in our certified Continuing Medical Education program. Only one answer is possible per question. Please select the answer that is most appropriate.

Question 1
From a research perspective, which psychopathological problem is currently seen as central to borderline disorder?
a) A generalized disorder of affective regulation  
b) An anxiety disorder  
c) A chronic post-traumatic stress disorder  
d) An adaptive disorder  
e) A disorder from the schizophrenia spectrum

Question 2
What is the prevalence of borderline disorder?
a) Less than 1%  
b) About 2%  
c) About 5%  
d) About 7%  
e) Unknown

Question 3
What is the estimate suicide rate in borderline disorder?
a) 3%  
b) 8%  
c) 10%  
d) 15%  
e) 30%

Question 4
Borderline patients use self harm primarily to:
a) Gain attention and affection  
b) Reduce severe aversive tension  
c) Demonstrate powerlessness  
d) Demonstrate their autonomy from social norms and constraints  
e) Obey symmetry constraints

Question 5
Which symptoms are associated with the syndrome “dissociation”?
a) Subjective distortion of spatial-temporal perception  
b) Reduced perception of pain  
c) A strong sense of alienation  
d) Loss of control over reality  
e) All of the above
Question 6
Which psychotherapeutic procedure has been studied in most randomized controlled trials?

a) Transference-focused psychotherapy (TFT)
b) Dialectic behavioral therapy (DBT)
c) Cognitive therapy after Young
d) Mentalization-based therapy (MBT)
e) Interpersonal psychotherapy (IPT)

Question 7
Which problem area should be prioritized for psychotherapeutic treatment if present?

a) Trauma-associated intrusions
b) Sociophobic avoidance
c) Serious disorders of emotional experience
d) Suicidality
e) Disorders of sexual behavior

Question 8
At the neurobiological level, borderline patients have been found to have changes in the following areas:

a) Cerebellum
b) Basal ganglia
c) Frontolimbic regulatory mechanisms
d) Somato-sensory cortex
e) Substancia nigra

Question 9
Some 15% of the total expenditure for psychological disorders in Germany is spent on treating borderline disorders. This is primarily due to:

a) The high outpatient costs associated with psychotherapy
b) Drug polypragmasia
c) Long and repeated inpatient stays
d) The high costs of medical emergencies
e) The high secondary costs of illness

Question 10
"Flashbacks" are a common symptoms of post-traumatic stress disorder. What does this term mean?

a) The patient's fear of remembering the trauma
b) Re-living through scenes of traumatic events
c) Reactivation of hallucinations
d) The emotional reaction of the therapist towards aggressive impulses on the patient's part
e) The rejection of the patient by family or life partners

Important Information
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The correct answers to this CME questionnaire will be published in issue 5/2007 under this heading. The CME unit “Differential Diagnosis of Headache” (issue 45/2006) is open to participants until 22 December 2006.

The planned CME topic in issue 1-2/2006 is “Somatoform and Functional Disorders”.

Correct answers to the CME questionnaire in issue 41/2006:
Baron R: Detection of Neuropathic pain syndromes:1/c, 2/e, 3/a, 4/b, 5/c, 6/d, 7/e, 8/e, 9/d, 10/e
### Table 1: Controlled psychotherapy studies about the treatment of BPD

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Inclusion criteria</th>
<th>No of patients</th>
<th>Duration</th>
<th>Main effects</th>
<th>Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBT vs. TAU</td>
<td>BPD and suicide attempt within the preceding 8 weeks and another one within the preceding 5 years; female patients only</td>
<td>24 vs. 22</td>
<td>1 year</td>
<td>DBT: reduction in frequency and dangerousness of suicide attempts and self harm; fewer break-offs of therapy and fewer inpatient crisis interventions; reduction of anger and improvement of social functioning</td>
<td>Linehan et al. 1991, 1993a, 1993b, 1994</td>
</tr>
<tr>
<td>DBT vs. TAU</td>
<td>BPD and drug dependency; female patients only</td>
<td>12 vs. 16</td>
<td>1 year</td>
<td>DBT: reduction of misuse of illegal drugs; improvement of social functioning</td>
<td>Linehan et al. 1999</td>
</tr>
<tr>
<td>DBT + LAAM vs. TAU + LAAM</td>
<td>BPD and opiate dependency; female patients only</td>
<td>11 vs. 12</td>
<td>1 year</td>
<td>DBT: reduction in opiate abuse</td>
<td>Linehan et al. 2002a</td>
</tr>
<tr>
<td>DBT vs. talking cure</td>
<td>BPD and referral after acute suicide attempt</td>
<td>12 vs. 12</td>
<td>1 year</td>
<td>DBT: reduction in number of suicide attempts and self harm, reduction in impulsivity, anger, depression, fewer inpatient crisis interventions; improved social functioning</td>
<td>Turner 2000</td>
</tr>
<tr>
<td>DBT vs. TAU</td>
<td>BPD; female patients only</td>
<td>10 vs. 10</td>
<td>6 months</td>
<td>Reduced frequency of suicide attempts and self harm, reduction of hopelessness, depression, anger</td>
<td>Koons et al. 2001</td>
</tr>
<tr>
<td>DBT vs. TAU</td>
<td>BPD; female patients only</td>
<td>31 vs. 33</td>
<td>1 year</td>
<td>DBT: reduced frequency of suicide attempts and self harm; fewer break-offs of therapy and less impulsivity</td>
<td>Verheul et al. 2000; van den Bosch et al. 2002</td>
</tr>
<tr>
<td>Inpatient DBT vs. TAU</td>
<td>BPD; female patients only</td>
<td>31 vs. 19</td>
<td>3 months</td>
<td>DBT: significant improvement in self harm and all psychopathological variables</td>
<td>Bohus et al. 2004</td>
</tr>
<tr>
<td>DBT vs. therapy delivered by psychotherapists specializing in BPD and suicidality</td>
<td>BPD and parasuicidal act within the preceding 8 weeks and another one within the preceding 5 years</td>
<td>52 vs. 51</td>
<td>1 year</td>
<td>DBT: reduction of frequency and dangerousness of suicide attempts and self harm; fewer break-offs of therapy and inpatient crisis interventions</td>
<td>Linehan et al. 2006</td>
</tr>
<tr>
<td>Depth psychology treatment in day clinic vs. TAU (no psychotherapy)</td>
<td>BPD</td>
<td>19 vs. 19</td>
<td>1,5 years</td>
<td>DBT: reduction of self harm and fewer suicide attempts; fewer inpatient crisis interventions; reduction of fear, depression; improved social functioning</td>
<td>Bateman und Fonagy 1999, 2001</td>
</tr>
<tr>
<td>Schema-focused therapy (Young) vs. depth psychology-based therapy (Kernberg)</td>
<td>BPD</td>
<td>44 vs. 42</td>
<td>3 years</td>
<td>Significant superiority of schema-focused therapy in all areas</td>
<td>Giesen-Bloo et al. 2006</td>
</tr>
</tbody>
</table>

TAU = treatment as usual; DBT, dialectic behavioral therapy; LAAM, levo-alpha-acetyl-methadol; BPD, borderline personality disorder
<table>
<thead>
<tr>
<th>Drug</th>
<th>No of patients taking drug/placebo</th>
<th>Mean dose per day (mg)</th>
<th>Weeks of treatment</th>
<th>Main effects</th>
<th>Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluvoxamine</td>
<td>38/19</td>
<td>166 ± 27 mg</td>
<td>12</td>
<td>Rapid mood changes</td>
<td>Rinne et al. 2002</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>9/8</td>
<td>20 – 60 mg</td>
<td>12</td>
<td>Global parameter anger, fear</td>
<td>Markowitz 1991</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>13/9</td>
<td>40 mg</td>
<td>13</td>
<td>Anger</td>
<td>Salzman et al. 1995</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>12/13 (all additionally receiving DBT)</td>
<td>40 mg</td>
<td>12</td>
<td>No significant effects with respect to depression, fear, irritation, dissociations, aggression</td>
<td>Simpson et al. 2004</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>19/9</td>
<td>5,3 ± 3,4 mg</td>
<td>26</td>
<td>Fear, anger/hostility, mistrust, interpersonal difficulties</td>
<td>Zanarini und Frankenburg 2001b</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>20/20</td>
<td>2,5 – 20 mg</td>
<td>12</td>
<td>General functional level (CGI-BPD)</td>
<td>Bogenschutz und Nurnberg 2004</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>30/30 (all additionally receiving DBT)</td>
<td>8,8 ± 3,8 mg</td>
<td>12</td>
<td>Depression, fear, impulsivity/aggression</td>
<td>Soler et al. 2005</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>20/26</td>
<td>15 mg</td>
<td>8</td>
<td>Total psychological stress (SCL-GSI); all subscales of the SCL, especially compulsions, insecurity in social contact, paranoid ideation, psychosis, depression, fear, irritation</td>
<td>Nickel et al. 2006</td>
</tr>
<tr>
<td>Carbamazepine</td>
<td>10/10</td>
<td>Plasma concentration, 4 – 7,1 µg/mL</td>
<td>4</td>
<td>–</td>
<td>de la Fuente und Lotstra 1994</td>
</tr>
<tr>
<td>Valproic acid</td>
<td>12/4</td>
<td>850 ± 249 mg</td>
<td>26</td>
<td>Interpersonal difficulties, aggression, anger/hostility</td>
<td>Frankenburg und Zanarini 2002</td>
</tr>
<tr>
<td>Valproic acid</td>
<td>20/10 (all additionally with bipolar II disorder)</td>
<td>850 ± 249 mg</td>
<td>26</td>
<td>Interpersonal difficulties, aggression, anger/hostility</td>
<td>Frankenburg und Zanarini 2002</td>
</tr>
<tr>
<td>Topiramate</td>
<td>19/10 (women only)</td>
<td>250 mg</td>
<td>8</td>
<td>Anger</td>
<td>Nickel et al. 2004a</td>
</tr>
<tr>
<td>Topiramate</td>
<td>22/10 (men only)</td>
<td>250 mg</td>
<td>8</td>
<td>Anger</td>
<td>Nickel et al. 2005</td>
</tr>
<tr>
<td>Topiramate</td>
<td>28/28 (women only)</td>
<td>200 mg</td>
<td>10</td>
<td>Total psychological stress (SCL-GSI), somatization, insecurity in social contact, fearfulness, aggression/hostility, phobic fear, health-related quality of life, interpersonal problems (IIP scales)</td>
<td>Loew et al. 2006</td>
</tr>
<tr>
<td>Lamotrigine</td>
<td>18/9</td>
<td>200 mg</td>
<td>8</td>
<td>Irritability or annoyance</td>
<td>Tritt et al. 2005</td>
</tr>
<tr>
<td>Omega-3 fatty acids</td>
<td>20/10</td>
<td>1 000 mg</td>
<td>8</td>
<td>Aggression, depression</td>
<td>Zanarini und Frankenburg 2003</td>
</tr>
</tbody>
</table>

DBT: dialectic behavioral therapy; CGI-BPD: clinical global impression-borderline personality disorders; SCL-GSI: symptom checklist-global severity index; CGI-I, clinical global impression of improvement; IIP, inventory of interpersonal problems
Case report:
Treatment of borderline personality disorder in an inpatient according to the guidelines of dialectic behavioral therapy (DBT)

The female patient is announced by the ward doctor of a psychiatric hospital: “... the 24-year old patient has been on a closed therapeutic ward for a good six months and keeps having to be restrained because she keeps scalding herself severely and keeps intoxicating herself with benzodiazepines. Several attempts at discharge had failed because after a few days she kept being re-admitted by the emergency doctor for attempted suicide. The treating healthcare professionals did not see what other solutions they could offer and are hoping to refer her to a special ward”.

The patient arrives by ambulance to the preliminary discussions, accompanied by two worried nurses. Dressed totally in black, sleeves pulled completely over her wrists, the exceptionally pale 24-year old crouches in the corner of her seat, giving off signs of suspicion and slight irritation. She reports having interrupted her nursing training because she had spent the preceding three years mainly in psychiatric hospitals. She had attempted suicide on numerous occasions and had always been admitted against her will. On questioning, she reports having repeatedly experienced extreme tension, combined with flashbacks, images of sexual trauma, followed by an acute need to vomit. She didn't want to talk about details.

She reports dissociative phenomena, disturbances of her spatio-temporal perception and the perception of her own body under stress. This went so far that she could not remember lengthy time periods. Sometimes she came to in a strange place and noticed that several hours were “missing”; she experienced this as very frightening. The self-harm then provided speedy relief. She reported cutting herself three to four times a week, sometimes quite deeply, including in the genital area. If she hated herself she scalded her thighs with boiling water. When questioned she reported drinking only about half a liter of fluids a day; she felt disgust and was not intending to change this. In general, she would be able to stop cutting only once she felt better. When questioned what “better” meant, she said she needed to calm down, not experience those dreadful images, and feel safe. Further, she couldn't bear to be alone; she didn't know why, and she wasn't getting on with her girlfriend. When questioned why she had stopped training as a nurse she said she had difficulties in washing male patients, and also she wasn't up to viva voce exams. This had always been the case; she had always had a fear of failure and making herself look ridiculous.

In her medical history, the patient reported having grown up in a family with two siblings. Her father had been sadistic and cruel and had been a heavy drinker. He had tyrannized the entire family. Both sisters had been sexually abused since their 6th year of life; the mother had known this but had pretended it was normal. Her sister, who had been one year older than the patient, had committed suicide at age 14. She had terrible feelings of guilt because she had known about her sister’s plan but had not dared to take the initiative to do anything about it. She had not had any back-up at school; she had never invited other girls from school to her home because she had been ashamed of what went on there. She had always felt “different”, somehow “alien and abnormal”. Shortly after her sister's death she had started to drink
heavily and take drugs. Once when she was in an inebriated state, she had been raped by four men; this had been followed by her first suicide attempt. During her first inpatient treatment in a pediatric psychiatric ward she had not dared to report what had happened to her at home as she had been scared her father would kill her. After her discharge, the sexual transgressions had become less. She then completed her first public examination in secondary school and had lived in flatshares or in the streets. She had worked as a prostitute periodically, but this had not affected her as she had learnt to "beam herself away". After she had started her training she had improved at first, but soon she had been revolted by male patients and had not been able to tolerate this. At that time she had started cutting herself. Now all she wanted was peace and quiet. Even this conversation revolted her; she had already given too much away, and afterwards she would have to pay for it all. On questioning she described a kind of "inner voice" that tormented her, "... she had nor right to tell all; she had no right to help; and everything was her own fault as she was a nauseating creature".

With a short, operationalized interview (IPDE), a diagnosis of borderline personality disorder (BPD; F 60.3) was made. Additionally the patient had severe post-traumatic stress disorder (F 43.1), dissociative disorder (F 44), social phobia (F 40.1), as well as sleep disturbances and oligodypsia. The most important – and difficult – step was to motivate the patient to accept treatment. She had learnt for too long that self harm provided short-term relief, that not drinking dampened down her feelings, and that the severe scaldings satisfied her self hatred. The many inpatient stays were not so bad, and through her role as a psychiatric patient she felt relieved from social challenges; she felt looked after and safe. The borderline therapist's task was to make her understand that these behavioral patterns may work in the short term but have fatal effects in the long term. The only way towards an improvement was to stop self harming and deal with the seemingly unbearable emotions – and thus make them more bearable.

The 12-week inpatient stay of the patient was divided into two stages. During the first phase of her treatment, the patient learnt skills and techniques to deal with severe phases of stress and to steer her dissociation. The drinking disorder was severe and complicated: on the one hand, the patient avoided her striking feelings of disgust through the restriction of fluids (she suffered from the misperception that water tasted of sperm), on the other hand, the feeling of indolence that was induced by the lack of fluid was very agreeable to her because it helped her experience her aversive emotions in a weaker form. To break this vicious cycle, it was necessary initially to infuse two liters of water every day. This measure helped improve the dissociated states notably. The implementation of her learnt skills to reduce tension was initially hampered by her negative self concept: "I have no right to feel better". Hidden feelings of revenge also played a part: "As long as I am poorly it at least becomes obvious what has happened to me". In tackling these dysfunctional cognitions, borderline-specific group therapy proved helpful – the encounter with patients who had similar disorders and thus cognitions puts the importance of one's own basic assumptions in proportion. Regular exercises to improve the "inner awareness", methods used in Zen meditation, which aim to accept and qualify one's own cognitive automatisms, certainly also helped with these problems. The more the patient learnt to go without self harm or drug intoxication to relieve her tension, the more she understood that she used these behavioral patterns to avoid feelings of guilt,
shame, and revulsion. If she did not succeed in this she activated a destructive feeling of self contempt.

The second stage of treatment aimed to process these complex and intertwined emotions. Skills to identify and modulate emotions, combined with exercises to improve awareness, are essential requirements for this process. We used as treatment modules specific training to discriminate stimuli and cognitive methods, as well as long exposure sessions (up to four hours), and finally physical therapy. The latter enabled the patient to tolerate being touched under controlled conditions, to direct her attention to sensory signals of the body without dissociating, and to learn breathing techniques that are helpful in modulating strong emotions.

At the end of the 12 weeks, the patient was able to re-start her training as a nurse. In her long exposure exercises during a practical placement, she had actually practiced washing men. She experienced dissociative states in a milder form, and her flashbacks had subsided too. She committed no more acts of self harm after her inpatient stay, and the same was true for her inpatient stay itself. She took up our suggestion and started attending a jujitsu course for women to learn self defense. She still had problems with her girlfriend, who also has borderline disorder and who reacted to her lover’s progress with separation anxiety.

Outlook
This case report aimed to show two things: on the one hand, it is possible to treat seemingly “hopeless cases” successfully, and on the other hand, to achieve this, the collaboration of a highly specialized and experienced team is needed, which has a high degree of experience and technical competence. Not all cases take such a favorable course, but 70% of treated female patients show an improvement in symptoms, and about 40% do not meet the criteria of a borderline disorder after three months’ inpatient treatment.