Metacognitive Training for Borderline Personality Disorder

(B-MCT)

- Manual -

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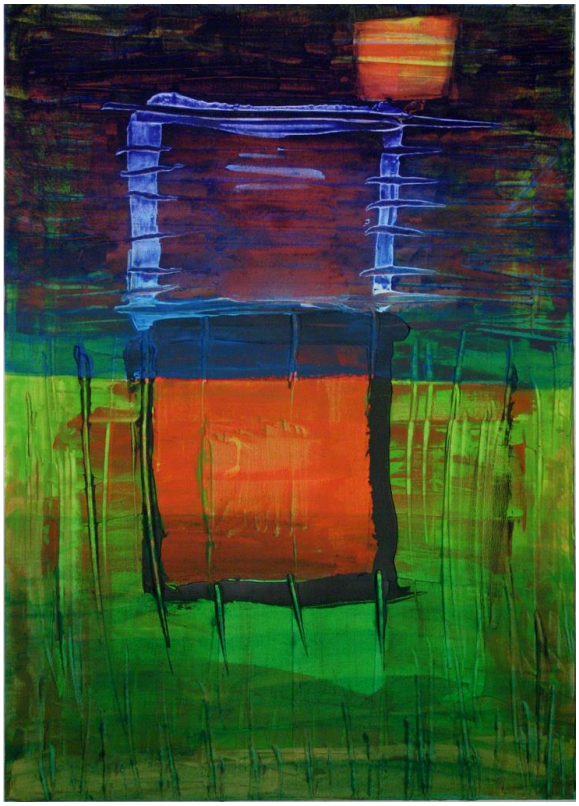

H. Sieverding: No title 8 from the Horizons series. Acrylic on canvas 60 x 80 cm, 2009.

* authors have equally contributed and split first authorship

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If you would like to support us in our effort to disseminate B-MCT, we would be very grateful for donations. We will continue to support and help everyone, irrespective of their financial contribution. We guarantee that all donations will be used for the further development of MCT (future tasks include the translation of B-MCT into other languages and the creation of new graphics). By request, we can send you a donation receipt. Donations should be made payable to the following account:

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Introduction

While older theories about borderline personality disorder (BPD) primarily viewed "psychotic-like defense mechanisms" as central characteristics, today, an emotional dysregulation is generally postulated as the leading symptom (Herpertz, 2011). According to this view, BPD is characterized by abruptly arising states of intense emotional arousal that are often followed by self-harming behavior or dissociative phenomena. Along with the cardinal symptom of affect dysregulation, BPD also becomes manifest in self-esteem instability, problems with social interaction, behavioral disorders, as well as deficits in cognitive functioning, such as dissociative symptoms and dysfunctional information processing patterns (American Psychiatric Association, 1994).
With a lifetime prevalence ranging between 3%-6% (Grant et al., 2008; Trull, Jahng, Tomko, Wood & Sher, 2010), BPD is one of the most common mental disorders. The results of the "Heidelberg school study" (Brunner et al., 2007), which included over 5000 students, are also alarming. It found an increasing incidence of early self-harming behavior: overall, 10.9% of the students with the average age of 14.9 years reported occasional (1-3 times per year) forms of self-harming behavior; 8% even reported one or more suicide attempts.
BPD is also characterized by very high comorbidity rates, especially with affective disorders (Tadic et al., 2009; Zanarini et al., 1998). In addition, many BPD patients temporarily exhibit paranoid beliefs or hallucinatory symptoms. In a review of BPD and psychosis, Barnow et al. (2010) reported that up to 75% of BPD patients suffer from dissociative experiences and paranoid beliefs. Up to 20-50% of BPD patients show psychotic symptoms (Schröder, Fisher & Schäfer, 2013).

Therapeutic options for BPD

Therapeutic efforts and research concerning BPD have been significantly intensified, especially in the past ten years (Jacob, Allemann, Schornstein & Lieb, 2009). However, numerous therapists still refuse to work with this group of patients due to assumptions that they are difficult to treat (Jobst, Hörz, Birkhofer, Martius & Rentrop, 2009). Furthermore, therapy is associated with high costs: in Germany, for example, approximately 4 billion Euros per year are spent on treatment of those with BPD – approximately 15-20% of the total cost of in-patient psychiatric treatment (Bohus and Kröger, 2011).

Despite the previously mentioned difficulties, psychotherapy is considered the method of choice for BPD (Remmel and Bohus, 2006). At the present time, several evidence-based and manualized interventions exist (for an overview, see Barnicot et al., 2012; Zanarini, 2009), including dialectical behavior therapy (DBT; Linehan, 1993), mentalization-based therapy (MBT; Bateman and Fonagy, 2004), schema therapy (Young, Klosko & Weishaar, 2003), transference-focused psychotherapy (TFP; Kernberg, 1984), and systems training for emotional predictability and problem solving (STEPPS; Blum, Bartels, St. John & Pfohl, 2002).

For a comprehensive overview on psychotherapeutic impact factors for BPD, please refer to the article by Barnicot et al. (2012).

The most widely used intervention is DBT, which also provides the most evidence of efficacy. In a meta-analysis by Kröger and Kosfelder (2010) which included 10 studies with a total of 295 patients, DBT's efficacy was rated with a corrected average effect size of $d = 0.62$, which means a medium effect; the dropout rate was approximately one third of the patients (Kröger and Kosfelder, 2010).
The available forms of psychotherapy provide relief of symptoms for a large proportion of the patients; however, they often do not lead to remission. Many patients with partial BPD continue to suffer from significant psychological strain, poor quality of life, and impairments in psychosocial functioning (Barnow et al., 2006; Reed, Fitzmaurice & Zanarini, 2012; Zanarini, Frankenburg, Bradford Reich & Fitzmaurice, 2010).

Metacognitive training for BPD-patients (B-MCT)

In light of the described suboptimal therapy response of many patients, the medium effect size of psychotherapy, and the high dropout rates (Sollberger and Walter, 2010; Zanarini, 2009), it has become evident that there is a need for cost-effective and low-threshold measures to complement the various treatment options. Furthermore, it appears necessary for therapy to focus on some of the newly uncovered BPD-specific dysfunctional thinking styles (e.g., overconfidence in emotion recognition), as well as already well-examined cognitive biases (e.g., dichotomous thinking).

Our team generated this eclectic add-on concept, which is attributable to cognitive behavioral therapy, in the form of the B-MCT. Based on our own preliminary studies (Moritz et al., 2011; Schilling et al., 2012) and further replicated findings from the field of basic cognitive research, the training units of the MCT for patients with psychosis (Moritz, Vitzthum et al., 2010b) and the MCT for depression were adjusted to the disorder-specific (problematic) thought patterns of BPD patients. Various new examples were added.

Further information on theoretical background, structure and implementation as well as the specific contents of the training modules will be presented in the following.

We wish you every success in conducting the training!

Theoretical background

In addition to the consideration of neuropsychological functions that focus on basal areas such as memory (for reviews see e.g., Dell'Osso, Berlin, Serati & Altamura, 2010; LeGris and van Reekum, 2006), BPD research is increasingly devoted to specific *cognitive biases* that relate to the altered selection and processing of information. Research on BPD-specific thought distortions is closely related to the schema concept (see following section). Recently, research has been influenced by experimental studies of thought distortions relating to psychosis (Bell, Halligan & Ellis, 2006; Freeman, 2007; Moritz et al., 2011; Moritz, Vitzthum et al., 2010a). Paradigms from the field of *theory of mind* (Domes, Schulze & Herpertz, 2009) and lately also *overconfidence* (Schilling et al., 2012) or *attribution* (Moritz et al., 2011) have proven useful for our understanding of BPD. Parts of the previous studies will be summarized subsequently.

For a detailed survey of cognitive processes related to BPD, please refer to the recent review by Baer et al. (2012).

Schema-based thought distortions: splitting and dichotomous thinking

The cognitive theory of personality disorders (Beck, Freeman & Davis, 2004) postulates that leading symptoms, such as affect dysregulation and BPD-specific interpersonal problems, are possibly caused and sustained by dysfunctional cognitive schemata (Domes et al., 2009). Schemata are regarded as basic processing units and can be triggered very easily (Barnow, Stopsack, Grabe, Meinke & Spitzer, 2009). Once they are activated, they dominate information processing and can lead to a distorted perception of the environment (Beck et al., 2004). Schemata manifest in so-called basic assumptions that influence an individual's self-evaluation and the evaluation of others and the environment. According to the cognitive model of BPD, three distorted basic assumptions dominate in BPD patients: 1. "I am inherently bad and unacceptable,"; 2. "I am powerless and vulnerable,"; 3. "The world is (and others are) dangerous and hostile" (Pretzer, 1990). These basic assumptions in combination are thought to lead to contradictory experiences in affected persons (Beck et al., 2004; Linehan, 1993; Pretzer, 1990; Renneberg and Seehausen, 2010). For instance, due to their sensed powerlessness and vulnerability (basic assumption 2), support from others in a world perceived as dangerous (basic assumption 3) seems essential. Concurrently, they are unable to trust other people. This contradiction presumably contributes, among other things, to unstable mood and problems with interpersonal relationships for patients with BPD; they may, for example, oscillate between anxious clinging to others and pushing them away (Bhar, Brown & Beck, 2008).
Furthermore, as a result of these conflicting basic assumptions, people with BPD presumably live in a state of excessive watchfulness, also known as hypervigilance (Sieswerda, Arntz, Mertens & Vertommen, 2007). This hypervigilance for social stimuli, which signal threat or rejection, has been empirically demonstrated (Arntz, Appels & Sieswerda, 2000; Sieswerda, Arntz, Mertens et al., 2007).

For example, an *emotional stroop test* revealed a higher color naming response latency when the presented words had a threatening valence (Arntz et al., 2000). In addition, it has been shown that successful psychotherapy also reduces hypervigilance in BPD (Sieswerda, Arntz & Kindt, 2007). In addition, several studies (e.g., Barnow et al., 2009) have shown that people with BPD attribute more negative and aggressive characteristics to others than do healthy probands, which could again contribute to the threatening experience.
In addition to these basic assumptions, the defense mechanism called splitting, described by Otto Kernberg (1967), is found very frequently: people with BPD seem to judge experiences not based on a continuum, but in extreme and mutually exclusive categories, such as "good" vs. "bad" (Dulz and Schneider, 2004). This leads to extreme interpretations of events or other persons and, as a result, to extreme emotional reactions. Moreover, due to splitting, the positive and negative aspects of a person cannot be integrated into a whole, which can result in the alternating idealization of and disillusionment with other people (Kernberg, 1967).
In cognitive theories, the term "dichotomous thinking" (or "black-and-white thinking") describes a quite similar process as splitting, but one significant difference from dichotomous thinking is multidimensionality (i.e., bipolarity). Accordingly, BPD patients judge other people in an extreme

manner, however they do so with mixed valences; that is, they make (extreme) positive as well as negative attributions (Arntz and Veen, 2001; Napolitano and McKay, 2007).

In addition to negative basic assumptions and dichotomous thinking, other adverse thinking patterns can be found in BPD, which will be summarized below. They will form the basis for the 8 training modules.

Because certain mental processes (e.g., attributions) are rarely taken into account in existing treatment concepts, their theoretical background will be described more extensively. On the other hand, the description of contents that are widely discussed in the literature, such as self-esteem in BPD, will be kept brief (with references to respective literature).

Distorted attribution (module 1)

When experiencing significant events, people first ask themselves what caused the event, and then they attribute cause (Heider, 1977). Attributional patterns have been thoroughly analyzed for both depression and schizophrenia. In an early article, Westen (1991) provided a detailed description of a BPD-specific attributional style that will be briefly presented below.

Westen identifies egocentrism as first characteristic of attributional style in BPD. Early studies with projection tests revealed that people with BPD tend to be very egocentric in their attributions. Egocentrism means, according to Piaget (1951), a lack of differentiation in perspectives of self and other, or a sort of "embeddedness in one's own point of view"(Looft, 1972). Regarding attributional style, "egocentrism" manifests in three different ways (according to Westen, 1991): First, in BPD, attributions are more person-related, and patients regard themselves as the predominant cause of events. Furthermore, due to certain defense mechanisms such as projection, BPD patients are unable to integrate their self-perception or perception of others into a whole. As a result, they often attribute their own motives to other persons and vice versa. Additionally, when putting too much mental focus on their own (hurt) feelings, attributional processes do not even become activated, which means that the affected persons are unable to accept any, although sometimes absolutely plausible, explanation.

Westen (1991) also cited a tendency to attribute ***malevolence*** ("to place blame for misfortune on external, malevolent forces", p.217) as a second characteristic of BPD patients' attributional style. This could be connected to a negative bias regarding empathy and emotion recognition (cf. section about ***Theory of mind***).

Based on clinical observation, the third characteristic of attributional patterns in BPD represents the ***inaccuracy*** of attributions made by BPD patients. As a result, causal explanations are often illogical and imprecise (Silk, Lohr, Westen & Goodrich, 1989). The social learning history supposedly becomes important here: If their parents' actions were often perceived as capricious and hard to explain, the affected person's development of the ability to make differentiated attributions in childhood would be hampered (Westen, Ludolph, Block, Wixom & Wiss, 1990).

Westen cited affect centering as a final characteristic of attributional style. Attributional processes seem to be polarized into "good" and "bad" by means of the respective affect, that is, attributions are made from "good" motives to "good" persons and from "bad" motives to "bad" persons. In addition, relatively harmless events are catastrophized as only a univalent representation can be activated (e.g., "He is going to leave me, because I am worthless."). However, unlike people with depression, BPD patients make such global attributions relating to themselves and others also for positive events.

In one of our own studies (Moritz et al., 2011; Schilling, Moritz, Köther, Wingenfeld & Spitzer, 2010, November), using a revised version of the ***Internal, Personal and Situational Attributions Questionnaire*** (IPSAQ-R; Kinderman and Bentall, 1996), we demonstrated an altered attributional style of people with BPD. The results are in accord with Westen's reports: The study showed that BPD patients have a tendency to allocate a larger proportion (in %) of the causation of positive ***and*** of negative events to themselves than do healthy controls. Conversely, patients attributed a significantly smaller causal proportion of positive events to others and they

attributed hardly any causation to the situation. The excessive internalization of success and failure may argue for a sort of egocentrism as already described by Westen (1991, "The self is viewed as the causal center of the social universe." p. 217). Therefore, our result demonstrating that BPD patients make more monocausal attributions (Moritz et al., 2011) is in accordance with these assumptions.

Rumination and catastrophization (module 2)

Rumination seems to be a central symptom in BPD, marking the severity and emergence of dysfunctional behavior patterns. Accordingly, the ***Emotional Cascade Model*** (ECM; Selby and Joiner, 2009) postulates that a negative affect initially triggers rumination. Rumination then leads to a further increase of negative emotion, which in turn leads to increased rumination. Eventually, this vicious circle creates an extremely unpleasant emotional state that may end in self-damaging behavior (e.g., self-harm, substance abuse). This then serves to draw attention away from the unpleasant emotional state and the ruminative thoughts. The validity of the ECM has been demonstrated empirically. In a large student sample, Selby et al. (2009) found a significant relationship between the severity of BPD symptoms and rumination. Moreover, rumination mediated the relation between the symptoms and dysfunctional behavioral patterns (e.g., binge eating). Another study (Sauer and Baer, 2012) found that ruminating for just a few minutes had a significant effect on mood and stress tolerance in BPD patients. Here, depressive rumination is not sufficiently explained by existent comorbid depressive symptoms (Abela, Payne & Moussaly, 2003). Therefore, Baer et al. (2012) differentiate between depressive rumination and rumination in association with the emotion anger. Anger presumably occurs in BPD patients especially in connection with rumination and is presumed to be a stronger predictor of BPD-specific symptoms than is depressive rumination (Baer und Sauer, 2011).
In summary, previous studies support the assumption that for BPD patients, rumination can cause emotional intensity and unpleasant emotional states to increase. Anger and aggression, in particular, may be reinforced; furthermore, dysfunctional behavior may occur as a consequence of rumination. In contrast to depression, rumination in BPD seems to focus on anger and interpersonal worries.

According to many authors, another central thought distortion of BPD patients is catastrophizing, that is, focusing on possible negative events in the future (Selby and Joiner, 2009). In many cases, however, catastrophizing may also be interpreted as an epiphenomenon of rumination or dichotomous thinking: The affected person is unable to balance different influences and prospects, and then "doom-mongers." The preoccupation with emotionally negative thoughts secondarily impairs other functional areas such as memory (Domes et al., 2006). Related to presumed abandonment, catastrophizing may also play an important role in behaviors such as accusing one's partner of being unfaithful without having sufficient evidence (Selby and Joiner, 2009). Above all, in an extreme form, this thought process may promote paranoid beliefs or delusions.

Theory of mind (empathizing) and over-confidence in judgments (modules 3 and 5)

First, ***Theory of Mind*** (ToM) or social-cognitive functions such as empathy and affect recognition have been examined in people with autism and schizophrenia. Since about the 1990s emotional paradigms are increasingly being regarded in BPD research as well, as interpersonal problems can, among others, be ascribed to altered social-cognitive processes.
In paradigms of emotion recognition, borderline patients generally perform as well as healthy probands (for a review, see Domes et al., 2009). However, studies have also found that patients affected by BPD have an increased tendency to attribute negative emotions such as anger or disgust to neutral facial expressions (Domes et al., 2008; Unoka, Fogd, Fuzy & Csukly, 2011). This negatively distorted perception is consistent with the third basic assumption ("The world is dangerous and hostile") of Pretzer's (1990) cognitive model (mentioned above) and may contribute to an increased threat- or hostility experience in people with BPD.
In addition, one of our own studies has shown an abnormal confidence in the emotion recognition of BPD patients (Schilling et al., 2012). Here, the examination of the ToM was carried out using a revised version of the ***Reading Mind in the Eyes***-Test (Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001). In terms of error rate, BPD patients and healthy persons had approximately

equivalent results. In this study, participants' confidence in their answers was also investigated for the first time: Compared to the healthy group, BPD patients often stated they were 100% certain of their interpretations of the displayed facial expressions. Given the ambiguity of the stimuli used, these responses may be regarded as imprudent and potentially momentous given the confusions and mistakes of everyday life. A similarly excessive confidence is also well documented in patients with psychosis (e.g., Moritz, Woodward & Rodriguez-Raecke, 2006). Moreover, it has been established in other studies of social cognition (Arntz & Veen, 2001; Barnow et al., 2009) that in comparison with healthy controls, BPD patients more often attribute negative and aggressive features to other people (e.g. measured using short film clips). This, in turn, may increase suspiciousness and perceived threat. Additionally, BPD patients often show a strong rejection sensitivity, which has been empirically confirmed (Dulz, Herpertz, Kernberg & Sachsse, 2011; Staebler, Helbing, Rosenbach & Renneberg, 2011).
Varying results have been found using other experimental paradigms for the examination of the theory of mind such as the *cartoon task* (Ghiassi et al., 2010), the *faux pas task* (Harari et al., 2010), and the *Movie for the Assessment of Social Cognition - MASC* (Preißler et al, 2010). In the study by Preißler et al. (2010), BPD patients were uncompromised on the *Reading Mind in the Eyes* test; however, in the more complex MASC by Dziobek et al., (2006), patients demonstrated impairments in recognizing emotions, thoughts, and intentions compared to healthy people. Here, a comorbid posttraumatic stress disorder, intrusions, and sexual trauma were negative predictors of social and cognitive skills. In the Ghiassi et al. (2010) study, a negative correlation between the parental affection's quality (e.g., lack of emotional reliability, rejection or overprotection) and the mentalization ability became evident (for a description of the *mentalization* concept, see e.g., Bateman and Fonagy, 2004). Furthermore, Harari et al. (2010) reported higher affective empathy and lower cognitive empathy in BPD patients, whereas these were opposite in healthy control subjects.

Further recent studies indicate a sort of *hypermentalization* or hypersensitivity in people with BPD (Schulze et al., in press; Frick et al., 2012, Franzen et al., 2011; Sharp et al., 2011). As already explained in the attributional style section, BPD patients may have difficulties seeing things from the perspective of others, especially when strong emotions are involved. This may be connected to the described "egocentric" attributional style, as well as the embeddedness in their own perceptions.
For a recent review on social cognition in BPD, please also refer to Roepke et al. (2013).

Discovering the positive (module 4)

BPD patients seem to have a tendency to focus on negative aspects in their environment (e.g., during emotion recognition), and to remember this negative information rather than positive aspects (Baer et al., 2012; Dulz et al., 2011; Jorgensen et al., 2012). As a result, the B-MCT is designed to teach patients to turn their attention back to positive aspects in the environment, or rather not lose sight of these. Moreover, this module also refers to the search for meaning (cf. Frankl, 2006) as well as the concept of "radical acceptance" of dialectical behavior therapy (DBT; Linehan, 1993). Accordingly, it is not always possible for people to change difficult situations themselves. It can be helpful in handling and processing situations to accept them (for a detailed description of the radical acceptance concept, please refer to, e.g., Bohus and Wolf, 2009). In addition, crises and difficult situations always provide the opportunity for positive change and may be regarded as challenges. Besides altered perception, patients' strengths and abilities should be recognized, named, and promoted in line with resource rather than deficit orientation (see, e.g., Fiedler and Renneberg, 2007).
As already mentioned at the outset, BPD patients often exhibit contradictory basic assumptions and thoughts that contribute to an unpleasant emotional state and can lead to conflicting intentions (for a detailed description as well as a tool for measuring cognitive antagonisms, see Renneberg et al., 2005). These inconsistencies in thinking and the possible consequences in terms of action and emotion will be explained in the training, with reference to the theory of cognitive dissonance according to Festinger (1978).

Self-esteem (module 6)

In one of our own preliminary studies and in comparison to healthy people and schizophrenia patients, people with BPD had the lowest self-esteem on the Rosenberg scale (RSE; Rosenberg, 1965), a tool for self-esteem assessment. As this topic is highly relevant for BPD, the DBT provides a module that is especially designed for this purpose (see also Jacob & Potreck-Rose, 2007; Jacob, Richter, Lammers, Bohus & Lieb, 2006). In our training we also dedicated one session to this subject in which the focus is on cognitive processing of information that can impact self-esteem. Information that the participants are possibly familiar with from the DBT ought to be taken up and repeated at this point.

Jumping to conclusions (module 7)

BPD is characterized by impulsivity (diagnostic criterion 4, DSM-IV). Patients often tend to act imprudently, which they may regret afterwards, leading them to develop feelings of guilt or self degradation. Impulsivity can cause conflicts, especially in interpersonal contacts. A thought distortion that is well documented for people with schizophrenia (cf. e.g. Fine, Gardner, Craigie & Gold, 2007; Lincoln, Ziegler, Mehl & Rief, 2010) might be linked to impulsivity: the so-called jumping to conclusions bias (JTC). JTC is defined as the tendency to make judgments based on an insufficient amount of information. In the already mentioned study by our working group, this bias was investigated on BPD patients for the first time, using a modification of the beads task by Garety, Hemsley & Wessely (1991). Compared to healthy people, BPD patients were more likely to make hasty conclusions, however this occurred less frequently than in schizophrenic patients. Conversely, in the self-evaluation (*Cognitive Biases Questionnaire for Psychosis* - CBQP; Schwannauer et al., 2010), a clear tendency towards JTC could be found in BPD patients that was even more marked than for schizophrenia patients.

Mood (module 8)

Borderline personality disorder is characterized by high comorbidity rates with affective disorders. Accordingly, more than half of the patients also suffer from depression (Tadić et al., 2009; Zanarini et al., 1998). In addition, patients with BPD tend to place excessively high demands on themselves (Jacob et al., 2006), which in turn can have a negative impact on their mood and self-esteem. The module discusses thought distortions that seem to go along with the development and maintenance of depression. This includes "all-or-nothing" simplifications (e.g., "Because I made a mistake at work, I am a total loser"), according to the cognitive behavioral therapeutic concept by Aaron Beck (1979), as well as "exaggerated generalizations" (e.g., "If I fail once, I am always going to fail") of situations (for empirical evidence of exaggerated generalization see, e.g., Carver, 1998). Adverse thought patterns should be brought to awareness and be replaced by more positive / realistic cognitions.
For a more detailed description of depression-specific thought distortions, please also refer to the D-MCT manual (Jelinek et al., 2011).

Current findings on efficacy

Study findings on the B-MCT

The basic feasibility of the B-MCT and its acceptance by its users were tested in a preliminary study at the end of 2010. A total of 57 patients with BPD were recruited from the ward for personality disorders at the department of psychiatry and psychotherapy, University Medical Center Hamburg-Eppendorf. Training sessions were conducted once a week (in groups of up to eight participants; each session of 60 minutes duration). To obtain initial feedback regarding the efficacy of the training, we administered the short version of the borderline symptom list (BSL-23; Bohus et al., 2009), which records the severity of the symptoms, before and after the participation. In addition, we recorded sociodemographic variables and medication.

The evaluation clearly showed a large effect of treatment on symptoms as detected by the BSL-23 (F = 4.73; p = .039, $\eta^2_{partial}$ = .154). The patients were also given the opportunity to submit suggestions for content improvement. We investigated possible overlap with other interventions (e.g., DBT) with the help of questionnaires. It became evident that the participants largely estimated the extent of overlap with other interventions including DBT to be very low. However, we could not establish a control group design because of a lack of resources.

Due to methodological deficiencies, the results should be regarded as preliminary and must be substantiated by ongoing studies. The training material has been extensively revised and extended based on our experience with the preliminary study.

Currently (as of August 2013), two controlled randomized studies are being carried out (at the University Medical Center Hamburg-Eppendorf and at the Asklepios Medical Center Nord-Wandsbek) with the modified B-MCT for efficacy testing purposes (in comparison with a sports group and a relaxation group). A further objective of the studies is to find out more about BPD patients' way of thinking.

Up-to-date study findings are published and frequently updated on our website (**www.uke.de/borderline**).

For a summary presentation of previous efficacy surveys of the MCT for patients with psychosis, please refer to Moritz, Vitzthum et al. (2010a).

Structure and content

Before presenting the modules in detail, we would like to address some organizational aspects. The B-MCT is a cognitive behavioral therapeutic group training program. Because the material for metacognitive training is largely self-explanatory, and to allow the program to be modified for individual patients, we sought to keep the manual relatively short. However, studying the following sections in no way replaces a thorough examination of the theoretical concepts.
The metacognitive training program for patients with BPD includes the following materials (**see www.uke.de/borderline**):

- Eight PowerPoint® presentations in pdf format
- Manual
- Eight following up leaflets
- Red and yellow cards
- Group rules

Number of modules and frequency of sessions

The program consists of a total of eight modules. Assigning two modules per week proved effective.

Duration of a session

Each session lasts between 45 and 60 minutes.

Number of participants

The group size should range between 3 and 10 patients.

Opening of each session

As the group is open and new participants may join at any point, it is advisable to arrange a brief introductory round at the beginning of the session. Already experienced participants then explain the aim and the specifics of the training to newcomers (see "Introducing the program to new participants"). In addition, it is appropriate at the beginning to ask whether anyone has questions concerning the last session; or the trainer may ask what contents the participants implemented already.

End of each session

Even if not all exercises have been completed by the end of the session, the trainer should skip forward to the final slides, which summarize the learning objectives. **Ask the participants what they have taken away from the session and what strategies they would like to try out.** Finally, leaflets containing a brief summary of the treated contents are handed out. In addition, each new participant receives a yellow and a red card (roughly the size of a business card) at the end of their first session, along with instructions on how to use them.

The yellow card raises three fundamental questions, which the participants should consult when necessary when, for example, they feel offended or insulted:

1) What is the evidence?

2) Are there alternative views?

3) Even if I'm right – am I overreacting?

These questions are designed to prompt participants to reconsider the available evidence before drawing hasty, false, and perhaps consequential conclusions. The red card is an emergency card. The patients are encouraged to write down telephone numbers of persons and institutions that can be contacted when help is needed. Patients should always carry both cards with them (e.g., in their wallet).

Arrangement of the room

A quiet room with sufficient chairs and equipment to project the slides onto a white wall or screen are required.

Necessary equipment

A projector and a laptop or PC equipped with Adobe Acrobat reader® (free download) are required. The slides should be displayed in the *full screen* mode of Adobe Acrobat.

Experienced professional trainers

The trainers are preferably psychologists or psychiatrists who have experience with BPD patients. Psychiatric nurses and occupational therapists may also be eligible if well instructed. Ideally, trainers should have previous experience moderating group sessions. Furthermore, they should be familiar with dissociation that can occur with BPD patients.

General advice and dealing with difficult situations during sessions

Despite the very positive feedback the training receives from the patients in our clinic, difficult situations may emerge. In the following, we provide recommendations on how to deal constructively with these situations.

It is counter-productive to overreact to skepticism on the part of some patients (especially during the first session). However, disruptive behavior should be prevented. The trainer may at this point refer to the group rules (see p. 17).
As the examples in each module are meant to serve mainly as encouragements, it is important to keep incorporating participants' own examples into the training. This illustrates the program's relevance to everyday life (when showing the "Why do we do this?" slide, ask how the participants can relate to the descriptions). This makes it easier for most of the patients to draw a link to themselves and their daily lives. Moreover, it can be helpful to pick up examples from previous sessions. In some cases it may also be useful to refer to following training sessions that will deal with certain themes more thoroughly. **Actively involve the patients, especially for the slides with questions („???") and let the group discuss the theme or exercise.**
If patients criticize the practical advice as too difficult for them to implement, tell them that this is a "training" program. For example, use the following metaphor: Our brain is comparable to a muscle. Like a muscle, it must first be trained, and unfortunately, this requires time. Another useful metaphor: good roads vs. unfamiliar trails. The good road stands for familiar (adverse) cognitive and behavioral patterns. This route has been consistently used in the past as it represents an easy route where you can drive comfortably. The unfamiliar trails stand for new thoughts and behaviors that have to be used a couple of times before they are as easily accessible as the good road. This requires time, patience, and a certain willingness to make an effort. But eventually, these new unfamiliar trails (skills) can become habits. All in all, patients should be encouraged to try out something new, and to test how it can change their emotional state or relationships. In addition, to increase motivation, participants should be consistently reminded of their achievements. Moreover, the training program represents only one single therapeutic modality; thus, individually relevant contents should be further dealt with in individual therapy. Concurrent participation in the DBT or a skills group is essential.

Dealing with sensitivity to rejection

BPD patients often exhibit significant fears concerning presumed or actually experienced social rejection. First, their attention is especially focused on cues that indicate social rejection or social exclusion. At the same time, they also seem to react more vehemently to such cues than healthy people do. Moreover, BPD patients experience emotional rejection by others in experiments that depict social interaction (e.g. Staebler, Helbing, Rosenbach & Renneberg, 2011), although objectively they have not been excluded at all. Therefore, when conducting the B-MCT, it is especially important to observe whether the way the contents of the modules are conveyed by the trainer through language, gestures, and behavior potentially pathologizes the participants. This does not mean that the trainer must "take every word with a grain of salt"; however, due to the patients' increased reactivity, it is reasonable to reflect regularly on whether the tone that is aspired to, namely the "normalization," has not been lost in the routine. Thus, it may also be helpful to introduce some everyday examples or mechanisms to the group. Concepts like "It is human to get caught in thought traps, but it can often lead to negative consequences" can be used when discussing certain thought distortions. Avoiding the use of inflammatory words such as "disorder" or "illness" where they are not required can help prevent triggering the participants' feelings of rejection. This helps ensure that there is less resistance for trainers to overcome when introducing content that is explicitly created to draw the connection between the discussed thought distortions and borderline disorder (e.g., slides: "Why do we do this?").

Introducing the program to new participants

Metacognitive training is an open program. Patients can enter at any point during the cycle. New participants should be informed what the program is about – preferably by experienced participants, with the help of the trainer. Participants should be introduced to the term ***metacognition: meta*** is Greek for about and ***cognition*** refers to higher mental processes such as attention, memory, and problem-solving. Thus metacognition means thinking about the way we think, or thinking about our own thinking. To support these explanations for new participants, use the examples in the first general introductory slides (titled "One event – many possible emotions") that precede each module. **Only present the general introductory slides if there are new participants.** The examples illustrate the way thoughts can have an impact on feelings and behavior, and they are different in each of the eight modules. For these slides it is important to stress that the B-MCT is a therapeutic unit that targets thoughts. At the heart of the program are thinking styles that, according to present knowledge, are involved in the development and maintenance of BPD, and it should be emphasized that not all patients will display all of these thinking biases at the same time. Participants should be told that the contents of some training sessions may be more individually relevant than others. It should also be made clear to them that adverse thought patterns are occasionally found in everyone, not only BPD patients, but generally not with the same intensity. When introducing each of the training units, make clear how extremely dysfunctional thinking patterns can lead to problems in everyday life. The relationship between the learning objectives and disorders in daily life should be pointed out regularly. For this purpose, each module includes several slides emphasizing their practical relevance (slides: "Why do we do this?" and "Influence on behavior"). The primary goal of the training program is the transfer of the learning objectives to daily life.

Since patients often suffer from great emotional strain, distress tolerance skills from Linehan's DBT (1993) may also be discussed at the beginning. This applies in particular when participants concurrently receive DBT or attend a skills group and are familiar with the concept. It should be made clear that being under great emotional distress makes it very difficult to influence our own thoughts. Therefore, the patients should practice the contents they learned in the sessions during a low to medium emotional distress level (prevention).

Inclusion and exclusion criteria

The training was designed for patients with the diagnosis of borderline personality disorder/emotionally unstable personality disorder (also impulsive type). Participation is also advisable for patients who only partly meet the criteria. MCT for patients with psychosis is the

recommended option for patients who currently or in the past have displayed psychotic symptoms, especially delusions (http://www.uke.de/mct).

Atmosphere

1) Although the training program is highly structured, **patients should always have enough time to exchange their views,** as gaining self-awareness and self-reference are essential to the ability to transfer the skills to everyday life. Completing all exercises within one session is not required.
2) Participants should not be forced to engage, and the trainer should act in a non-patronizing/supportive manner.
3) When problematic communication patterns are observed, the trainer should point to the group rules (see next section), which among other things include the basic rules of interpersonal engagement (e.g., listen to other people, show respect for different opinions). Criticism of group members should be discouraged.
4) Create a friendly and preferably humorous atmosphere. The exercises should be entertaining and interactive.

Group rules

The material includes a slide on which the ten group rules of the training program are displayed. It can be printed out in poster format and hung up in the room for all to see. Whenever new members are introduced to the group, they should be advised of the rules.

In the following, we outline the target domains and basic tasks for each module. This is followed by the objective of the module as well as general and specific recommendations for administration.

Module 1: Attribution

Target domain

Distortions of attributional style, especially a one-sided attributional style in which the cause of most events is attributed to oneself.

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.
At the beginning (slides 15-27), the term "attribution" is explained to the participants with the help of examples. On slide 19, the participants are asked to name different causes of the described situation ("A friend keeps you waiting."). This is followed by a division into three basic cause groups: oneself, others, and circumstances. Under the terms of this grouping, different causes are to be found for the situation described on slide 23 ("You are discharged from the hospital without feeling any better."). On slide 26, the participants are encouraged to find balanced answers that preferably include all three of the basic cause groups.
The following slides (28–41) familiarize the participants with extreme attributional distortions and their possible consequences (e.g., constant shifting of blame onto other people often leads to interpersonal tension). The group is asked to discuss balanced attributions for a positive and a negative situation.
Accordingly (slides 44-60), the trainer and participants compile the effects, both short-term and long-term, of always relating other people's behavior to oneself. Strategies are imparted that help lessen such very personal attributions (e.g., perspective taking). A pie chart (slides 60-61) illustrates that it can be worthwhile to open up to alternative explanations, and to not always allocate "the biggest piece of the pie" to oneself. Visualizing unfavorable attributions with the help of the chart can help them see this more clearly.
The following description of the fundamental attribution error (slides 62-68) also shows that the impact of the situation (circumstances/chance) is often overlooked or underestimated.
As explained previously, the participants are meant to debate possible situational factors first when regarding negative events. The purpose of this unit's goal is never to find definitive answers; rather, its aim is to consider various causal possibilities. Even when dealing with events that seem to only allow for one plausible explanation (e.g., "Someone tells you that you look tired"; possible explanation: "She is not a real friend and wants to offend me"), other explanations should be taken into account (e.g., "The person wants to express empathy" or "I actually do feel unwell").
After the "learning objectives" slides (74-77), this module explains how feelings can be falsely attributed also (slides 78-87; study of Dutton & Aron, 1974).

Material

The exercises come from the MCT for patients with psychosis and are analogous to items of the *Internal, Personal, Situational Attribution Questionnaire* (IPSAQ, Kinderman and Bentall, 1997). At the end of the presentation we acknowledge the contributions of the artists and photographers whose illustrations and photos we used.

Objective of the module

In the exercises, the participants are asked to go through a possible progression of events, and to generate explanations by considering three different sources: oneself, other people, and situational factors. Different possibilities should be contemplated, which helps to weaken dysfunctional attribution patterns (e.g., "It is always my fault" vs. "It is always the other's fault"). The primary focus of this module is to point out that multiple factors can lead to one incident or scenario. As pointed out, this holds true even for situations where only one explanation seems possible at first.

General advice

The responses cited serve as examples and not as definitive solutions. The opinion of group members may well differ from these. The trainer may use slides 27-33 (taking compliments) to refer to the module "Discovering the positive," in which this topic is dealt with more comprehensively. In the exercise part of the module (from slide 69 on), the trainer may create further examples or ask participants to do so. However, the trainer should ensure that the discussions do not become too person-specific. There are plenty of exercises, and it is therefore important to avoid boring participants with long reflections on a single task.
Once several alternatives have been put forward, the group may select the most plausible cause together with the trainer. Possible consequences of the interpretations should be estimated.
When explaining the "fundamental attribution error," it should be made clear to the participants that it describes a general human disposition and is not BPD-specific.

Specific advice (examples)

When discussing negative scenarios, let the participants begin with 'circumstances.' When discussing positive ones, let them start with 'myself.' Please discuss the plausibility of each explanation with the patients.

Scenario	Attribution		
	myself	others	circumstances/coincidence
1. Looking badly	I do feel bad. I am ill.	This person says that to many people, just a phrase. This person wants to insult me. This person wants to express concern.	Nearly everybody at my workplace was on holiday, apart from me. Maybe in direct comparison I do not look as revived as them.
2. Dinner	I did him a favor (e.g., I helped him with his work).	He is very generous. He wants to apologize for something.	He won the lottery (unlikely). It's my birthday.
3. Baby cries	I am unfamiliar with handling babies and held it the wrong way.	The baby was not fed on time.	Babies sometimes just cry for no reason. The baby got stung by a wasp (unlikely).
4. Refusal to help	I did not help her either when she asked me.	She generally does not help with these kind of tasks. She believes that I can manage on my own.	She is very busy at the moment.

Module 2: Rumination and Catastrophization

Target domain

Rumination; catastrophic thinking

Content of the module

Only present the general introductory slides (slide 1-12) that precede each module if there are new participants. Otherwise you can start at slide 13.

Start by discussing the meaning and definition of the term "rumination" with the participants (slide 14). In addition, discuss the topics that ruminative thoughts typically revolve around mainly interpersonal topics as well as negative feelings that come with them (slides 16-22). From slide 23 on, specific characteristics of rumination will be clarified as distinguished from reflection and problem solving. Dysfunctional meta-beliefs about rumination (e.g., "To ruminate helps me to solve problems.") are to be questioned and modified. Furthermore, convey that during rumination, thoughts are often very general and vague; patients rather ask "why" instead of "how" or "what" (e.g., "Why did this happen to me of all people?," instead of "What happened exactly? How can I change the situation?").

Starting with slide 37, we introduce exercises to counter rumination. It is important to stress that different strategies should be tried out, as the exercises do not work equally well for everyone. Furthermore, before presenting the anti-rumination exercises, ask the participants whether they have already found strategies that work for them. The body exercise on slide 40 should be performed actively with the participants to demonstrate that it is not possible to ruminate at the same time. It is important to extend the exercise successively.

If the trainer knows of other exercises against rumination, they may, of course, be added (e.g., it can be helpful to write down ruminative thoughts to review them at a later date; or introduce deep-breathing exercises).

The second part of the module (slide 45) deals with "catastrophic thinking". Mostly, the patients are very familiar with this thought pattern. Often, patients will refer to the imagined abandonment by their partner. The objective is to convey to the participants that instead of every "negative prediction," an alternative, less catastrophic prediction is possible, and that they can escape catastrophic thinking. In addition, show the participants a false (clearly exaggerated) probability estimation that is based on catastrophization (slides 49-51). Afterwards (slides 52-62), collect and discuss possible effects of "fortune-telling" with the participants (e.g., self-fulfilling prophecies).

A part of the exercise is introduced at the end of the module (slide 63) to exemplify the so-called "confirmation bias." Three different images are presented (flood, storm, fire). The patients are asked to supply the corresponding generic term (nature) by proposing further events that would fit in the presumed category (e.g., volcanic eruption). The therapist responds with yes or no, depending on whether the objects match the generic term or not. Because the shown images suggest the (false) term "natural disaster," most people only propose things that match this category. Hardly anyone puts forward alternative hypotheses or proposes objects that do not match the presumably correct term, to verify the presumption. This exercise demonstrates that we often ignore sources of information that are not in accord with our established opinion or expectation (e.g., newspapers, certain TV shows, books). When conducting the exercise with a larger group, someone may already know the exercise or guess the correct answer. Do not confirm this answer right away but gather other proposals.

Material

The content was generated using the D-MCT per Jelinek et al. (2011).

Objective of the module

The objective is to clarify that ruminating does not help to solve problems. Positive beliefs about rumination should be questioned, if applicable, as they can promote the process of rumination (cf.

Wells, 2009). The discussed tasks are meant to help participants to escape the cycle of ruminating and catastrophizing.

General advice

The vicious circle of rumination, negative emotions, and dysfunctional behavior (see theory, p. 8) should be explained to the participants, using slide 22, for example (emotions that go along with rumination). Other exercises to counter rumination can of course be added where appropriate.

Specific advice (examples)

In this module, it is especially important to create an exchange among the participants. One method proven in use is to first ask them what techniques help them personally and what their previous experience was with the exercises. Moreover, it is advisable to refer to examples from former participants and mention them as further tips against rumination (e.g., "One patient reported that at such times he finds it helpful to solve a Sudoku puzzle. Can you imagine trying that out?").

Module 3: Empathizing I

Target domain

Theory of mind; increased certainty of judgment and an increased perception of negative emotions in other people (negative-bias); hypermentalizing

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.
In order to bring home the point that faces are relevant clues for deducing a person's internal motives but that they do not provide definitive proof, four pictures are presented at the very start of the session showing an athlete, a psychologist, an actor and a violent criminal (slide 15). In this exercise, most people guess incorrectly. The solution is not revealed until the end of the module. Over the course of the module, the participants are asked to describe how they empathize with other people, what sources of information they use, and how reliable these sources are (slides 16-23). Subsequently, we provide empirical evidence regarding BPD ("Why do we do this?"; slide 25-27) and an example of the effect of misinterpretations on behavior (slides 28-35). Furthermore, the effect of our own emotional state on perception/judgment of others is discussed on slides 35-41. This is followed by two illustrative slides (42-43) in which the emotion ***surprise*** is depicted in three different ways. Explore the ways in which a negative emotion (disgust, rejection) can be interpreted, depending on one's own mood (esp. top left picture). After the first conclusion (slide 45), we provide an exercise about perspective taking on slides 46-51. Slides 52-58 then name basic emotions and attribute them to persons and faces. Further, we provide examples demonstrating that expressions and gestures may be interpreted differently, depending on cultural background and age (slides 59-62: "When in Rome, do as the Romans do").
In the following exercise block (slides 63-88), we provide pictures that display different facial expressions. Participants are asked to judge how the person in the picture might feel, and to discuss the plausibility of the four alternative interpretations. Afterwards, the correct answer is highlighted (most of them accompanied by showing the complete picture).
In addition, consequences of misinterpretations in everyday life can be discussed, especially when faces are interpreted negatively (e.g., perceiving a focused or neutral expression as hostile).

Material

The material predominantly comes from the MCT for patients with psychosis. At the end of the presentation we acknowledge the contributions of the artists and photographers whose illustrations and photos we used.

Objective of the module

The first part of this training module demonstrates the importance of facial expressions and external features for understanding the mental state and inner feelings of a person. At the same time, it shows that emotional expressions and behavior of others can also be easily misinterpreted or over-interpreted. The participants should therefore learn to focus more on the context of events. In order to adequately interpret a facial expression, it is important to consider other sources of information (e.g., situational factors, personal background). Above all, the patients should be encouraged to always bear in mind the possibility that they are wrong in their evaluation.

General advice

Patients should take context into account when deducing the most plausible interpretation. Stress the fallibility of first impressions, and emphasize the need to remain open-minded. Use examples to underline the relevance for daily life. The tendency to over-interpret facial expressions as negative and the consequences of doing so (e.g., perceiving threat or hostility) should be discussed.

Specific advice

The trainer may skip some of the exercises.

Clues for finding the correct interpretation

There are no particular cues for exercises 1 and 2. The core learning objective is to show that facial expressions can be misleading (especially relevant for the interpretation of negative or hostile expressions), and that further information should be gathered before arriving at a strong conclusion. Solutions can be deduced from context rather than gestures (e.g., happiness = woman with bridal veil at her wedding; anger = man clenching fist) in the slides "Different emotions/feelings" in the first part of the module.

Module 4: Discovering the positive

Target domain

Handling praise and criticism; over-attention to negative information in the environment; cognitive dissonance

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.
Ask the participants to describe what might be meant by this section's title "Repelling the positive" (slide 15). Slides 17-20 discuss how to handle praise (and the constant rejection of positive feedback). At this point, emphasize that accepting praise can be difficult, as it often contradicts a very negative self-perception. This self-perception was in most cases acquired in early childhood (e.g., due to an invalidating environment). At the beginning of the module, mention that continuous denial of positive feedback and concurrent acceptance of negative feedback will make it hard for patients to improve their condition. Slides 21-25 address how to become better at accepting praise. The main goal here is to encourage the patients to pay particular attention to positive feedback over the next few days. In doing so, they should try to "endure the compliment" rather than rejecting it immediately. The slide "When do you compliment others?" is meant to point out that there is a positive intention behind (nearly) every compliment (i.e., to show appreciation, to motivate, to cheer up, …). Moreover, the participants should be asked whether they actually mean it when they praise others. As this is generally answered in the affirmative, the trainer can legitimately ask why the same shouldn't apply to other people.
Slide 26 is intended for showing a film clip ("validation" from Kurt Kuenne, see http://www.youtube.com/user/AGNeuropsychologie). It is a short clip that demonstrates what praise can trigger in other people and how this might also have a positive impact on the own mood. In addition, the patients should try to collect their own strengths on slides 40-44.
From slide 45 on, this is followed by the second thematic block of the module on the subject of cognitive dissonance (according to Festinger, 1978). Discuss and question the effects of conflicting thoughts and general beliefs on behavior and feelings using examples. In the course of the exercise, the patients should furthermore be encouraged to pay attention to positive aspects of everyday life. Moreover, they should try to find something positive or a meaning even in events that seem very difficult ("What can I learn here for the future?"). This will help patients discover positive aspects of seemingly hopeless or negative situations over time. It should be made clear that the past can change for the better. Space for the patients' own examples should be provided.
At the end of the module (slides 76-77), discuss the change in diagnoses over time (e.g., the diagnosis of a personality disorder should be verified after two years, especially in relation to the currently prevalent categorical rather than the dimensional diagnostic scheme (c.f. revised versions of the DSM-V)). Convey to the patients that some symptoms can fade over time. At this point, it might also be advisable to explain what criteria are relevant for BPD (psychoeducation).

Material

The first slides about handling praise and criticism were adapted from D-MCT (Jelinek et al., 2011). The slides about awareness of strengths come from MCT for patients with psychosis. At the end of the presentation we acknowledge the contributions of the artists and photographers whose illustrations and photos we used.

Objective of the module

The objective of the session is, among other things, to improve the handling of praise and criticism. Direct attention to positive aspects of the patients (awareness of strengths), as well as positive aspects of everyday life situations. In addition, seek to educate the patients about BPD (e.g., course of the disorder).

General advice

Include the patients' own examples, and address any questions they might have. Highlight the alterability of thinking styles, including self-degrading attitudes, provided that the patients attend training sessions consistently.

Specific advice (examples)

The subject of praise can be very difficult as it may be tainted with negative emotions for some patients. Treat these contents sympathetically and with caution, and anticipate the possible appearance of dissociative symptoms. If, for instance, participants mostly experienced criticism or degradation in their childhood, point out to them that they don't have to accept every criticism at face value. Moreover, an inner boundary against insults should be built up. Point out that "devaluations" of oneself may actually reveal something about the other person as well, and in that case it should never be taken as constructive criticism (but as an insult).

Module 5: Empathizing II

Target domain

Complex "theory of mind" and social cognition; perspective taking

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.
At the beginning of this module (slides 15-18), ask participants to talk about clues that may help them to make a judgment about a person (e.g., language, gestures). Thoroughly discuss weaknesses and advantages of each criterion with the group (slides 19-31).
On slide 28 you should discuss with the participants which clichés or prejudices they have already been confronted with (for example, related to their diagnoses or psychiatric in-patient stay) and how they have dealt with that. As demonstrated in the study on slides 32-40, the effect of words should be made clear. The relevance of taking another person's perspective to your own behavior is on slides 51-53 illustrated.
We present comic sequences from slide 54 on, for which participants are required to take the perspective of one of the protagonists, and to deduce what the character may think about another person or certain event. Most slides are presented in reverse sequential order, with the final panel displayed first. Chronologically speaking, the last panel is presented first, while the first panel(s) of the comic sequence remains covered. With each new panel, more context is provided about the story. It is recommended that the participants be asked after the first presented panel(s) (that is, the last panel chronologically) whether the presentation of more panels is still necessary or whether the solution is already obvious. In fact, the true chain of events is often put in a completely different light by subsequent panels. However, for the majority of items, several interpretations remain possible until the end. In this case, participants should propose what additional information is required for a reliable judgment. In addition, discuss within the group which interpretations are best supported by the available evidence. Specific advice concerning the interpretation of the comic sequences is provided in the table below.

Material

For the most part, the material comes from the MCT for patients with psychosis. The comic strips were drawn at our instructions by Britta Block, Christin Hoche and Mariana Ruiz-Villarreal. At the end of the presentation we acknowledge the contributions of the other artists and photographers whose illustrations and photos we used.

Objective of the module

The participants are taught the difference between their level of information as "omniscient viewer" and the facts available to the protagonists. In many scenes—as in real life—definite explanations cannot be provided. Therefore, participants should propose what additional information is needed to ultimately verify one of the hypotheses. Before making final (hasty) judgments about situations (or other people), other points of view should be considered.

General advice

It is advisable to let the participants take turns describing each panel of a sequence. Intervene if descriptions go beyond what is displayed in the panel or include unjustifiable assumptions. The participants should take different perspectives/points of view of the displayed persons/groups. Of note, group leaders should skip over the numerous practice exercises as necessary in order to allow time to summarize the learning points at the end of the module.

Clues for arriving at the correct interpretation of the pictures

Exercise	
1 (big man)	It is essential to understand that the people in the café did not see the boy with the saw. Therefore, the people will most likely assume that the chair was cracked due to the man's weight. However, the chair would have probably broken even with a lighter person.
2 (car)	One cannot really tell whether the woman will take the man's words as mere information, advice, or patronizing behavior.
3 (accident)	Given the information from the first presented slide (last chronological panel), it is difficult to deduce what the police officer is thinking. We can derive that the driver is disorientated, but we don't know whether this is only due to the car accident. At this point however, this explanation seems plausible. As more slides are presented, the participant becomes aware that deer were crossing the road prior to the accident. With the concluding information of the first chronological panel, it is clear that the man had been drinking alcohol. It is important to remember that the group has more information than the police officer; however, it is possible that the police officer might smell the alcohol, leading him to think intoxication caused the accident, although the true situation is more complex.
4 (bad news)	From the first picture (hence, last chronological panel) it is difficult to decide whether the boss is cold-hearted or not. The second slide that becomes available shows the woman crying, indicating that she may have a legitimate reason for being late. The final slides indicate that the woman is having health problems. It is not clear whether her boss knew she had a doctor's appointment before work or health problems, so one cannot be certain whether he is cold-hearted. Conversely, if the woman is often late for work, the boss's frustration would be understandable. On the other hand, in the last chronological panel the boss may see that the woman has been crying, and in this case his reaction could be considered too harsh.
5 (soccer)	In the first presented slide (last slide chronologically) the park ranger is likely thinking that the soccer players are blatantly disregarding the park rules by playing on the grass. By revealing the rest of the slides it becomes apparent to the participants that the soccer players are foreigners with poor language skills. We learn that the contents of the curriculum are very easy (see grammar on blackboard). Nevertheless, this information is not available to the park ranger, that is, the group possesses more information than he does.
6 (sausages)	As the boy is apparently very hungry, the mother may falsely accuse him of having eaten all of the sausages.
7 (library)	Based on the second slide of the cartoon sequence, one could infer that the man does not realize that the woman is on the phone, as he has just asked her a direct question and did not try to catch her attention first. It is possible that the man thinks the woman is replying to him. On the other hand he might just think that she should be working instead of chatting on the phone. This cartoon sequence allows different interpretations. It is important to emphasize that the participants have more information than the man.
8 (sick)	In the first slide presented (last slide chronologically), it looks like the mother is confused by her son's condition and perhaps concerned. The third chronological slide shows the boy sticking the thermometer into a hot cup, trying to make it seem like he has a fever. This information puts the story in a different light. Possibly, it is obvious to the mother that her son is pretending to be ill if his temperature is extremely high. In this case the mother would probably be angry. The first two slides of the cartoon show the preceding course of events but do not give additional information.

Module 6: Self-esteem

Target domain

Low self-esteem; self-degradation up to self-hatred

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.

First, work out with the group what "self-esteem" is and collect characteristics of people with a "healthy" level of self-esteem (slides 15-21). At the beginning, the trainer may make provocative proposals, such as "Can self-esteem be measured by income (reference to picture) or by the number of friends on *Facebook*?" It should become clear that a person's self-esteem cannot be determined on the basis of particular features like appearance, but is a subjective judgment of oneself. The "Non-visible features" slide emphasizes that a balanced self-esteem includes a reflective and accepting attitude toward oneself. Discuss the differences between an excessive and a "healthy" self-esteem. The emphasis is on a realistic objective: a more balanced and fair treatment of one's own strengths and weaknesses.

The "shelf image" (according to Potreck-Rose and Jacob, 2008) on slides 37-42 invites one to view the multifaceted self as a bookcase with various shelves (each for one area, e.g., job, family, hobbies, etc.). At present, these shelves are probably filled unevenly. Besides, it is not possible to be 100% successful in each and every one of these categories (e.g., job-related success may come at the expense of less time for a happy relationship or hobbies). Self-esteem suffers when a person thinks only about the empty shelves (one's weaknesses). It can lead to a sense of worthlessness. Instead, participants should be encouraged to look at the well-filled shelves as well. The examples on the slide "Do not omit things" are designed to help participants to identify personally relevant "shelves." The next slide ("What shelve have you not had a look at in a long time?") aims at drawing the participant's attention to neglected shelves (e.g., hobbies) to rediscover "dusty" contents. At this point, it is advisable to let each participant name one of their strengths. The trainer should encourage the participants to name seemingly "small or trivial" ones as well. If one of the participants cannot think of anything, this should be normalized (e.g., "It can be very difficult to directly name positive features if someone is not used to talking about one's own strengths.").

Then (slide 43) introduce the "inner critic" (as the generator of "all-or-nothing statements"). Introduce examples so that participants may figure out the relevance of the thought distortions. Let them come up with their own typical phrases generated by their inner critic. The dysfunctionality of all-or-nothing-thinking is demonstrated with the help of the "100-cents game" (slides 50-53). The next slides (54-56) present three strategies for dealing with the inner critic. The participants are instructed to identify all-or-nothing thinking (consistent with overwhelming self-criticism or self-degradation), to question this thinking ("Does this match the facts?," "What do trusted persons think?"), and to counter the inner critic ("I don't care what you think. I think differently.").

Furthermore, this module conveys that increased attention to negative thoughts or attempts to suppress them actually enhances their impact and presence (from slide 57 on). A short behavioral experiment during which the participants are asked to try to actively suppress thoughts demonstrates that thought suppression is a counterproductive strategy. Participants learn that such thoughts may be bothersome but relatively benign, and that thought suppression leads to a paradoxical increase in symptoms (cf. slide "Suppression of negative thoughts – does it work? No!"). The participants are instructed to observe their own thoughts from a detached perspective without interfering, like watching a storm outside or a tiger in a zoo. Finally, some techniques are presented that help them to gain inner distance. At this point, ask whether the participants are familiar with the concept of mindfulness; specific literature (such as Aguirre & Galen, 2013) may be recommended to interested participants. Many patients find it helpful to stop viewing thoughts as facts but as "events of the mind," and to perceive these without judging. This non-judgmental perception as defined by the mindfulness concept (see also DBT) can help them to gain distance on their own thoughts. Some helpful inner images may be introduced here (e.g., regarding thoughts as passing trains or clouds moving overhead). These can make it easier for patients to use the strategy.

Material

The contents partly come from the D-MCT by Jelinek et al. (2011) and were adapted accordingly. The "shelves" of self-esteem in one's cabinet comes from Potreck-Rose (2008). Further contents (e.g., concerning thought suppression) are based on Wells (2009) and Moritz & Hauschildt (2012).

Objective of the module

This module addresses the idea of self-esteem. First, discuss self-esteem as a purely subjective and alterable construct. The participants learn to develop a realistic sense of their own mind (cf. having a fair view; DBT, e.g., Bohus and Wolf, 2009). In addition, demonstrate how dysfunctional thinking styles contribute to the development of low self-esteem. Explain all-or-nothing thinking and convey strategies for dealing with this counterproductive thought pattern. The participants are instructed to identify their own all-or-nothing thoughts as the intrusions of an inner critic, to question these intrusions, and to silence the inner critic.

General advice

Many participants are already familiar with the contents of the self-esteem topic or mindfulness from the DBT. Use this knowledge, to repeat and amplify these contents.

Specific advice (examples)

Self-esteem is a difficult issue for many participants that should be approached carefully. It is important to make clear that a negative self-perception was often acquired in early childhood and that therefore it is fairly understandable that positive thoughts relating to oneself may crop up. The objective should be to make small steps toward self-acceptance. If participants cannot discover any positive features in themselves (areas of self-worth), the trainer can use examples from previous sessions (e.g., "You mentioned last time that you were a good knitter?"). Moreover, it may be helpful to fill the shelves for a friend as an example first, and then to check whether some of the qualities apply to oneself as well. The participants can also be encouraged to write down their own strengths or compliments they have received in a notebook (cf. "positive diary").

Module 7: Drawing conclusions

Target domain

Drawing hasty conclusions (jumping to conclusions bias) and impulsive behavior

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.
With the help of a short picture story (slides 15-19), the everyday relevance of jumping to conclusions is demonstrated ("normalization"). Then, possible consequences of hasty decision making (*jumping to conclusions*) are illustrated using several examples from everyday life. On slide 21 it is possible to show short video clips in which jumping to conclusions shown (see http://www.youtube.com/user/AGNeuropsychologie).
The exercises in the first task set (from slide 51 on) show common objects (e.g., a frog), which are displayed in decreasing degrees of incompleteness: new features are added in eight successive stages until the entire object is displayed. The participants are asked to rate the plausibility of either self-generated or pre-specified interpretations. Participants should withhold their final decision until sufficient evidence has been presented. For example, the first stage of the "frog" exercise strongly resembles a lemon, as only the outline of the frog is displayed from a particular angle. A hasty decision would result in an error. The second task set (from slide 80 on) show picture puzzles, which, depending on the observer's perspective, contain two different objects or scenes. For every picture, participants are asked to give their first impression of the picture, and then to change their perspective in order to find the alternative figure. In the third task set (from slide 103 on), the participants are shown a number of classical paintings. Their task is to deduce the correct title of each picture from four options. Discuss the pros and cons of each title suggestion with regard to picture details that could rule out certain alternatives. In addition, the participants are asked to state how confident they are in their evaluation.

Material

The exercise material comes from the MCT for patients with psychosis. Objects in the first task set are post-edited simple black and white drawings from a fairytale book. The contribution of other photographers/artists is acknowledged at the end of the presentation. Classical and modern paintings (third exercises) come from different artists, two of the pictures are taken from the *Thematic Apperception Test* (TAT). In addition, there are numerous entertaining video clips on jumping to conclusions, some of which can be downloaded from our homepage (www.uke.de/mct) and discussed with the participants. Other video clips may be found at **http://www.youtube.com/user/AGNeuropsychologie.**

Objective of the module

In this module, participants are trained to avoid succumbing to first impressions, which may eventually prove to be wrong (first and third task sets or only reveal half-truths (second task set)). Things or situations may change over time, and increasing evidence often casts a different light on things. The participants learn not to dismiss alternative views and attitudes prematurely, and not to act or judge impulsively. The material is excellently suited to demonstrate the disadvantages of a hasty problem-solving behavior. Furthermore, it conveys to the participants that it is advisable to take time when solving complex problems. Clear evidence that would allow a strong conclusion is often overlooked (when looked at superficially).

General advice

The pros and cons of a hasty vs. a slow response style have to be pointed out in detail with the help of the slides. If the stakes are high, all available evidence should be considered before making a final decision. If participants mention rumination (or overanalyzing) as a counterexample to jumping to

conclusions, refer to Module 2. Possible consequences of a "jumping to conclusions" bias are illustrated in several examples (e.g., medicine: false diagnoses). In this section, it is essential to give participants the chance to report their own experiences. In the picture puzzles in the second task set, the trainer should ensure that all participants discover both objects. If this does not happen, another participant may help by pointing at specific clues.
While the solution is rather obvious for some paintings in the third task set, for others it only becomes clear upon thorough contemplation. For some paintings the correct title may even be ambiguous. The participants' attention has to be directed toward yet unrecognized information (see further details below). If certain members of the group favor different titles, the trainer may encourage and moderate an open discussion.

Specific advice (examples)

For the second picture in the first exercises ("frog"), many participants tend to choose the ***lemon*** prematurely. When this happens, the trainer may emphasize that seven more fragments follow - a lemon would probably be completed on the next guess and therefore represents a rather unlikely solution. Don't devote too much time to the first task set so that there is enough left for the remaining two. It is also not necessary to complete all of the exercises.
If the participants express interest in further exercises, please refer to www.uke.de/mct (Modules 2A and 2B as well as 7A and 7B of the MCT for patients with psychosis).

Picture #	English title	Clues for detecting the correct interpretation
Picture 1	"Why did I marry him?"	The couple is apparently on a ship (porthole in the background), and they are probably on their honeymoon trip (argues for B). The man is lying on the bed with his clothes on; perhaps he is hungover. A bottle lies on the table next to him (also argues for B). The woman is too young to be the man's mother (argues against alternative D). There is no evidence of murder (e.g., a pistol) or suicide (argues against alternatives A and C). In the past, a red ribbon, as worn by the woman, indicated that she has (just) married (another hint for alternative B).
Picture 2	"The reading chemist"	Mortar and pestle as well as the closed bottle indicate a chemist who might be studying a new formula (speaks for C). The fact that he is absorbed in reading, that the bottle is closed, and that no glass is on the table argues against B. The style of dress does not indicate a monk (speaks against A).
Picture 3	"Sad message"	The woman is crying; the soldier has brought her a hat and a coat (presumably belonging to her fallen husband); there is a letter on her lap (speaks for D). The baby is not looking ill; the little boy is looking at the uniformed man and not the baby (makes alternative B implausible).
Picture 4	"The visit"	The man's attention is focused on the bird at the window, for which he lifts his gaze (option A). Since the man is not looking at the book, option B is implausible.
Picture 5	"Courtship"	The following speaks for B: The woman's facial expression is rather coquettish and sensual; the man has brought her a gift (flower); the man's devotional posture.
Picture 6	"Hunting accident"	The red nose of the man makes option B plausible. The scared face of the man also makes option A plausible; however, clothing, shotgun, and the tumbling man support option D.
Picture 7	"The pedicure"	The man visibly attends to the feet/toe nails of the woman. No doctor's bag or instruments (scalpel) are visible (thus option B and C are implausible).

Module 8: Mood

Target domain

Comorbid depressive symptoms; negative cognitive schemata; low self-esteem

Content of the module

Only present the general introductory slides (slide 1-13) that precede each module if there are new participants. Otherwise you can start at slide 14.

First, the group lists possible symptoms of depression (slides 15-16). The trainer then points out that depression is not irreversible, and that depressive cognitive patterns can be changed through training. Therapeutic possibilities for depression are briefly named (slides 21-23) and, if applicable, the patient's own experiences in dealing with depressive symptoms are collected. The exercises starting from slide 25 address typical depressive cognitive schemata such as "exaggerated generalization" and "selective perception." By interacting with the group, the trainer explains how distorted thought patterns can be replaced by more realistic and helpful coping strategies. For example, the participants are instructed not to generalize from one situation to the past and/or the future (e.g., "Once a loser, always a loser"), but instead to make concrete, situation-specific statements ("Today I failed at one specific thing"). Words like "never" or "always" should be avoided.

On slides 40-52, the participants are asked to make an evaluation regarding "reading negative thoughts" (e.g., "They are saying bad things about me!" when two colleagues keep whispering to each other while you present your ideas at a team conference). The effects (on mood, self-esteem, behavior) of this evaluation are then worked out under the guidance of the trainer, and the thought distortion is subjected to reality testing. The participants are then asked to think of a more helpful alternative evaluation and again to name the effects (on mood, self-esteem, behavior). In a next step, more helpful evaluations can also be developed for each participant's personal examples.

The slide 53 "Comparisons with other people" marks the beginning of the module's next unit which addresses unfair comparisons and the risks of perfectionism. Comparisons with other people may be human or even helpful sometimes, but it should be made clear that in the context of depression they are often unfair and one-sided. One can only "lose" when one engages in unfair comparisons (e.g., when you look at only one, seemingly perfect aspect in another person, while neglecting all the others (e.g., "He is professionally very successful, but at what price?"). You can also present the video clip "unfair comparison" - dove (see http://www.youtube.com/user/AGNeuropsychologie). The slides titled "Perfect life" (60-62) demonstrate that perfection is unachievable and that striving for it can make us anxious and unhappy. An alternate strategy may consist of encouraging participants to be "consciously imperfect" (e.g., deliberately make a small error). When comparing the expected and the actual outcomes, it often turns out that the expected negative reactions never happen. Clarify that there may be broad differences between the areas in which the participants strive for perfection (e.g., to always look perfect, or to be the perfect mother or father). By changing perspective (from slide 71 on), we can identify our own excessive standards ("Would you also expect a good friend to act 'perfectly' all the time?"). At the end of the module, discuss tips that, if used regularly, help to improve the patients' mood. At this point, the participants should first talk with each other about their own strategies. Finally, summarize the main contents of the module as learning objectives and clear up any open questions.

Material

Many contents were generated based on the MCT for patients with psychosis (Moritz et al., 2010) and the D-MCT (Jelinek et al., 2011). Additionally, some examples were inspired by participants' personal experiences or cognitive-behavioral textbooks (e.g., Beck, 1976). At the end of the presentation we acknowledge the contributions of the artists and photographers whose illustrations and photos we used.

Objective of the module

Introduce participants to dysfunctional thinking styles that may contribute to the formation and maintenance of depression. Encourage them to reduce the excessive demands they place on themselves, and to judge their own capabilities in a more appropriate and fair way. Highlight the alterability of depressive thinking styles. Above all, introduce strategies for improving mood and self-esteem (e.g., positive diary, positive activities).

General advice

This module differs from other parts of the B-MCT in that no conventional exercises with correct versus incorrect response options are provided. It is crucial that the trainer be familiar with the cognitive-behavioral model of depression that underlies this module.

Specific advice

Some of the slides contain questions asking the participants to come up with more helpful and balanced interpretations before the possible response options are revealed (these only serve as inspirations). When discussing tips for improving mood, the participants should also exchange positive experiences and recommendations for tips. It is also important for patients to know that change can be hard and takes practice. This applies to changes of thinking styles in particular. An important first step is to recognize thought distortions in everyday life, and to change them successively. The participants may also be encouraged to give further attention to adverse thought patterns during their individual therapy.

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