The Sequential Combination of Cognitive Behavioral Treatment and Well-Being Therapy in Cyclothymic Disorder

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Key Words
Cyclothymic disorder • Bipolar disorder • Depressive disorder • Cognitive behavioral therapy • Well-being therapy • Psychological well-being • Clinical Interview for Depression

Abstract
Background: There is a lack of controlled studies of psychological treatment of cyclothymic disorder. The aim of this investigation was to examine the benefits of the sequential combination of cognitive behavioral therapy (CBT) and well-being therapy (WBT) compared to clinical management (CM) in DSM-IV cyclothymic disorder. Methods: Sixty-two patients with DSM-IV cyclothymic disorder were randomly assigned to CBT/WBT (n = 31) or CM (n = 31). Both CBT/WBT and CM consisted of ten 45-min sessions every other week. An independent blind evaluator assessed the patients before treatment, after therapy, and at 1- and 2-year follow-ups. The outcomes included total score of the change version of the Clinical Interview for Depression, and the Mania Scale. All analyses were performed on an intent-to-treat basis. Results: Significant differences were found in all outcome measures, with greater improvements after treatment in the CBT/WBT group compared to the CM group. Therapeutic gains were maintained at 1- and 2-year follow-ups. Conclusions: A sequential combination of CBT and WBT, which addresses both polarities of mood swings and comorbid anxiety, was found to yield significant and persistent benefits in cyclothymic disorder.

Introduction
Research on the benefits of psychological therapies in bipolar disorder has made substantial progress in the past decade [1, 2]. Adjunctive psychotherapy has been found to enhance symptomatic and functional outcomes [2]. Various treatment modalities have been used: individual, group or family psychoeducation; cognitive behavioral therapy (CBT) or interpersonal and social rhythm therapy [2].

There has been very little research effort and no randomized controlled trial in subthreshold forms of bipolar disorder despite the fact that these disturbances are common and clinically significant [3, 4]. Cyclothymic disorder is the best-described and acknowledged form of subthreshold bipolar disorder [5–7]. Cyclothymic individuals report short cycles of depression and hypomania that fail to meet duration criteria for major affective syndromes [5]. Hyper-somnia alternating with decreased need for sleep, shaky self-esteem, periods of apathy alternated with sharpened and creative thinking, marked unevenness in quantity and
quality of productivity, as well as uninhibited friendliness followed repeatedly by introverted self-absorption characterize the biphasic course of cyclothymic disorder [8]. There may also be irritable-angry-explosive attacks which are generally ego-dystonic to the patient, leading to considerable personal and social embarrassment after they subside [8]. Substantial comorbidity (including substance and alcohol abuse, anxiety disorders and personality disturbances) is often associated [3–8]. Cyclothymia has been identified as having a circadian component [5–9]. Seventy-one students exhibiting cyclothymic mood and behavior patterns were randomly assigned to an experimental group – in which they were encouraged to regulate their daily routines – or to a control group. Increased lifestyle regularity that was achieved in the experimental group did not affect mood and behavior [10].

Shared characteristics of the psychological therapies that were reported to be effective in bipolar disorder focused on 4 key themes: psychoeducation, medication adherence, lifestyle regularity (including reduction in substance misuse) and relapse prevention [1].

On the basis of our previous work on cognitive behavioral management of residual symptoms of patients with bipolar disorder [11] and our clinical experience, we devised a psychotherapeutic approach for cyclothymic disorder: the sequential combination of CBT for depressive symptoms and well-being therapy (WBT) for hypomanic symptoms. WBT is a technique aimed at changing beliefs and attitudes detrimental to well-being [12, 13]. This sequential combination has been tested in recurrent depression [14–16] and generalized anxiety disorder [17].

The purpose of this study was to apply this therapeutic approach to a sample of patients with cyclothymic disorder, and to compare its effectiveness with that of clinical management (CM) without the use of CBT and WBT.

**Methods**

**Patients**

The 62 participants were recruited from 120 consecutively screened patients who met the DSM-IV diagnostic criteria for cyclothymic disorder and who had been referred to the Affective Disorder Program of the University of Bologna (fig. 1). The study started in November 2002 and ended in December 2008.

The patients’ diagnoses were established by the consensus of a psychiatrist and a clinical psychologist independently using the Schedule for Affective Disorders and Schizophrenia [18] and the Interview for the Diagnostic Criteria for Psychosomatic Research [19]. The patients had to meet the following criteria: (1) age 18–65 years, (2) a current diagnosis of cyclothymic disorder according to DSM-IV, (3) no history of mania or major depressive disorder, (4) no history of active drug or alcohol abuse or dependence or borderline personality disorder according to DSM-IV criteria, (5) no active medical illness, (6) no current or recent (2 years) use of antidepressant drugs or mood stabilizers, and (7) no current psychotherapeutic treatment.

**Assessment**

All patients were assessed by the same clinical psychologist who had evaluated them on intake, but did not take part in the treatment. The study was approved by an institutional board and
written informed consent was secured from all patients after the procedures had been explained fully to the patients. The participants were asked to complete a questionnaire covering several demographic domains including: age, gender, as well as marital and socioeconomic status. Social class was subdivided into 2 levels (i.e. working and middle-upper) according to Goldthorpe and Hope's occupational classification [20]. The following rating scales were used before randomization, after treatment and at 1- and 2-year follow-ups:

(1) A modified version of the Clinical Interview for Depression (CID; change version) [21, 22]. The change version of the interview covers 20 symptom areas. In this modified version, the last 4 items (hostility, retardation, agitation, depressed appearance) were omitted. Each item is rated on a 1- to 7-point scale, with 1 indicating absence of symptoms and 7 severe incapacitating indicators. The scale includes a wide range (such as irritability and phobic anxiety) compared with other scales and is particularly suitable for assessing subclinical symptoms of mood disorders [14–17, 22–24], also in view of its capacity to measure several increments or small changes near the normal end of the spectrum [22, 25].

(2) One item – reactivity to social environment – selected from the full version of the CID and scored separately, as it is allowed by this scale [22]. It refers to the changes in mood and symptomatology, either improvement or worsening, as a result of environmental circumstances, and is scored on a 1- to 7-point scale with specification of each anchor point based on severity, frequency and quality of mood variations. The scale ranges from 'changes due to environment absent or very rare' (score 1) via 'nonspecific factors, such as having someone to talk to, produce limited improvement' (score 3) to 'the source of the depression is entirely dependent on certain specific situations, being regularly precipitated or entirely removed according to them' (score 7). This item was found to sensitively discriminate between different subgroups of depressed patients [26–29], to be exceedingly common in patients with neurocirculatory asthenia [30] and also in the prodromal phase of bulimia nervosa compared to control subjects [31]. It was thus expected to yield a sensitive measurement of change upon treatment in cyclothymic disorder. It was selected since the sequential combination of CBT and WBT was expected to specifically address this dimension.

(3) The Mania Scale (MAS) in the version with specific anchor points by Bech et al. [32]. It consists of 11 items, with scores which may range from 0 to 4 each.

Primary outcome measures were total CID and MAS scores; secondary outcome measures were the CID reactivity to social environment and persistence of both cyclothymic disorder and DSM comorbidity, assessed by the Schedule for Affective Disorders and Schizophrenia, at posttreatment, and 1- and 2-year follow-ups.

Treatment

After assessment, the 62 patients were randomly assigned to 1 of 2 treatment groups: (1) sequential combination of CBT and WBT or (2) clinical management. The allocation to treatment was accomplished through random computerized assignment which allocated 50% of the patients in each treatment group, with assignments concealed until the time of group assignment. In both groups, the treatment consisted of ten 45-min sessions once every other week. Two psychiatrists performed the treatment in both groups. When patients were taking benzodiazepines on study entry, in the course of treatment, according to a standardized protocol [33], these drugs were tapered and, whenever possible, discontinued. The therapists did not prescribe any new psychotropic drugs or increased dosages of benzodiazepines.

The CBT/WBT combination was performed according to a structured protocol:

(a) First 2 Sessions: The patient’s symptomatology (including comorbidity) was organized according to the principles of macroanalysis (a relationship between co-occurring syndromes, symptoms and problems is established on the basis of where treatment should commence first) [34–38]. Episodes of distress were monitored using patients’ diaries that were continued throughout treatment.

(b) Sessions 3–6: Whenever appropriate, as in the case of phobic anxiety, homework exposure strategies were planned with the patient [39]. The therapist used strategies and techniques designed to help patients to correct their distorted views and maladaptive beliefs, particularly regarding depressive symptoms, inadequacy, irritability and generalized anxiety [40].

(c) Sessions 7–10: Monitoring of episodes of well-being (often hypomanic occurrences) was pursued and WBT, a psychotherapeutic strategy for enhancing well-being [12, 13], was used. It is based on Ryff’s [41] multidimensional model of psychological well-being encompassing 6 dimensions: autonomy, personal growth, environmental mastery, purpose in life, positive relations with others and self-acceptance. The goal of the therapy was to improve psychological well-being according to these dimensions and substitute short-lived hypomanic perceptions with sustained appraisal of well-being.

There were no structured ingredients concerned with psychoeducation, medication adherence and social rhythm therapy. There is some overlap between interpersonal psychotherapy and the pursuit of interpersonal relationships in WBT, but this latter is only 1 of the 6 dimensions that are the focus of therapy.

Clinical management consisted of reviewing the patient’s clinical status and providing the patient with support and advice if necessary according to a structured protocol. In CM specific interventions such as exposure strategies, diary work and cognitive restructuring were proscribed. The patient was encouraged to share the main events that took place in the previous 2 weeks.

Treatment integrity was checked by submitting 8 randomly selected taped sessions (4 only involving CBT/WBT and 4 involving CM) to 2 independent assessors, who correctly identified all sessions. The patients were reassessed by the same clinical psychologist who had performed the previous evaluations and who was unaware of the treatment assignment immediately after treatment, at the 1- and 2-year follow-ups. The instruments were the same as the first assessment. In addition, at follow-up the persistence of cyclothymic disorder and associated DSM comorbidity was tested. The follow-up evaluation also consisted of a brief update of clinical and medical status, including any treatment contacts or use of medications.

Data Analysis

The data were entered in SPSS (version 17.0), after which descriptive statistics were calculated. All analyses were performed by using intent to treat analysis with last observation carried forward. All analyses were repeated using only completers’ data. Since they yielded similar results, they will not be reported here.
The 2-tailed t test for independent samples and χ² test were used to assess the differences between the 2 groups at baseline. Analysis of variance for repeated measures was used for comparing the mean scores of each outcome measure (i.e. total CID, CID reactivity to social environment and MAS) at different assessment times. Group allocation (CBT/WBT vs. CM) represented the between-subjects factor, while baseline, posttreatment, 1- and 2-year follow-up evaluations were set as within-subjects factors. Changes over time were assessed by means of contrasts analysis comparing posttreatment, 1- and 2-year follow-up scores with baseline.

Analyses of covariance were also performed to compare the mean scores of the 2 groups at each assessment time, adjusting for any difference in the first assessment.

The χ² test was applied on contingency tables for comparing the persistence of cyclothymic disorder and DSM axis I comorbidity in the 2 groups at posttreatment and at subsequent follow-ups. For all tests performed, the significance level was set at 0.05, 2-tailed. The results are expressed as means and standard deviations.

**Results**

The random assignment to active treatment and clinical management yielded 2 groups of 31 patients each. The 2 groups at baseline were similar in sociodemographic variables, duration of illness, presence of DSM and Diagnostic Criteria for Psychosomatic Research comorbid syndromes, and current use of benzodiazepines (Table 1). However, the CBT/WBT group showed significantly higher levels of affective symptomatology, as measured by the CID total score (42.32 ± 6.15 vs. 36.87 ± 4.40; t = 4.013; d.f. = 60; p < 0.001) and greater reactivity to social environment (4.13 ± 0.67 vs. 3.58 ± 1.15; t = 2.296; d.f. = 60; p < 0.05) compared to the CM group.

Twenty-six patients in the CBT/WBT group and 25 in the CM group completed the 20-week trial (see flowchart,
Table 2. Scores at CID, CID Reactivity to Social Environment and MAS before treatment (T0), after treatment (T1), at 1-year follow-up (T2) and at 2-year follow-up (T3) in the groups assigned to the sequential combination of cognitive behavioral treatment and well-being therapy (CBT/WBT) or clinical management (CM)

<table>
<thead>
<tr>
<th></th>
<th>CBT/WBT (n = 31)</th>
<th>CM (n = 31)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>T0</td>
<td>T1</td>
</tr>
<tr>
<td>CID total score</td>
<td>42.32 (6.15)</td>
<td>27.87 (4.87)</td>
</tr>
<tr>
<td>CID reactivity to environment</td>
<td>4.13 (0.67)</td>
<td>2.61 (0.99)</td>
</tr>
<tr>
<td>MAS</td>
<td>9.26 (3.10)</td>
<td>5.90 (2.92)</td>
</tr>
</tbody>
</table>

Data are given as means (SD).

There were no significant differences between dropouts and completers at baseline in all the variables measured except for the CID total score: dropouts showed a significantly lower score compared to completers (35.82 ± 3.60 vs. 40.41 ± 6.09; t = -2.402; d.f. = 60; p < 0.05).

Table 2 displays the total CID, the CID reactivity to social environment and the MAS mean scores at each assessment time.

Analysis of variance for repeated measures showed significant changes in the CID total score in both groups (F = 51.171; d.f. = 3, 58; p < 0.001). Contrast analysis indicated that significant improvements were obtained at posttest (p < 0.001), and subsequently maintained at 1- and 2-year follow-ups (p < 0.001) compared to baseline. Considering time by group interaction, significant differences were found in the CID total score (F = 10.834; d.f. = 3, 58; p < 0.001), with greater improvements after treatment in the CBT/WBT group compared to the CM group (fig. 2). Comparing the CID total scores of the 2 groups at posttreatment, with adjustment for any difference in the first assessment, a significant advantage of the sequential administration of CBT and WBT was found (F = 11.824; d.f. = 1, 59; p = 0.001). Significant differences between the 2 groups were also found at the 1- and 2-year follow-ups (F = 10.239; d.f. = 1, 59; p = 0.002 and F = 4.811; d.f. = 1, 59; p < 0.05, respectively) with greater reduction of symptoms in the CBT/WBT group compared to the CM group.

With regard to the CID reactivity to social environment score, analysis of variance for repeated measures resulted in significant changes over time in both groups (F = 33.253; d.f. = 3, 58; p < 0.001). A significant time by group interaction (F = 12.798; d.f. = 3, 58; p < 0.001), with greater reduction after treatment in the CBT/WBT group compared to the CM group, was also found. Analysis of covariance comparing the 2 groups at posttreatment, after controlling for baseline levels, confirmed the superiority of the sequential administration of CBT and WBT compared to CM (F = 27.609; d.f. = 1, 59; p < 0.001). The results were similar at the 1-year (F = 26.013; d.f. = 1, 59; p < 0.001) and 2-year (F = 23.753; d.f. = 1, 59; p < 0.001) follow-ups.

Analysis of variance for repeated measures was performed to evaluate changes in the MAS score. Significant changes over time were found in both groups (F = 25.989; d.f. = 3, 58; p < 0.001). Contrast analysis indicated that significant improvements were obtained at posttest (p < 0.001), and subsequently maintained at the 1- and 2-year follow-ups (p < 0.001) compared to the initial measurement. A significant time by group interaction was found (F = 9.328; d.f. = 3, 58; p < 0.001), with better results after the sequential combination of CBT and WBT compared to CM (fig. 2). Test of between subjects effects showed significant differences between the 2 groups favoring the CBT/WBT group (F = 7.019; d.f. = 1, 60; p < 0.05). Analysis of covariance confirmed a significant advantage of the sequential approach after treatment (F = 16.996; d.f. = 1, 59; p < 0.001) and at subsequent follow-ups (F = 11.493; d.f. = 1, 59; p = 0.001 and F = 17.631; d.f. = 1, 59; p < 0.001).

Moreover, the patients in the CBT/WBT group were significantly less likely to present with persistent cyclothymic disorder and DSM comorbidity, particularly anxiety disorders, after treatment and at subsequent follow-up compared to the CM group, as reported in table 3.

Seven of the 19 patients who completed treatment and were on benzodiazepines in the CBT group (36.8%) no longer assumed these drugs at the end of psychotherapy, whereas this did not occur in patients who were on benzodiazepines in the CM group.

In the patients who completed the study, there were no external treatment contacts during follow-up. Four cases in the CBT group and 7 in the CM required single sessions for ensuing difficulties. In no case, psychotropic drugs or new courses of psychotherapy were prescribed.

Patients who dropped out of treatment were not available for further assessment.
The last part of treatment involved monitoring of hypomanic episodes and use of WBT. Colom and Vieta [43] have outlined a cognitive model of hypomania characterized by the establishment of positive arbitrary inferences that escape critical appraisal, the abstract selection of thoughts that confirm the most favorable hypotheses, an excessive personalization that can lead to self-referential thought and a tendency to overinclude stimuli. These cognitions lead to the setting of unrealistic goals which clash with reality [43]. In cyclothymic disorder, hypomanic thoughts tend to be short lived and have little to share with dimensions of well-being such as environmental mastery, positive relations with others and self-acceptance. The cognitive restructuring engendered by WBT thus allows to substitute hypomanic automatic thoughts [42] with sustained feelings of well-being. Even in the manic phases of bipolar disorder, self-esteem was found to be low [44] and expansiveness and grandiosity may reflect an attempt on the part of the patient to behaviorally offset the covert low levels of self-esteem [45].

For instance, a young patient may present with the bi-phasic characterization of cyclothymia (hypersomnia/ decreased need to sleep; demoralization/overconfidence, uneven productivity), with social phobia, irritable-angry-explosive outbursts and problems with her boyfriend and family. Social avoidance would be pursued first with exposure methods, while cognitive therapy would subsequently address demoralization, catastrophic thinking, pervasive anxiety and irritability. WBT would be an effort to improve well-being dimensions including personal relationships with others. Both CBT and WBT would attempt to reduce reactivity to social environment. As Akiskal et al. [8] commented, cyclothymic patients seldom relate their moods to concurrent life situations. Mood swings, particularly irritable-angry-explosive attacks, put a considerable strain on interpersonal relationships and the patients themselves, who cannot predict, from moment to moment, how they will feel. They avoid anxiety-provoking situations as a source of unpredictable reactivity. This undermines their sense of self and feeds the vicious cycle [8].

This study has some limitations. First, most of the patients who were included had comorbidity on the first axis of DSM-IV, mainly an anxiety disorder. Substance and alcohol abuse and dependence and borderline personality disorder, which constitute common comorbidities in clinical practice [5–8], were excluded. The sample may thus not be entirely representative of the clinical population of cyclothymic patients in psychiatric settings. Second, treatment was provided by 2 psychiatrists with extensive experience in both CBT and WBT. The

### Table 3. Presence of cyclothymia and DSM-IV axis I comorbidity before treatment (T₀), after treatment (T₁), at 1-year follow-up (T₂) and at 2-year follow-up (T₃)

<table>
<thead>
<tr>
<th></th>
<th>CBT/WBT (n = 31)</th>
<th>CM (n = 31)</th>
<th>χ²</th>
<th>p</th>
</tr>
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<tbody>
<tr>
<td>Cyclothymia</td>
<td></td>
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<td></td>
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<tr>
<td>T₀</td>
<td>31</td>
<td>31</td>
<td></td>
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</tr>
<tr>
<td>T₁</td>
<td>11</td>
<td>27</td>
<td>17.404</td>
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</tr>
<tr>
<td>T₂</td>
<td>12</td>
<td>27</td>
<td>15.552</td>
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</tr>
<tr>
<td>T₃</td>
<td>8</td>
<td>27</td>
<td>23.685</td>
<td>&lt;0.001</td>
</tr>
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<td>DSM-IV axis I comorbidity</td>
<td></td>
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<tr>
<td>T₀</td>
<td>23</td>
<td>17</td>
<td>2.536</td>
<td>n.s.</td>
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<tr>
<td>T₁</td>
<td>8</td>
<td>16</td>
<td>4.351</td>
<td>&lt;0.05</td>
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<tr>
<td>T₂</td>
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<td>&lt;0.05</td>
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<tr>
<td>T₃</td>
<td>6</td>
<td>15</td>
<td>5.833</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Data are given as number of patients.

**Discussion**

This first randomized controlled trial on the psychological treatment of cyclothymic disorder provides new, important clinical insights regarding the characteristics and treatment of cyclothymic disorder.

The sequential combination of CBT/WBT had a substantial effect on cyclothymic disorder. There were significant effects on both depressive and hypomanic symptoms, as measured by the CID and MAS, compared to CM, after treatment, at the 1- and 2-year follow-ups. In more than half of the cases that were treated by CBT/WBT a diagnosis of cyclothymic disorder was no longer present after treatment and there was abatement of comorbidity as well. Cyclothymic symptomatology was persistent in the CM group.

The intervention addressed both mood and anxiety symptoms. The hypothesis was that presence of anxiety symptoms (particularly avoidance) might produce increased affective instability, as was found to be the case in bipolar disorder [42]. One item of the CID, reactivity to social environment, was selected as a test of this hypothesis. Indeed, this item highly discriminated between specific and nonspecific treatment in our sample. The patient’s symptomatology was organized according to the principles of macroanalysis [34–38], which allows to establish a relationship between co-occurring syndromes, symptoms and problems. Treatment of anxiety, whenever possible, generally preceded the approach to depressive symptomatology. Behavioral strategies (particularly homework exposure) also preceded cognitive restructuring. The last part of treatment involved monitoring of well-being and cyclothymia.
results might have been different with multiple, less experienced therapists. Finally, the sequential combination of CBT/WBT that was used was a complex intervention; it is not possible to know whether, compared to clinical management, the effect might have been achievable by a single active treatment and which were its effective ingredients.

Nonetheless, the results of this investigation have a number of clinical implications. First, they indicate that even though cyclothymia is liable to be affected by temperamental influence [7, 8] – and its persistence during the follow-up period in the CM group is in line with this notion – it is, in many cases, a treatable condition. Patients may actually learn to decrease their reactivity to environmental stimuli and to recognize the warnings to mood swings. This may occur, however, only if the allostatic load entailed by anxious behavior and cognitions is decreased [46].

A second implication is concerned with the fact that subclinical fluctuations of mood are the rule in treated bipolar patients [47, 48], occur in the prodromal phase of their illness [47, 49] and hypomania is a graded dimensional entity [50]. It is conceivable, even though yet to be tested, that the sequential combination of CBT and WBT that was used in this study may yield more enduring effects in terms of relapse rate of remitted bipolar disorder compared to current psychotherapeutic strategies [1, 2]. It is also conceivable that this approach may be particularly effective in adolescence and may avoid use of psychotropic drugs, such as antidepressant drugs, that may improve reactivity to the social environment in the short term but lead to a worsening of the clinical course in the long term [51–53].

Finally, the results lend support to the utility of the sequential model in mood disorders, as an intensive, 2-stage approach, which derives from the awareness that 1 course of treatment or 1 type of therapy is unlikely to entail a solution to the disturbances of patients [36].

The experimental protocol of this investigation has a number of innovative features that deserve brief comment. First, the assessment is much broader than is currently performed [54]. It includes the wide spectrum of symptoms of the CID [22] and MAS [32], as well as constructs such as demoralization [55], irritable mood [56], alexithymia [57] and abnormal illness behavior [58, 59], entailed by the Diagnostic Criteria for Psychosomatic Research [19]. Psychological well-being [13, 41] and related constructs [60] are also object, by use of the diary, of the second half of therapy. Second, clinical decision making is addressed to attainment of individual goals and identification and treatment of all modifiable factors, rather than solely to the concept of disease [37, 61]. As in previous studies on unipolar depression [14–16, 23], treatment concerned both depressive and anxiety symptoms. By use of macro- and microanalysis, targets are not predetermined, but depend on the response and modifications of illness during treatment [61]. Finally, psychotherapy has much more ambitious goals than the customary key themes of the literature on bipolar disorder (psychoeducation, medication adherence, lifestyle regularity and relapse prevention [1]): a positive evaluation of one’s self, a sense of continued growth and development, the belief that life is purposeful and meaningful, the possession of quality relations with others, the capacity to manage effectively one’s life and a sense of self-determination [13, 39].

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Disclosure Statement

The authors have no financial conflict of interest to declare.

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