



## REVIEW

# A review on the effectiveness of cognitive-behavioural therapy for bipolar affective disorder

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### Abstract

**Objective:** Bipolar Affective Disorder (BD) is a chronic disease with major impact on patients' functioning and quality of life. In recent years, there has been a greater investment in psychosocial interventions as adjunctive treatment. The present article intends to gather information about the effectiveness of Cognitive-behavioural Therapy (CBT) for BD.

**Methods:** Literature search on PubMed database.

**Results:** CBT has demonstrated positive results on BD, mainly, reducing recurrence rates, number and duration of episodes, hospitalizations and frequency of mood symptoms, and improving treatment compliance and global functioning.

**Conclusions:** The use of CBT for BD has evident benefits. Investment in this area is undoubtedly critical.

**Keywords:** Cognitive-behavioural therapy, Bipolar disorder, Psychosocial interventions, Mood disorders, Psychotherapy.

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Citation: Abreu, T. A Review on the effectiveness of cognitive-behavioural therapy for bipolar affective disorder. *International Journal of Clinical Neurosciences and Mental Health* 2016; 3:6

DOI: <https://doi.org/10.21035/ijcnmh.2016.3.6>

Received: 22 Jul 2016; Accepted: 12 Dec 2016; Published: 23 Dec 2016



Open Access Publication Available at <http://ijcnmh.arc-publishing.org>

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## Introduction

Bipolar Affective Disorder (BD) is characterized by alternating periods of euthymia and periods of mood swings, with depressive and manic episodes in Bipolar I Disorder (BD-I) and depressive and hypomanic episodes in Bipolar II Disorder (BD-II). Occurrence of simultaneous symptoms of opposite mood polarities is known as mixed episodes. Prevalence of BD-I is 0.6% and BD-II is 0.4%. When considering the whole bipolar spectrum, BD's prevalence reaches about 2.4% [1]. Although it is not the most prevalent of the mental illnesses, it is a serious public health problem, since it reduces quality of life and constitutes the 12<sup>th</sup> leading cause of disability worldwide across all age groups [2]. The associated increase in mortality is also of great concern: double the mortality risk associated with cardiovascular disease and fifteen times higher risk of suicide, compared with general population [3].

Investment in the treatment of this disease is, therefore, a priority. Drug therapy is essential, mainly involving mood stabilizers, antipsychotics and, if necessary, antidepressants (though a more controversial indication). The use of psychosocial interventions for BD began in the late twentieth century. Currently, several studies support the use of these interventions on BD [4].

Some factors contributed to the scarce investment in non-pharmacological therapies over the years, essentially, the strong biological component and high heritability of BD; the erroneous idea of the absence of symptoms in the euthymic periods; and the ambivalence of traditional psychoanalytic school regarding the usefulness of psychotherapy in this disease [5].

The change of perspective was mainly due to the fact that BD has relapse rates superior to 50%, even under pharmacological treatment [6]. It has been accepted that medication is not enough, something that had already been demonstrated in other mental illnesses. It was recognized that not only biological factors but also psychological and social factors are predictors of the disease's course. In light of that, there has been a greater investment in psychosocial interventions as adjunctive treatment, and also an exponential growth of the investigation in this area [7].

Psychosocial interventions' goals for BD are based primarily on educating patients about the disease, emphasizing the acceptance of treatment and recognition of symptoms that may appear at the beginning or even precede an episode. Also, contributing to the symptomatic relief and prevention of relapse and providing strategies to deal with the many crises that may arise in patients' life [8].

The main psychotherapeutic strategies used for BD are Cognitive-Behavioural Therapy (CBT), Psychoeducation, Interpersonal and Social Rhythm Therapy (IPSRT) and Family Focused Therapy (FFT). All of these approaches include a component of psychoeducation.

According to Goldman, psychoeducation intends to educate people with a psychiatric illness with regard to its

treatment and rehabilitation. Promotes disease's acceptance, active participation of the patient in the treatment, and acquisition of strategies to deal with the problems caused by the disease [9]. The session can be individual or in group. Different programs have been developed for BD, an example being the program proposed by Colom and Vieta in Barcelona, with 21 weekly group sessions. The sessions address the definition of bipolar disorder, causal and predisposing factors, symptoms in different episodes, evolution and prognosis, pharmacological treatment and analytical control, pregnancy and genetic counselling, psychosocial therapies, risks associated with treatment drop-out, dependencies, early detection of episodes, lifestyle regularity, stress management techniques, and problem solving techniques [10].

Ellen Frank et al. developed IPSRT, a therapy focused on maintenance of a regular routine, in order to avoid disruption of circadian rhythms (e.g., sleep-wake cycle), and possible consequent relapse. It focuses also on interpersonal problem solving [11]. This therapy is implemented in four phases. The first, which can last 3 to 5 sessions, is directed to collect a detailed medical history, including the link between episodes of illness and interpersonal problems and social routines. At this stage, psychoeducation is central to both the patient and his family. Interpersonal relationships are also approached and, together with the patient, an interpersonal problem area is selected for further work. In the second phase, during 10 to 12 sessions, the focus is to establish regular social routines and solve the interpersonal problem previously selected. The third and fourth stages have a more variable length, focusing on maintenance and termination of treatment, respectively [12].

FFT, developed by Miklowitz and Goldstein, is based on supporting the patient and their families, educating them about the disease in order to recognize the symptoms and help prevent relapse. It focuses also on facilitating communication within the family and in conflict resolution [13]. The main goals of this therapy are to help the family and the patient integrate experiences associated with episodes of illness; accept the vulnerability for future episodes; accept and comply with pharmacotherapy; distinguish patient's personality from disease's symptoms; recognise and manage life events that may trigger episodes; and restore functional relationships after an episode of disease [14].

CBT includes a group of interventions based on the premise that mental illness is maintained by cognitive factors. It is a brief structured psychotherapy, with established goals between therapist and patient, focused on the present. Aims at problem solving and modification of dysfunctional thoughts and behaviours.

CBT was born in the twentieth century, from a combination of behavioural and cognitive therapies. Interventions focused on behaviour emerged in the 20s [15] and, later, under the influence of Pavlov, Skinner and Wolpe, among others, several techniques and theories emerged. Examples of these are classical conditioning,

systematic desensitization, operant conditioning and social learning theory.

In the 60s, focus switched towards cognitive studies, in how cognition can affect emotions and behaviour. At a time that behavioural theories were increasingly fragmenting and were considered inadequate by many, strategies aiming to change thoughts and not only behaviours began to be privileged [16]. In this context, the first cognitive-behavioural therapies were developed, with emphasis on the work of Aaron Beck and Albert Ellis.

CBT created by Beck was originally named "cognitive therapy" [17]. Afterwards, several forms of CBT were created, based on Beck's elements, but differing in conceptualizations and emphasizing different aspects.

In the current millennium, the third wave of CBT emerged, recasting previous cognitive and behavioural techniques and adding a new perspective directed to acceptance, living in the present and therapeutic relationship. According to Hayes, third generation CBT tends to emphasize strategies of contextual and experimental changes [18].

CBT was originally developed for unipolar depression [17], but was later expanded for different mental illnesses, including BD. Creating CBT programs for BD is more complex than for most mental illnesses, given the different stages of the disease. An equally efficient program in depressive and mood elevation phases is very difficult to achieve. Thus, most established protocols are applied when the patient is in euthymic phase [19]. Another important issue is that if the patient is not prepared to accept the disease and its treatment, this therapy will hardly help.

CBT has several goals for BD, namely, to educate patients and their families about the disease, its treatment, progress and difficulties; to promote acceptance of the disease and reduce the associated stigma; to develop an active role of the patient in their treatment; to maximize adherence to treatment, especially to pharmacological regimens; to develop strategies for self-monitoring of symptoms, in order to prevent and identify a possible relapse; to help solve problems and stress factors that can cause a relapse; to promote control of less severe symptoms avoiding frequent recurrence to drugs; to build skills to deal with cognitive, affective and behavioural factors associated with mood changes [20].

Among the different models of CBT proposed for BD, there are three main manuals that have been applied and studied. The first to be published, in 1996, was written by Monica Ramirez Basco and A. John Rush, "Cognitive-Behavioural Therapy for Bipolar Disorder". This manual highlights psychoeducation, featuring a 20-session treatment plan, in which the first seven are psychoeducational. It addresses CBT, the disease, the treatment and the importance of its maintenance, and self-monitoring. From 8<sup>th</sup> to 11<sup>th</sup> sessions, cognitive tools are introduced, with analysis of negative automatic thoughts and cognitive changes in mania/hypomania and depression. The following two

sessions focus on behavioural strategies during periods of depression and mania/hypomania. The last seven sessions are focused on identifying and addressing psychosocial problems using cognitive-behavioural techniques [19].

In 1999, Dominic H. Lam, Steven H. Jones, Peter Hayward and Jenifer A. Bright published the manual "Cognitive Therapy for Bipolar Disorder: A Therapist's Guide to Concepts, Methods and Practice." It also features a 20-session program. The first 5 are directed to gather a clinical history and to introduce CBT, defining a schedule, creating a list of goals and promoting self-monitoring. In a second phase, the main focus is the monitoring of thoughts and changing dysfunctional thoughts. Behavioural techniques are introduced, such as timing of activities and behavioural experiments. There is also a psychoeducational component directed to treatment adherence and prevention of relapse. The last 3 sessions prepare the patient for the end of the therapy. Learned techniques are reviewed and several problems are also addressed, mainly related to self-monitoring, interpersonal relationships and stigma [21].

In 2002, the manual "Bipolar Disorder: A Cognitive Therapy Approach" was published by Cory F. Newman, Robert L. Leahy, Aaron T. Beck, Noreen Reilly-Harrington and Laszlo Gyulai. This differs slightly from previous ones, because it does not present a structured plan for each session and it does not set a number of sessions. The first part is psychoeducational in nature, approaching the disease and psychotherapy. In the second part, cognitive-behavioural techniques are introduced, as timing of activities and monitoring thoughts. The third part is devoted to treatment adherence, including its importance, difficulties and techniques that can help the patient. Finally, the sessions are dedicated to interpersonal relationships. Stigma and self-blame are also addressed [22].

These manuals address the main objectives of the CBT: psychoeducation, relapse prevention and problem solving. The three have been assessed in different studies.

The present review intends summarise the evidence on the effectiveness of CBT for BD.

## Methods

A literature search on PubMed database was conducted, considering articles published until November 2016. Search results were manually reviewed, and relevant studies were selected for inclusion as appropriate. Studies on paediatric population were excluded.

## Results

### Effectiveness of Cognitive-Behavioural Therapy for Bipolar Affective Disorder

#### *Individual CBT*

CBT has been the most studied psychotherapeutic intervention for BD, as in most areas of psychiatry.

In 1984, a study to assess adherence to lithium therapy it was carried out in 28 patients. One group received drug treatment and the other also received an intervention based on CBT principles (6 sessions). The latter group demonstrated increased compliance, fewer hospitalisations and lower recurrence rates [23].

In 1999, Zaretsky et al. compared results of 20 sessions of CBT in two groups of depressed patients (11 unipolar and 11 bipolar). They concluded that both groups achieved similar levels of reduction in depressive symptoms, but bipolar patients improved less in pervasive dysfunctional attitudes [24].

In 2000, Lam et al. conducted a study with 25 bipolar patients randomised into two groups, one group had treatment as usual and other group also received 12 to 20 CBT sessions. The psychotherapy group had fewer episodes, higher social functioning, better coping strategies for bipolar prodromes, less fluctuation in mood symptoms, less hopelessness and better compliance to medication [25].

In 2001, a study evaluated the effectiveness of CBT as an adjunct to pharmacological therapy. For six months, a group of 21 patients was subjected to 25 CBT sessions. In the end, this group was compared to a group of 21 patients on the waiting list, showing a statistically significant improvement in symptoms and functioning. Eighteen months after the start of psychotherapy, patients showed a 60% reduction in relapse rates and fewer hospital admissions, comparing to the eighteen months prior to the beginning of the psychotherapeutic treatment [26].

A study aiming to test long-term effects of CBT on reduction of BD's residual symptoms evaluated 15 patients who relapsed during lithium therapy. It concluded that CBT was associated with a significant reduction of residual symptomatology [27].

Lam et al. conducted a randomised study of 103 patients with BD-I in order to evaluate the use of cognitive therapy in preventing relapse. One group received drug treatment and follow-up psychiatric consultations and another group also received 14 sessions of cognitive therapy over six months, plus two more sessions in the following semester. During the 12-month period, the latter group had fewer and shorter episodes, fewer hospitalisations, fewer symptoms, less fluctuation in manic symptoms and significantly higher social functioning [28]. Two years after finishing the six months of therapy, patients were re-evaluated. It was concluded that the group that received cognitive therapy had a lower relapse rate, however, this effect was mainly observed in the first year [29].

In 2006, a randomised, controlled study with 52 BD patients evaluated the efficacy of schema therapy (a CBT subtype). A group of 27 patients received the usual treatment and a group of 25 patients also received 20 weekly psychotherapy sessions. After six months of treatment, the latter group had less severe depressive symptoms and less dysfunctional attitudes. After twelve months, the same group showed a trend towards fewer symptoms of mania

and improved self-control. It was also concluded that the benefits of CBT are more evident in the acute treatment, decreasing over time [30].

In the same year, Scott et al. conducted a randomised multicenter study with 253 patients (including patients with more severe disease, with comorbidities and in different stages of the disease). A group of 127 patients was subjected to 20 sessions of CBT, however, only 40% achieved the objectives and about 25% attended less than 13 sessions. After 18 months, no differences were found between this group and the control group. In a post-hoc analysis, it was concluded that adjunct CBT is more effective than treatment as usual only in individuals with less than 12 previous episodes [31].

In 2010, 40 patients with refractory bipolar disorder were randomised into two groups, one with treatment as usual and other with combined treatment (pharmacological, psychoeducational and CBT). The latter showed less hospitalisations and reduction of mania, depression, anxiety and inadaptation [32].

In 2014, a study evaluated the effectiveness of brief CBT for severe mood disorders in an acute setting, with a total of 951 patients (857 with major depression disorder and 94 with BD). It found significant reductions in depressive symptoms, worry, self-harm, emotional lability, and substance abuse. Also demonstrated significant improvements in well-being and interpersonal relationships [33].

Recently, a randomised controlled study evaluated the effectiveness of a new intervention focused on recovery in 67 patients with recent onset of disease. A group of 34 patients received standard treatment and 33 patients also received CBT centred on recovery (an average of 14 to 15h). After 12 months, this therapy showed better results than just the usual treatment in personal recovery. This group also showed longer inter-episode periods during the 15-month follow-up [34].

Parikh et al. assessed combined treatment with medication and psychotherapy (CBT or psychoeducation) in 160 bipolar patients. After a 72 weeks follow-up, patients were euthymic in about 65% of time [35].

A study on individual recovery-focused CBT intervention randomised 67 BD patients into two groups, 34 patients had treatment as usual and 33 patients also underwent CBT. It was concluded that recovery-focused CBT improved personal ratings of recovery and increased time without mood episodes [36].

A recent meta-analysis regarding most of these studies concluded that CBT has a short-term efficacy in reducing relapse rate of BD and improving the severity of mania, but has no effect on depression level. Also, these effects can be weakened with time [37].

#### *Group CBT*

In 1995, Palmer et al. evaluated the effectiveness of group CBT on pharmacotherapy maintenance in six BD patients, during 17 weeks. Two patients showed significant im-

provement and, globally, an improvement in social adjustment was demonstrated [38].

Group mindfulness based CBT (8 sessions) was associated with greater reduction in depressive and anxiety symptoms in a group of 68 patients (75% unipolar and 25% bipolar, in euthymic state) [39].

Comparing group CBT (14 sessions) with treatment as usual, the first was associated with significant reductions in symptoms of depression, mania and anxiety and a reduction in the frequency and duration of mood episodes [40, 41].

On the other hand, another study with 18 CBT group sessions found no differences in time to recurrence or number of episodes, comparing to treatment as usual. However, the median time to first recurrence was higher in the psychotherapy group [42].

A study, recently published, compared group CBT (20 sessions) with only pharmacotherapy and evaluated the patients after 6 months, 12 months and 5 years. The psychotherapy group showed less depressive and anxiety symptoms, better social functioning and fewer hospitalisations than controls, even after 5 years [43].

#### *Third Wave CBT*

Mindfulness-based cognitive therapy (MBCT), combining CBT with meditation techniques, has been a recent focus on many diseases, including BD.

In 2008, a study randomly assigned 17 BD patients and 51 patients with unipolar depression to an 8-week group MBCT intervention or to a wait-list control group. The MBCT groups reported reduction in depressive symptoms. BD patients also reported lower anxiety symptoms [39].

In the next year, a group of 22 BD patients underwent eight MBCT sessions, achieving reductions in depressive symptoms and suicidal ideation and, less markedly, in manic and anxiety symptoms [44].

In 2010, 15 BD patients, of a group of 23, attended at least four MBCT sessions. Although the patients benefited from the program, mindfulness practice decreased over time [45].

One year later, a study was published regarding cognitive functioning changes after MBCT on BD patients. Improvements in executive functioning, memory, and ability to initiate and complete tasks were reported, but were not sustained over time [46].

In 2012, a group of 12 BD patients (and 8 controls) underwent electroencephalography studies (EEG) before and after an 8-week MBCT program. An improvement in the right frontal cortex was reported, with enhancements in attentional readiness and attenuated activation of non-relevant information processing during attentional processes [47].

In the same year, a different study evaluated the effects of 12 MBCT sessions on 12 BD patients with residual symptoms. Patients showed lower residual depressive mood symptoms, less attentional difficulties, and increased emotion regulation abilities, psychological well-being, positive affect and psychosocial functioning, even after 3 months [48].

In 2013, Perich et al. compared MBCT to treatment as usual in a sample of 95 BD patients. They didn't find any significant differences in time to recurrence or number of recurrences of mood episodes. A significant difference in anxiety symptoms was found [49].

The same group also analysed the association between meditation practice and treatment outcome in MBCT in a sample of 34 BD patients. It was suggested that, if mindfulness meditation was practiced at least 3 times a week throughout the program, there would be improvements in depression and anxiety symptoms [50].

In another study published in the same year, a group of 23 BD patients underwent neuropsychological testing and functional magnetic resonance imaging before and after an 8-week MBCT intervention (7 were wait listed for therapy but also tested). Following MBCT, patients improved in anxiety and emotional regulation, corresponding to increased activations in the medial pre-frontal cortex. They also showed improvements in tests of working memory, spatial memory and verbal fluency compared to the BD patients wait listed [51].

#### **Comparing CBT with other psychotherapeutic interventions**

In the context of the "Systematic Treatment Enhancement Program for Bipolar Disorder" (STEP-BD), 152 bipolar patients in depressive phase were randomised: 84 in intensive psychosocial intervention groups (CBT, IPSRT and FFT) and 68 underwent three sessions of psychoeducation. Patients undergoing intensive psychotherapy showed higher recovery rates and shorter times to recovery. No statistically significant differences were found between CBT and the other psychotherapies (IPSRT and FFT) [52].

In 2008, 79 bipolar patients were randomised into two groups, one that received 7 sessions of psychoeducation and other that received the same sessions followed by 13 CBT sessions. During one year, the latter group had 50% fewer days with depressed mood and reduced need for antidepressants [53].

In 2012, 76 bipolar patients were randomised into two groups of psychotherapy, one group received CBT and the other supportive therapy, in a total of 20 sessions over 9 months. There were no differences between groups in mood symptoms or relapse rates [54].

In the same year, Parikh et al. compared CBT with psychoeducation. 204 bipolar patients were assigned into two groups, receiving 6 sessions of group psychoeducation or 20 individual CBT sessions. They didn't find a significantly greater benefit in the CBT group, despite being a longer and individualised treatment [55]. Later, the authors analysed a subsample of 119 patients to investigate changes in coping styles in response to early symptoms of mania and concluded that both groups had similar improvements in symptom burden. Only the CBT group presented a decrease in denial and blame [56].

In 2015, a sample of BD-I patients with insomnia was

randomly distributed into two groups for 8 sessions of either a bipolar disorder-specific modification of CBT for insomnia or psychoeducation. At the 6-month follow-up, the CBT group had lower relapse rates and fewer days in a bipolar episode. Both CBT and psychoeducation showed improvement in sleep and functional impairment [57].

A recent review on psychosocial interventions for BD concluded that CBT, MBCT, IPSRT, FFT and psychoeducation were effective in reducing depressive symptoms. Psychoeducation and CBT are associated with longer euthymic periods, and MBCT improves depressive and anxiety symptoms [58].

## Discussion and Conclusions

Several psychotherapies have been studied as an adjunct treatment for BD, being CBT a great example of positive results. Individual CBT has been associated with lower recurrence rates [23, 26, 28, 29, 37, 57] and longer euthymic periods [34-36, 58]; fewer [25, 28, 32] and shorter [28, 57] mood episodes; less hospitalisations [26, 28, 29, 32]; improvement of mood symptoms [25, 26, 28], with reduced depressive symptoms [24, 33, 58], less severe depressive symptoms [30], fewer mania symptoms [30, 37], and also less residual symptoms [27]; reduced anxiety [32]; improvement in sleep [57]; less self-harm and substance abuse [33]; increased compliance to treatment [23, 25]; better results on personal recovery [34, 36]; improvement on global functioning [26, 57] and social functioning [25, 28]; improvement in well-being and interpersonal relationships [33]; better coping strategies for bipolar prodromes [25]; improved self-control [30]; and less hopelessness [25], emotional lability [33], inadaptation [32] and dysfunctional attitudes [30]. One study found no differences, which included patients in all phases of disease [31].

Group CBT has been also associated with a reduction of frequency and duration of episodes [40, 41]; fewer hospitalisations [43]; reduction in symptomatology, with less manic symptoms [40, 41] and less depressive and anxiety symptoms [39-41, 43]; and better social functioning [38, 43]. One study found no significant differences, but stated that the time to first recurrence was higher with psychotherapy [42].

MCBT was associated with less anxiety [39, 44, 49, 51, 58] and depressive symptoms [39, 44, 48, 58]; improvement in suicidal ideation and manic symptoms [44]; improvement in cognitive functioning [46-48, 51], emotion regulation [48, 51] and psychological well-being, positive affects and psychosocial functioning [48].

No statistically significant differences were found comparing CBT with FFT and IPSRT [52], with supportive therapy [54] and with psychoeducation [55, 56]. One study found that adding CBT to psychoeducation had benefits, with a great reduction in depressed mood and need for antidepressants [53], and other study comparing CBT to psychoeducation concluded that CBT had lower relapse rates and shorter mood episodes [57].

Limitations on the use of psychotherapy in bipolar patients have emerged: effects decrease over time [29, 30, 37, 45, 46]; efficiency is lower in acute episodes, in more severe cases and in patients with co-morbidities [31]; and lack of human resources trained to apply these techniques [59]. Regarding CBT effects on manic or depressive symptoms, there is some controversy, since some studies concluded that CBT had greater impact on depressive than manic symptoms [24, 30, 33, 58] and a recent meta-analysis concluded that CBT improves severity of mania, but has no effect on depression level [37]. A 2009 review on cost-effectiveness of psychosocial treatments for BD suggested that brief interventions focused in medication adherence and intervention on prodromal symptoms have significant effects on manic symptoms but no impact on depression and, on the other hand, longer interventions have stronger effects on depression than mania [7]. Regarding MBCT, a study found no significant differences in time to recurrence or number of recurrences of mood episodes with MBCT [49].

Some strategies can be used to avert these limitations. In order to prolong the effect of psychotherapy, maintenance sessions can be considered. These are less frequent but still regular, and intend to recall and strengthen the techniques learnt during therapy.

Regarding the use of CBT in more severe cases and with psychiatric comorbidities, the therapy should be adjusted to include other mental problems. Some therapies targeting specific targets are already being studied, as for anxiety [60] and insomnia [61, 62] in BD.

Considering the possibility of a greater impact on depressive than manic symptoms, this can be explained by different perspectives, one of which is the highest frequency of depressive episodes, which can cause a bias in the studies. Furthermore, as stated above, CBT has emerged from a model proposed by Beck intended for unipolar depression, so that, even being adjusted for BD, it can actually be more suitable for depressive episodes.

Finally, the lack of human resources with CBT training in mental health departments can be addressed in different ways. The best way would be to facilitate the training of technicians, making CBT training more available. Shorter programs can be created, which can be extended depending on the patient's needs. There are also recent studies with CBT programs based on the Internet [63, 64]. If these programs show consistent results, it is possible to increase the accessibility of this therapy to patients.

This review has some limitations, since it provides a summary of an extensive search for the relevant literature on this theme, not a patient-wise meta-analysis.

Regardless of these limitations, the gain that has been demonstrated with the use CBT for BD is evident. Investment in this area is undoubtedly critical.

### Abbreviations

BD: Bipolar affective disorder; BD-I: Bipolar I Disorder; BD-II: Bipolar II Disorder; CBT: Cognitive-Behavioural Therapy; FFT: Family Focused Therapy; IPSRT: Interpersonal and Social Rhythm Therapy; MBCT: Mindfulness-based cognitive therapy; STEP-BD: Systematic Treatment Enhancement Program for Bipolar Disorder

### Competing interests

The author declares no conflict of interest.

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