

Effects of Metacognitive Therapy on Metacognitive Beliefs, Dysfunctional Attitudes, and Psychosocial Functioning among clients with Bipolar Disorder

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ABSTRACT

Background: Bipolar disorder (BD) is a chronic and recurring psychiatric condition that consists of manic and depressive episodes that may alternate, and associated cognitive and functional deficits often persist in periods of euthymia. Nonetheless, a large percentage of these patients do not obtain full functional recovery. This study aimed to evaluate the effects of Metacognitive Therapy on metacognitive beliefs, dysfunctional attitudes, and psychosocial functioning among hospitalized patients with bipolar disorder.

Methods: A quasi-experimental design recruited 18 inpatients with a diagnosis of bipolar disorder. Participants received a total of eight sessions of (Metacognitive Therapy) MCT in addition to standard care. Measures of Metacognition Questionnaire-30 (MCQ-30), Dysfunctional Attitudes Scale (DAS), and Global Assessment of Functioning (GAF) were collected at baseline, 1 month and 3 months post-intervention. Descriptive statistics and paired-samples t-tests were performed.

Results: All domains showed significant pre- to post-treatment improvements. MCQ-30 scores showed a significant decrease in how they endorse maladaptive metacognitive beliefs on all subscales. There were significant reductions in DAS scores at post-test reflecting reduced dysregulation of cognitive schemas about the self and others (pre: 220.83 ± 3.11 ; post 96.50 ± 6.93 ; $p < .001$). Client GAF scores pre and post intervention revealed a statistically significant difference of 31.56 ± 9.36 to 59.50 ± 10.27 $p < .001$ indicating better psychosocial functioning. These benefits were sustained at three-month follow up.

Conclusion: Metacognitive Therapy represents a viable and effective intervention for enhancing cognitive and functional outcomes among hospitalized bipolar individuals. The results indicate that MCT should be considered for inclusion in the treatment options available in inpatient psychiatric hospitals even in low-resource countries like Palestine where challenges with metacognitive and functional struggles often remain.

Keywords: Bipolar disorder; Metacognitive therapy; Psychiatric inpatients; Psychosocial functioning; Palestine.

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INTRODUCTION

Bipolar disorder (BD) is a chronic and episodic psychiatric condition categorized by the occurrence of manic or hypomanic episodes alternating with depressive episodes. The disorder ranges in prevalence from 2–4% of the worldwide population and is one of the most common causes of disability associated with psychiatric disorders more generally ¹. Apart from episodic symptoms, cognitive impairment, lack of insight, and psychosocial dysfunction are often present in individuals with BD between episodes and during periods of recovery. So, they are associated with high rates of relapse, treatment resistance, and societal costs in the form of unemployment, disability-adjusted life years, and cost of care within the health-care system ².

While medication management is clearly an integral component of treatment for bipolar disorder (BD), the role

of medication has been somewhat constrained in that it does not fully restore psychosocial functioning nor address cognitive dysfunction. Conventional psychological therapies, such as cognitive behavioral therapy, offer symptom ‘moderate’ relief but are not typically associated with long-term functional recovery from the disorder itself ³. More recently, Metacognitive Therapy (MCT) has emerged as a promising intervention for mood and, more recently, psychotic disorders. Whereas CBT seeks to modify the contents of cognitions, metacognitive therapy seeks to modify metacognitive processes responsible for maintaining emotional and cognitive dysregulation, like the cognitive-attentional syndrome (CAS) of worry, rumination and monitoring for threat ⁴.

A deficit of metacognition has been implicated in bipolar disorder. Van Camp et al. (2019) found that people with BD possess “maladaptive metacognitive beliefs” and

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“impaired metacognitive monitoring”, generally overestimating the capacity of their own thoughts and underestimating the emotional implications of their thoughts. These deficits are linked to lack of insight into illness, difficulties regulating emotions and lack of interpersonal effectiveness which are all central aspects of the disorder that contribute to a lack of recovery and increased likelihood for relapse. Thus, also addressing these metacognitive distortions may contribute to achieve more stable therapeutic effects in BD ⁵.

The applicability of MCT to enhance metacognitive awareness and emotional regulation in BD has found some emerging support. Similarly, Haffner and colleagues (2017) found substantial gains in psychosocial functioning and quality of life after an intervention based on MCT among euthymic bipolar outpatients ⁶. More recently, Rotenberg et al. (2025) demonstrated that MCT enhances the latency of emotion recognition within a RCT including remitted individuals with BD. But, its application as an inpatient approach has been less proven, especially for the acutely ill in low resource settings ⁷.

Plus, the trajectory of severe psychiatric conditions is aggravated by systemic stressors that are notoriously difficult to escape from in the context of Palestine, including political instability, economic hardship and lack of access to therapeutic services ⁸. Therefore, in these contexts, there remains a need for scalable and low-cost interventions such as MCT which address trans diagnostic mechanisms.

While research supports metacognitive treatment among outpatients and remitted bipolar patients, research supporting MCT effectiveness among hospitalized patients with BD is sparse, especially in low-resource settings such as Palestine. Therefore, this study sought to identify whether MCT could improve metacognitive beliefs, dysfunctional attitudes, and psychosocial functioning among hospitalized patients with bipolar disorder in Palestine.

The present study aimed to evaluate the efficacy of MCT among hospitalized Palestinian patients diagnosed with bipolar disorder. Specifically, it examined the effects of MCT on metacognitive beliefs, dysfunctional attitudes, and psychosocial functioning.

MATERIALS AND METHODS

Design:

A quasi-experimental, one-group pre-post intervention design was used to assess the impact of MCT on clients with bipolar disorder.

Setting and Sample: The study was done in Bethlehem's Psychiatric Hospital in the West Bank, Palestine. It is the main referral center for psychiatric cases within all Palestinian governorates and for complex and resistant mood disorders.

Participants were recruited through a purposive sampling strategy with a focus on diagnostic and clinical criteria. A

total of 26 participants meeting DSM-5 criteria for a diagnosis of bipolar disorder were initially recruited as determined by the attending mental health team's psychiatric consultation. Of these, 18 participants completed all stages of the intervention and were examined in the analysis of outcomes. Eight participants did not complete the intervention because of early discharge (n = 6), and clinical deterioration preventing participation (n = 2).

Eligible participants: 1) were diagnosed with bipolar disorder of any type in accordance with DSM-5 criteria, 2) were between 18-60 years of age, and 3) patient was an inpatient at the time of data collection, thus providing consistent attendance at participation at the intervention sessions as required. Patients with any sign of important levels of cognitive impairment interfering with the understanding of the therapeutic content, a current diagnosis of substance use disorder, or the presence of acute psychotic symptoms at baseline assessment that could compromise the patient's engagement in structured metacognitive therapy (MCT) sessions were excluded. The chosen criteria were to obtain a more homogenous sample that would be able to cognitively and reflectively engage with MCT, while also being representative of a clinically relevant inpatient population within the context of psychiatric care that is low-resource.

Ethical Considerations:

Approval was obtained from the institutional ethics committee at Palestinian ministry of health. Participants provided informed consent and were assured of confidentiality and the right to withdraw.

Instruments:

Measures Quantitative data was gathered using a socio-demographic survey and a series of standardized psychometric measures. The choice of all instruments was based on psychometric validity, reliability, applicability to the study's objectives, and appropriateness among psychiatric inpatient populations.

- **Socio-demographic questionnaire:** Covered variables such as age, gender, residence, education, and marital status.
- **Metacognition Questionnaire-30 (MCQ-30):** The MCQ-30 is a self-report measure of metacognitive beliefs and processes on five dimensions: a) positive beliefs about worry; b) negative beliefs regarding lack of control and danger; c) cognitive confidence; d) negative beliefs regarding the inability to control one's thoughts; and e) cognitive self-consciousness ⁹. Items are rated on a 4-point Likert scale ranging from 1 (“do not agree”) to 4 (“agree very much”), such that higher scores are indicative of higher levels of maladaptive metacognitive beliefs.
- **Dysfunctional Attitude Scale (DAS):** The DAS is a 40-item self-report scale created to measure maladaptive cognitive schemas of perfectionism, need for approval, and control ^{10,11}. Items are rated using a

7-point Likert scale, where 1 “totally disagree” and 7 “totally agree”, with higher scores reflecting more dysfunctional attitudes. The DAS has been widely utilized in the research of mood disorders and has demonstrated excellent internal consistency ($\alpha > .90$).

- **Global Functioning Scale (GAF):** The GAF is a 0 - 100 point clinician rated scale used to measure general psychological, social, and occupational functioning¹². Higher scores reflect better functioning and a score of less than “40” reflects “major impairment in at least two areas”.

Intervention

The treatment provided within this study was an 8-session metacognitive therapy paradigm provided in the course of 4 weeks at the hospital as an adjunct to regular psychiatric treatment. They were based on the structure and therapeutic guidelines, as well as major session content, of metacognitive therapy for metacognitive dysfunction in psychological disorders. The protocol was culturally adapted to the specific clinical population of Palestinians suffering from bipolar disorder.

Structure and Format: Sessions were held at the Bethlehem Psychiatric Hospital in a private, sound-proof room that ensured anonymity and minimized distractions, and lasted approximately 45-60 minutes. The sessions were conducted in small groups of three to five participants to foster interaction but still allow for individual attention. All sessions were conducted by the principal investigator, who had received formal training in MCT and had experience working with psychiatric inpatients, in order to maintain fidelity to the intervention.

Session Content: The MCT program was adapted from Wells’ (2011) manualized protocol for mood disorders⁴, with minor modifications for cultural and linguistic appropriateness in the Palestinian context. Each session addressed a specific therapeutic theme:

1. **Psychoeducation and Introduction to the Metacognitive Model –.**
2. **Identifying and Challenging Positive Beliefs about Worry .**
3. **Addressing Negative Beliefs about Uncontrollability and Danger of Thoughts.**
4. **Attention Training Technique (ATT).**
5. **Detached Mindfulness.**
6. **Challenging Negative Beliefs about the Need to Control Thoughts.**
7. **Developing New Coping Strategies.**
8. **Relapse Prevention and Consolidation.**

Participants continued to receive standard inpatient care throughout the study, including pharmacotherapy, routine psychiatric follow-up, and access to occupational therapy, recreational activities, and nursing care. The intervention

was therefore supplementary rather than substitutive, ensuring no disruption of existing treatment regimens.

STATISTICAL ANALYSIS:

Data were analyzed using SPSS. Descriptive statistics summarized demographics and scales scores.

Chi-square tested associations between socio-demographic factors and symptom improvement. Paired-samples t-tests were conducted to compare scores between baseline and 1-month follow-up, baseline and 3-month follow-up, and 1-month and 3-month follow-up assessments. A p-value of less than 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

The present study explored the efficacy of Metacognitive Therapy in improving treatment outcomes for clients with a diagnosis of bipolar disorder who were hospitalized in Palestine. Results indicate clinically meaningful and enduring changes in metacognitive beliefs, dysfunctional attitudes, and psychosocial functioning at 3-month follow up. The findings support the feasibility of MCT as a short-term, evidence-based intervention with this population and contribute to the literature by providing a setting for its application in an inpatient, low-resource context.

As shown in Table 2, the large reductions in the MCQ-30 subscales assessing positive beliefs about worry, negative beliefs about uncontrollability and danger, cognitive confidence, negative beliefs about thoughts, and cognitive self- consciousness suggest that participants were able to show greater cognitive flexibility and less activation of the Cognitive Attentional Syndrome (CAS). This pattern is in line with the Self-Regulatory Executive Function (S- REF) model, according to which, “emotional disorders are perpetuated by excessive self- focused attention and negative metacognitive beliefs”⁹. In line with this framework, Batmaz et al. (2021) reported that individuals with bipolar disorder demonstrate elevated levels of cognitive self-consciousness, maladaptive metacognitive beliefs, and ruminative thinking. all of which were successfully addressed by MCT in our sample¹³.

The decrease in DAS scores, from 220.83 to 96.50, also suggests a reorganization of deeply held maladaptive beliefs about perfectionism, need for approval, and control. Such cognitive distortions are associated with emotional dysregulation and higher risk of relapse in BD more generally¹⁴. The maintenance of the effect at three months suggests that MCT has a lasting influence on fundamental cognitive structures, which may not necessarily be the case with more traditional CBT techniques. This is especially the case for those who do not respond sufficiently to medication alone, as argued theoretically by Batmaz et al. (2021), who advocated the use of metacognitive treatment in addition to standard care¹³.

Functional gains were evident in the increase in GAF scores from 31.56 to 59.50, indicating movement from severe to moderate impairment. This shift reflects real-world improvements in occupational, interpersonal, and

daily functioning. Although improvements in functioning were not statistically significant in the RCT by Rotenberg et al. (2025), they did report enhanced emotion recognition latency—a key facet of social cognition. Our findings suggest that MCT, when applied during hospitalization rather than remission, may yield broader functional improvements by intervening earlier in the recovery trajectory⁷.

Socio-demographic factors also played a role, as detailed in Table 1. Males, younger age (25-35) and higher education were all significantly associated with better outcomes in chi square analyses. This is consistent with the literature on younger and more educated people being more metacognitively flexible and capable of integrating abstract therapeutic principles¹⁵. Also, males could be less likely to engage in ruminative processing and more reactive to skills-based interventions. These findings may suggest that demographic characteristics could influence treatment response; however, larger studies are required.

Although the focus of the current study was on the symptoms and functioning of the individual, it is important

to note the systemic influence of bipolar disorder, especially in families. In this respect, Hasani et al. (2025) found that MCT was effective in enhancing family functioning in parents of children with bipolar II disorder. Among the positives they found, such as better communication, emotional responsiveness, and control of behavior, is the benefit of a metacognitive perspective at more than just the individual level. While our study did not directly address family members, the gains seen in patient functioning could indirectly lead to better relationships and less caregiver burden¹⁶.

These findings collectively highlight the Trans-diagnostic and systemic applicability of MCT for targeting mechanisms common to emotional and functional impairment in bipolar disorder. The format, cultural applicability, and short duration of the intervention are particularly relevant for a low-resource context like Palestine, where psychiatric services are still limited and heavily medicalized. Also, the clear evidence of its effectiveness on both symptoms and function supports recommendations for its use as a standard treatment in the psychiatric care of mood disorders.

Table 1. Socio-demographic Characteristics of Clients Diagnosed with Bipolar Disorder (N = 18)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	12	66.7
	Female	6	33.3
Age	< 25 years	4	22.2
	25–35 years	7	38.9
	36–45 years	3	16.7
	> 45 years	4	22.2
Location	South	9	50.0
	Middle	6	33.3
	North	3	16.7
Educational Level	Primary	3	16.7
	Secondary	10	55.6
	University	5	27.8
Number of Family Members	Less than 3	1	5.6
	3–5	8	44.4
	More than 5	9	50.0
Marital Status	Single	6	33.3
	Married	11	61.1
	Divorced	1	5.6
Treatment History	First admission	8	44.4
	Recurrent admissions	6	33.3
	No prior admissions	4	22.2
Other Illnesses	Present	2	11.1
	Absent	16	88.9

Table 2. Mean Scores and Statistical Significance of MCQ-30 Subscales, DAS, and GAF for Clients Diagnosed with Bipolar Disorder (N = 18)

Scale / Subscale	Pre (Mean ± SD)	Post 1 Month	Post 3 Months	p (Pre vs Post 1 Mo)	p (1 Mo vs 3 Mo)	p (Pre vs Post 3 Mo)
MCQ-30 Subscales						
Positive Beliefs About Worry	23.28 ± 1.18	15.28 ± 1.22	16.28 ± 1.14	< 0.001	0.734	< 0.001
Negative Beliefs (Uncontrollability & Danger)	22.11 ± 1.32	15.11 ± 1.17	15.10 ± 1.22	< 0.001	0.982	< 0.001

Cognitive Confidence	21.00 ± 1.08	17.00 ± 1.18	16.00 ± 1.13	< 0.001	0.774	< 0.001
Negative Beliefs About Thoughts	24.11 ± 1.26	18.11 ± 1.13	16.11 ± 1.32	< 0.001	0.423	< 0.001
Cognitive Self-Consciousness	23.28 ± 1.36	17.28 ± 1.36	18.28 ± 1.36	< 0.001	0.699	< 0.001
MCQ-30 Total Score	113.78 ± 2.41	82.78 ± 2.38	81.78 ± 2.32	< 0.001	0.621	< 0.001
Dysfunctional Attitudes Scale (DAS)						
DAS Total Score	220.83 ± 3.11	96.50 ± 6.93	97.22 ± 7.89	< 0.001	0.842	< 0.001
Global Assessment of Functioning (GAF)						
GAF Score	31.56 ± 9.36	52.00 ± 10.15	59.50 ± 10.27	< 0.001	0.458	< 0.001

Note: All improvements from pre-intervention to post 1-month and 3-months were statistically significant ($p < 0.001$), except where noted. Post 1 vs. 3-month comparisons were not significant, suggesting sustained improvement without further change.

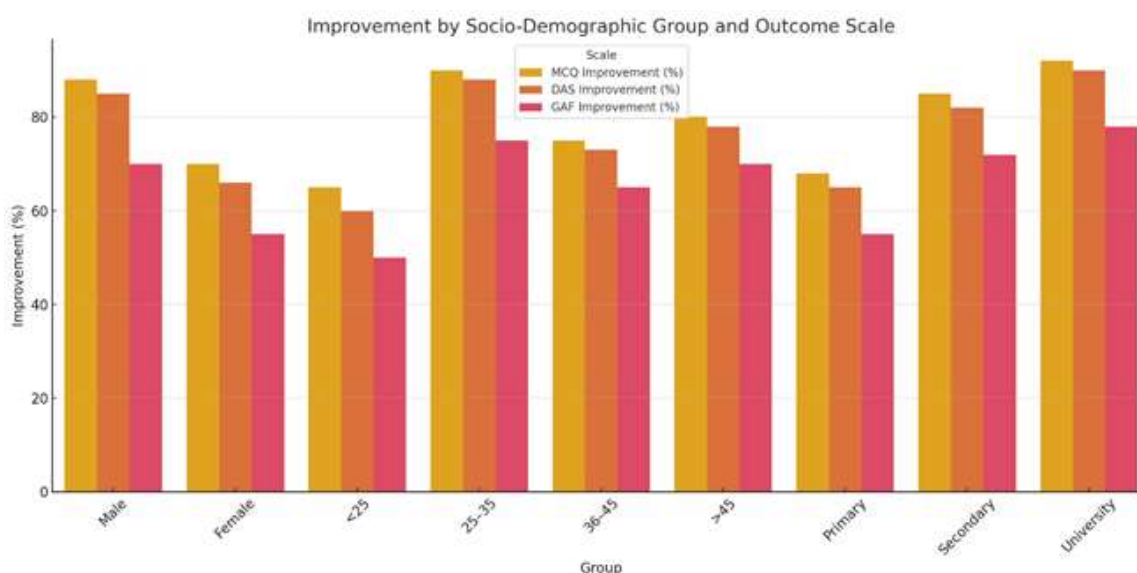


Figure 1: Improvement by Socio-Demographic Group and Outcome Scale

Males, young adults (25–35), and university-educated clients demonstrated the highest improvement percentages across all scales (Figure 1).

CONCLUSION

This study showed that Metacognitive Therapy (MCT), when added to standard inpatient care, significantly improved metacognitive beliefs, reduced dysfunctional attitudes, and enhanced psychosocial functioning in clients with bipolar disorder. These benefits were sustained at three months, suggesting lasting therapeutic effects.

The findings highlight MCT as a practical and effective intervention for bipolar disorder, particularly in low-resource settings like Palestine where treatment options

are limited. Despite the small sample and lack of a control group, results support the integration of MCT into inpatient psychiatric care. Future studies with larger, randomized samples are needed to confirm these outcomes and strengthen the evidence base.

DISCLOSURE STATEMENTS

Ethics approval and consent to participate

This study was reviewed and approved by the **Ethics Committee of Mansoura University and the Palestinian Ministry of Health** (300/2023). All participants were fully informed about the study objectives and procedures and provided written informed consent prior to participation. They were assured of confidentiality,

anonymity, and their right to withdraw from the study at any stage without any consequences to their treatment.

Availability of data and materials

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request. Due to ethical and privacy restrictions related to patient confidentiality, the data are not publicly available.

Conflicts of interest

The authors declare that they have no conflicts of interest related to this study.

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