Research article

Comparison of Metacognitive Beliefs Between Patients with Unipolar Depression and Bipolar Depression

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ABSTRACT

Objective: The aim of this article is to compare differences in metacognitive beliefs between bipolar disorder type I depressed (BPD1) patients with Unipolar Depression (UPD) patients, and a control group; and to discuss the relationship between metacognitive beliefs and depression parameters.
Methods: Sixty six consecutive outpatients with a diagnosis of depressed BPD1, 70 patients with UPD and 70 healthy controls were enrolled in the study. Following assessment with the Sociodemographic Data Form, Structured Clinical Interview for DSM-IV (SCID-I), Hamilton Depression Rating Scale (HAM-D), Hamilton Anxiety Rating Scales (HAM-A), Young Mania Evaluation Scale, and the Metacognition Questionnaire-30 (MCQ-30).
Results: UPD and BPD1 patients included in the study had higher scores in metacognitive beliefs other than positive beliefs compared with healthy controls ($p<0.05$), but no significant difference was found between the BPD1 and UPD groups ($p>0.05$). A statistically significant positive correlation was observed between the HAM-A, HAM-D scores and MCQ-30 scores in UPD group ($p<0.05$) but not in BPD1 group ($p>0.05$).
Discussion: The metacogitive structures of UPD and BPD1, may be helpful in identifying and choosing the right treatment modality. We think that our results may have implications for the metacognitive approaches in the treatment of BPD1.

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Keywords: Bipolar disorder, unipolar depression, bipolar depression, metacognition, metacognitive beliefs

Introduction

Bipolar Disorder (BP) is a chronic, disabling disorder and 40% misdiagnosis rate between unipolar and bipolar depression (BPD) has been reported [1,2]. To solve this issue, many researchers have proposed various methods of distinguishing Unipolar Depression (UPD) and BPD [3]. Previous researches have documented that cognitive structures of these diseases may play an important role in the distinction of BPD and UPD [4]. Batmaz et al. showed that the bipolar depressed patients had significantly higher need for approval and dysfunctional attitude scale scores than the unipolar depressed patients [4]. Since the cognitive behavioral treatment (CBT) is one of the effective ways of the treatment of BPD [5-7], it may be suggested that understanding metacognitions may be important in treatment. In both the CBT and the Metacognitive Therapy (MCT) approaches, the content of beliefs and thoughts identifies the psychopathology [8].

Metacognition is defined as knowledge, belief, and cognition about person's own cognitive system [9]. As Wells and Matthews has remarked, metacognition can be defined as "thinking about thinking" [10]. The literature on metacognition presents a variety of approaches that maintenance of psychopathology is related to the cognitive attentional syndrome (CAS) which includes various forms of misdirected coping and self-regulatory behaviors, such as thought supression and avoidance as well as sustained thinking such as rumination, worry, and threat-oriented attention [11]. Metacognitive belief includes five dimensions give rise to the CAS [12]. The results offered by Papageorgiou support the application of metacognitive model in depressive disorder [13]. This clinical model hypothesis suggests that positive metacognitions which are beliefs related to the use of one's worry as a problem-solving method, initiate ruminations. Inefficiency of positive metacognitions in the resolution of problems give rise to negative metacognitions which are beliefs regarding the uncontrollability of ruminations. Negative metacognitions lead to the development and maintenance of depression. Clinical decreases in confidence in cognitive functioning result in the development of positive and negative metacognitions [14].

There have been few studies investigating whether the depression-metacognition model of UPD also exists in BPD. Batmaz et al. examined the metacognitions in patients with unipolar and bipolar depression, and the results obtained in the larger sample were not significantly different between the UPD and BPD groups in terms of metacognitions, and higher scores were

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found in the patient group than controls in areas other than positive belief [15]. It may be suggested that the metacognitive model for UPD may also be valid in BPD. However, in a study by Sarisoy et al. [16] comparing metacognitive beliefs among patients with unipolar and bipolar depression; scores for 'uncontrollability and danger' and 'need to control thoughts' were higher in both the UPD and BPD groups than in the healthy controls, and the 'cognitive confidence' scores in BPD patients were higher than those of the healthy controls.

When these studies were examined, it was seen that there was no distinction between BPD groups. In Type 1 Bipolar Disorder (BP1) subtype, existence of a manic episode is sufficient for the diagnosis, while in Type 2 subtype, a depressive episode is necessary [17]. Therefore, it can be thought that the metacognitive processes of these patients may be different. Furthermore, there was no including criteria for the severity of depression and anxiety in the patients included in these studies. In a study investigating the metacognitions of UPD patients with suicide attempts, it was found that cognitive confidence and thought control needs were higher in patients with suicide attempts than those without suicide attempts [18]. In addition, "cognitive self-consciousness" and "need to control thoughts" metacognitive belief scores in BP patients with and without previous suicide attempts were found to different [19]. It may be thought that the severity of depression may be related to metacognitions.

The aim of this study was to investigate the differences in the metacognitive beliefs of mild to moderate Bipolar Type 1 Depression (BPD1) and Unipolar Depression(UPD) patients to contribute to the literature on the determination of the psychotherapeutic goals that can be effective for each disease. Our hypothesis in this study is that the metacognition scores of UPD and BPD1 may be higher than the healthy controls, and there may be differences in terms of the metacognitive processes of UPD and BPD1.

Methods

Sample

The study sample consisted of 70 UPD patients and 66 patients with BPD1 who presented to the outpatient treatment unit of the Bakirkoy Research and Training Hospital for Psychiatry, Neurology, and Neurosurgery (Istanbul, Turkey) between May 2017 and January 2018. A psychiatrist from the research team interviewed with the patients who had been diagnosed with BPD1 and UPD based on The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) diagnostic criteria for the depressive state. Diagnoses were ascertained by means of the Structured Clinical Interview based on DSM-IV axis I criteria [20]. Medical history and previous hospital records of the patients were examined and diagnoses were clarified. Patients who agreed to participate were included in the study. All patients were aged between 18-65 years, had at least primary school education, were in depressive state (i.e., Young Mania Rating Scale score was <8 and Hamilton Depression Scale score was <28). In addition, 70 healthy subjects matched with the patient group in terms of age, gender, and educational status were included as a control group. Healthy controls were selected from volunteer hospital workers and a social sample, friends of the authors. The volunteers were interviewed by the researcher. None of the subjects had past or current personal history of any psychiatric disorder after evaluation with the Structured Clinical Interview non-patient edition [20] .

Individuals with cooperation problems or cognitive impairment as a result of mental retardation, neurological disease or alcohol/drug use; those who had electroconvulsive therapy in the previous six months, and those with a history of psychosurgery or other brain surgery, head trauma, alcohol/drug addiction, and psychotic symptoms were excluded from the study. Oral and written informed consent was obtained from all participants prior to their inclusion and the study was approved by the hospital ethics committee (02.05.2017 date and 22 protocol number).

Instruments

Sociodemographic Data Form

This form was prepared by the researchers to assess the participants' sociodemographic and clinical characteristics. It was completed by the researchers while interviewing the participants.

Young Mania Rating Scale (YMRS)

The YMRS was developed by Young et al. and consists of 11 items, each measuring the severity of a symptom on a scale of 0–4 [21]. The items in the scale encompass the core symptoms of manic episodes. Assessment is based on an interview concerning the patient's state over the previous 48-hour period as well as observations made during the interview. Validity and reliability studies for the Turkish version of the scale were conducted by Karadag et al. [22].

Hamilton Depression Rating Scale (HAM-D)

This scale consists of structured questions and each question is scored on a scale of 0–4. The scale was developed by Hamilton and Williams in 1978 and was adapted to Turkish by Akdemir et al. [23,24]. In this study, it was applied to control the depression variable.

Metacognition Questionnaire-30 (MCQ-30)

The MCQ-30 is a four-point Likert-type scale consisting of 30 items, developed to assess metacognitive beliefs and thought processes related to anxiety [12]. It consists of five factors: (1) positive beliefs about worry, (2) cognitive confidence, (3) uncontrollability and danger, (4) cognitive self-consciousness, and (5) need to control thoughts. A higher score indicates an increase in non-functional metacognitive activity [25]. The adaptation of the scale to Turkish and validity and reliability studies were carried out by Tosun and Irak [26].

Hamilton Anxiety Rating Scale (HAM-A)

The validity and reliability studies of the scale, which was developed by Hamilton in 1959, were made for the Turkish population by Yazıcı and his colleagues in 1998 [27]. In this study, it was applied to control the anxiety variable.

Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I)

The SCID-I is a clinical interview constructed by First et al. for DSM-IV Axis I mental disorders [20]. It was developed to increase diagnostic validity by facilitating the screening of DSM-IV axis I diagnoses, as well as to investigate symptoms. The validity and reliability studies for the Turkish version of the SCID-I were performed by Özkürkçügil et al. [28].

Analysis

The data obtained from the study were evaluated with Statistical Package for Social Sciences (SPSS) 22.0 for Windows for statistical analysis. Mean, standard deviation, frequency and ratio values were used in descriptive statistics of the data. Kruskal-Wallis (Mann-Whitney U test) were used for the analysis of quantitative independent data. In comparison of qualitative data, Chi-Square test in four-chamber and multi-chamber order was used. Correlations were evaluated by Spearman correlation analysis. The results of all analyses were evaluated using a significance level of $p < 0.05$.

Results

There were no statistically significant differences in terms of age, duration of education or gender between the groups. The sociodemographic characteristics of the participants are shown in Table 1.

Clinical characteristics of UPD and BPD1 groups were compared. Age of onset in UPD was significantly higher than the BPD1 group (p <0.05) (Table 2).

MCQ-30 total score and subscores for 'uncontrollability and danger', 'cognitive self-consciousness' , 'need to control thoughts' and 'cognitive confidence' were significantly lower in the control group compared to both the UPD group (p<0.001) and BPD1 group (p<0.001). However, there were no significant differences between the UPD and BPD1 groups in terms of MCQ-30 total score and subscores for 'uncontrollability and danger', 'cognitive self-consciousness' , 'need to control thoughts' and 'cognitive confidence' (p>0.05). There was no statistically significant difference in terms of 'positive belief about worry' between the groups (p>0.05). Table 3 shows the comparison of MCQ-30 scores between the patient and control groups.

HAM-D, HAM-A scores were significantly lower in the control group compared to both the UPD group (p<0.001) and BPD1 group (p<0.001). However, there were no significant differences between the UPD and BPD1 groups in terms of HAM-D score and YMRS score (p>0.05). HAM-A score was significantly lower in the BPD1 group compared to the UPD group (p<0.001)(Table 4).

A statistically significant positive correlation was observed between the HAM-A, HAM-D scores and need to control thoughts, uncontrolability and danger, metacognitions total scores in UPD group (p<0.05). A statistically significant positive correlation was also observed between positive beliefs about worry and HAM-D scores in UPD group (p<0.05). There was no significant correlation among HAM-D, HAM-A scoresand metacognitionsin BPD1group (p>0.05) (Table 5).

Table 1: Comparison of Sociodemographic Variables Between the Groups

		UPD	BPD	Control	p
		m±sd n/%	m±sd n/%	m±sd n/%	
Age		35.9±11.7	37.6±11	37.6±5.5	0.204[1]
Sex	Female	35 / 50.0%	35 /53.00%	35/ 50.00%	0.921[2]
	Male	35 / 50.0%	31/ 47.00%	35/50.00%	
Duration of Education (years)		8.9± 3.7	8.4±3.9	7.9±2.2	0.429[1]
Occupation	Absent	28 /40.0%	13/ 19.70%	59/ 84.30%	<0.001[2]
	Present	42 / 60.0%	53/ 80.3%	11/15.70%	
Marital Status	Single	26 /37.1%	21/ 31.8%	37/52.8	0.102
	Married	36 /51.4%	35/ 53.0%	30 /42.9%	
	Widow Divorced	8/ 11.5%	10/15.2%	3/ 4.3 %	

[1]: Kruskal Wallis(Mann whitney u test) [2] :Chi-square testi m:mean sd:standard deviation UPD: Unipolar Depression, BPD: Bipolar Depression, n: Number of participants. There were no statistically significant differences in age, education duration, or gender between the groups. Statistically significant differences between the groups were observed in terms of employment (p<0.001).

Table 2: Comparison of the Clinical Characteristics Between the Patient Groups

	UPD	BPD	
	mean±sd	mean±sd	p
Age of onset	28.7 ± 11.9	24.6 ± 8.6	0.041*
Number of total episodes	7.5 ± 16.0	20.1 ± 19.8	<0.001**
Number of depressive episodes (if any)	7.5 ± 16.0	11.7 ± 12.5	<0.001**
Number of hospitalizations (if any)	1.0 ± 3.3	2.4 ± 2.9	<0.001*

UPD: Unipolar Depression, BPD: Bipolar Depression, sd: Standart Deviation
Mann-Whitney U test, *p<0.05, **p<0.001
Clinical characteristics of UPD and BPD groups were compared. BPD group had significantly higher number of total episodes, manic episodes, depressive episodes and hypomanic episodes than the UPD group (p <0.01) . Age of onset of UPD was significantly higher than that of BPD group (p <0.05).

Table 3: Comparison of Metacognitions Between the Groups

	UPD	BPD	Control	p
	m±sd	m±sd	m±sd	
Metacognitions Total	77.2±15.5	75.7±14.5	56.8±11.9	<0.001[1]
Positive Beliefs	11.6±4.8	11.2±4.1	10.1±3.3	0,214[1]
Uncontrolability and Danger	16.5±4.2	16±3.9	11.4±3.7	<0.001[1]
Cognitive Cofidence	14.4±5.7	14.3±5.4	10.6±3.9	<0.001[1]
Need to Control Thoughts	17.6±4.8	16.8±4.8	9.9±3.6	<0.001[1]
Cognitive Self-Conciousness	17.4±3.9	17.4±3.9	15.1±4.4	<0.001[1]

[1]: Kruskal Wallis (Mann-Whitney U test) m:mean sd:standard deviation UPD: Unipolar Depression, BPD: Bipolar Depression, n: Number of participants.
MCQ-30 total score and subscores for 'uncontrollability and danger','cognitive self-consciousness' , 'need to control thoughts' , 'cognitive confidence' were significantly lower in the control group compared to both the UPD group (p<0.001) and BPD group (p<0.001). However, there were no significant differences between the UPD and BPD groups for MCQ-30 total score and subscores for 'uncontrollability and danger', 'cognitive self-consciousness' , 'need to control thoughts' , 'cognitive confidence' (p>0.05). There was no statistically significant difference in 'positive belief about worry' between the groups (p>0.05).

Table 4: Comparison of Hamilton Depression Rating Scale, Young Mania Rating Scale, Hamilton Anxiety Rating Scale Scores Between Groups

	UPD	BPD	Control	p
	mean±sd	mean±sd	mean±sd	
HAM-D score	18.0 ± 4.6	16.0 ± 4.3	0.0 ± 0.0	<0.0011
YMRS score		1.5 ± 1.6		
HAM-A score	20.7 ± 11.3	13.4 ± 8.8	0.0 ± 0.0	<0.0011
[1]: Kruskal Wallis (Mann Whitney U test) SD:standard deviation**: statistically significant at 0.01				

HAM-D: Hamilton Depression Rating Scale, YMRS: Young Mania Rating Scale, HAM-A: Hamilton Anxiety Rating Scale, UPD: Unipolar Depression, BPD: Bipolar Depression, n: Number of participants, SD: Standart Deviation.
HAM-D, YMRS, HAM-A scores were significantly lower in the control group compared to both the UPD group (p<0.001) and BPD group (p<0.001). However, there were no significant differences between the UPD and BPD groups for HAM-D score, and score for YMRS score (p>0.05). HAM-A score was significantly lower in the BPD group compared to UPD group (p<0.001).

Table 5: Correlation of Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale Scores and Metacognitions in Patient Groups

		BPD		UPD	
		HAM-A	HAM-D	HAM-A	HAM-D
Positive Beliefs	r	0.124	0.054	0.134	0.298
	p	0.321	0.667	0.268	0.012
Uncontrolability and Danger	r	0.097	0.054	0.321	0.270
	p	0.436	0.669	0.007	0.024
Cognitive Cofidence	r	0.183	0.149	0.110	0.048
	p	0.141	0.232	0.364	0.690
Need to Control Thoughts	r	0.217	0.055	0.496	0.351
	p	0.080	0.660	0.000	0.003
Cognitive Self-Conciousness	r	0.186	0.096	0.205	0.163
	p	0.136	0.441	0.088	0.177
Metacognitions Total	r	0.190	0.020	0.379	0.038
	p	0.126	0.875	0.001	0.004
Spearman corelation					

HAM-D: Hamilton Depression Rating Scale HAM-A: Hamilton Anxiety Rating Scale, UPD: Unipolar Depression, BPD: Bipolar Depression

A statistically significant positive correlation was observed between the HAM-A, HAM-D scores and need to control thoughts, uncontrolability and danger, metacognitions total scores in UPD group (p<0.05). A statistically significant positive correlation was also observed between positive beliefs about worry and HAM-D scores in UPD group (p<0.05). There was no significant correlation among HAM-D, HAM-A scores and metacognitionsin BPD group (p>0.05).

Discussion

In our study, the differences of UPD and BPD1 patients from healthy controls in terms of metacognitions were examined. UPD and BPD1 patients included in the study had higher scores in metacognitive beliefs other than positive beliefs compared with healthy controls, but no significant difference was found between the BPD1 and UPD groups. These results obtained in our study show differences in various aspects from the previous studies in the literature.

The distinction between UPD and BPD was emphasized on clinical parameters. According to Goodwin and Jamison's study in this context; anxiety, somatic complaints, psychomotor agitation, melancholic depressive features, loss of appetite, weight loss, difficulty in falling asleep, pain sensitivity are reported to be more common in unipolar depression patients compared to bipolar depression and symptoms such as irritability, psychomotor retardation, atypical depressive characteristics, difficulty in maintaining sleep are reported to be more common in bipolar depression patients compared to unipolar depression [29]. It has been suggested that cognitive perspective may contribute to unipolar and bipolar distinction in addition to this clinical symptomatology. In the study conducted with 70 BPD, 189 UPD and 120 healthy subjects including Automatic Thoughts Scale and Dysfunctional Attitudes Scale, it was stated that perfectionist attitude in UPD and BPD was higher than controls, the total score of Automatic Thoughts Scale was higher in unipolars than bipolars and controls and in patients with bipolar disorder than controls, and need for approval was higher in patients with bipolar disorder than in unipolar and controls [4]. Although we could not find significant difference between UPD and BPD1 groups in terms of metacognitions; there was statistically significant correlation between metacognitions and HAM-A and HAM-D scores of patients with UPD while there was not in patients with BPD1. Despite the correlation analysis has been done without separation of patient groups, statistically significant relationship between Automatic Thoughts Scale and depression scores was also found in this study. Patient comparisons according to relationship between depression scores and automatic thoughts scale may be needed to understand the effect of depressive symptoms on the metacognitions.

Metacognitive context has been emphasized after the studies on differentiation from the cognitive perspective. In one study, statistically significant higher scores were obtained in bipolar depression compared to controls in terms of cognitive confidence, and no significant difference was found between unipolar and bipolar depression. Also, no statistically significant difference was found between the groups in terms of self-consciousness and positive beliefs about worry [16]. In our study, although there was no significant difference between patient groups and healthy subjects in terms of positive beliefs about worry, UPD and BPD1 groups scored higher in terms of cognitive confidence and cognitive self-conciousness compared to healthy subjects, but there was no difference between them. There may be several reasons why these results obtained in our study are different from Sarısoy et al.'s. Our primary BPD group consisted only of bipolar type 1 patients, while Sarısoy et al. did not distinguish patients' BP subgroups. Furthermore, there is no including criteria for the severity of depression and anxiety in the patients included in this study. We evaluated the metacognitions of mild to moderate depression in our study. In a study investigating the metacognitions of UPD patients with suicide attempts, cognitive confidence and need to control thoughts were found to be higher in patients with suicide attempts than those without suicide attempts [18]. The severity of depressive symptoms may have led to different results obtained by our study and the study that is conducted by Sarısoy et al.. However, the results of Batmaz et al.'s study with a larger sample of patients with unipolar and bipolar depression in terms of metacognitions are parallel to our study [15]. Accordingly, the metacognitive model in UPD may be considered valid in BPD.

Studying with a large sample size, exclusion of comorbid psychiatric disorders and having a control group were the strengths of our study. On the other hand, our study had significant limitations. Our study design wass cross-sectional. Additionally, it should be taken into account that these results cannot be generalized for all BPD subgroups, because only BPD1 patients with a mild to moderate depression were included in the study. Also unipolar depression patients had a mild to moderate depression. Furthermore, the hospital where the study is conducted serves a more difficult group of patients who may have frequent hospitalizations. Moreover, the BPD1 group constitutes the majority of BPD patients admitted to the hospital. Therefore, only BPD1 patients were included in the study. Furthermore, the use of a self-report instrument (MCQ-30) for metacognitive beliefs is a limitation. Self-reports can be biased and participants may over/underreport their symptoms.

In BPD1, metacognitions do not differ from UPD in our study sample. The metacogitive structures of UPD and BPD, may be helpful in identifying and choosing the right treatment modality. We think that our results may have implications for the metacognitive approaches in the treatment of BPD.

Conflict of Interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors are responsible for the content and writing of the paper.

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