Psychology and Psychotherapy: Theory, Research and Practice (2012), 85, 260–267

The British Psychological Society

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Early maladaptive schemas in bipolar disorder

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Objective. According to the cognitive model of depression, negative schemas, formed in early life, increase susceptibility to depression. The objective of this study was to investigate schemas that are proposed to increase susceptibility of depression in bipolar disorder patients who have had depressive episodes.

Method. Eighteen patients diagnosed with bipolar disorder according to DSM-IV and a healthy control group ($N = 20$) constituted the sample of the study. The Beck Depression Inventory, Young Mania Rating Scale, and Young Schema Scale were applied to patients in order to determine the level of symptoms and schemas.

Results. When the scores obtained from Young Schema Scale were compared between groups, significant differences were observed between bipolar patients and control group on all the schemas except abandonment, emotional deprivation, defectiveness, vulnerability to harm or illness, and approval seeking. The negative schema scores of bipolar patients were significantly higher than those of the control group.

Conclusion. Of all schemas included in the Young Schema Scale, the scores of bipolar group were higher than the scores of the control group. These findings suggest that, in cognitive-based psychotherapeutic approaches for patients with bipolar disorder, it would be more effective to focus on schemas related to the perception and allowance of feelings at the proper time and the instability of self-perceptions.

According to Beck's cognitive psychopathology model, a person's mood and behaviour is determined by cognitive schemas that develop based on the person's prior experience and guides his perception of the world (Beck, Rush, & Emery, 1997). These schemas, based on early life experiences and identifications with important people, consolidate with similar experiences and learning later in life. Additionally, schemas are persistent cognitive structures, can be positive coping mechanisms, or they can be negative and dysfunctional (Young & Lindemann, 1992). Dysfunctional beliefs are closely related to cognitive schemas; therefore, schemas are defined as frameworks that help to organize and interpret information (Sheppard & Teasdale, 2000). For this reason, the term early maladaptive schema can also refer to schemas that play a role

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DOI:10.1111/j.2044-8341.2011.02037.x

in psychopathology. Negative maladaptive schemas that are usually silent in healthy individuals become active with important life events. Once activated, they lead to processing new experiences by means of selective attention and restructuring of past memories via selective recall (Young, 1990). Furthermore, Young (1990) suggested that Beck's cognitive model is not enough to explain and treat personality disorders and long-term problems and indicated that 18 early maladaptive schema play role in psychopathology. Based on these 18 schemas, Young developed the Young Schema Inventory Short Form 3 (YSI-SF3), which is detailed in the Methods section of this paper.

Many risk factors lead to individuals becoming prone to depression. Beck suggested that, in individuals prone to depression, problems in cognitive content and operation play a central role and include cognitive triads, cognitive schemas, and cognitive errors. According to Beck, childhood experiences result in the formation of core ideas, assumptions, and belief systems via learning. These core ideas and beliefs are, at the structural level, schemas. Furthermore, cognitive schemas play an important role in the formation of behavioural patterns as individuals develop rules, attitudes, and assumptions to cope with these schemas and direct their behaviours accordingly. Additionally, cognitive and schematic predispositions are often perceived as filters that trigger changes in mood when stressful life event occur (Ball, Mitchell, Malhi, Skillecorn, & Smith, 2003; Mcginn & Young, 1996). As such, cognitive vulnerability to depression occurs as a result of these underlying dysfunctional beliefs learned from early developmental experiences (Mcginn & Young, 1996).

Various studies have tested hypotheses regarding the negative schemas in depressed patients (Beck, 1967; Clark, Beck, & Alford, 1999; Haaga, Dyck, & Ernst, 1991). However, few studies have explored the effects of negative schemas in bipolar depressed patients. In these few studies, euthymic bipolar patients displayed more dysfunctional beliefs compared to healthy controls. Furthermore, euthymic and hypomanic patients displayed more dysfunctional beliefs compared to unipolar depressed patients (Scott & Pope, 2003; Scott, Stanton, Garland, & Ferrier, 2000). Conversely, Lam, Wright, and Smith (2004) found no difference between bipolar and unipolar depression patients in their study using a 24-item dysfunctional attitudes scale. However, the two groups were found to be different in terms of dysfunctional attitudes related to 'goal attainment' when those suffering from major depressive episode were excluded from the study. In addition, Goldberg, Wenze, Welker, Steer, and Beck (2005) demonstrated that the degree that manic bipolar patients had negative core beliefs was between normal controls and unipolar depressed patients.

The current study aimed to evaluate cognitive schemas in patients with a diagnosis of bipolar disorder, currently in remission. Because cognitive theory considers that schemas are permanent cognitive structures, bipolar patients in remission were selected as the study group in order to examine whether schemas are active during a remission period. The assumption of our study was that, in bipolar disorder patients, negative schemas would be higher than the ones in normal controls, even during a remission period.

Methods

Participants

A total of 18 patients (10 males, 8 females) admitted to Gülhane Military Medicine Academy and diagnosed with bipolar disorder according to DSM-IV criteria were included in the study. Admission criteria were as follows: (1)

meet diagnostic criteria for DSM-IV bipolar disorder, (2) in a remission period of the disease, and (3) have the level of education to understand the applied scales. Depressive episodes with psychotic features, mental retardation, personality disorders, alcohol or psychoactive substance abuse diagnoses, and those with serious neurological or general medical conditions were excluded. All diagnostic evaluations were made with SCID-I and -II structured interview forms for DSM-IV.

The control group included 20 individuals whose gender (10 males, 10 females), education level, and socio-demographic characteristics were similar to the patient group. The mean years of education were 11.80 ($\pm$ 1.20) for bipolar patients and 12.50 ($\pm$ 0.80) for control group. The control group was also examined with SCID-I and -II structured interview forms for DSM-IV. Those who had no psychiatric illness or personality disorder, and agreed to participate in the study were included to the control group. The bipolar patients group and healthy controls were informed about the purpose and methods of the study and written consents were obtained. Beck Depression Inventory (BDI), Young Mania Rating Scale (YMRS), and YSI were performed for all participants in the study.

Assessment tools

Structured diagnostic interview for DSM-IV (SCID-I and -II)

The SCID-I and -II was developed by First, Spitzer, Gibbon, and Williams (1997). It is a semi-structured assessment scale in which DSM-IV diagnostic categories are systematically reviewed in clinical samples. Previous studies have established the validity and reliability of the Turkish version used in the current study (Özkürkçügil, Aydemir, Yıldız, Esen Danacı, & Köroğlu, 1999).

Beck depression inventory

The BDI consists of 21 self-assessment items on the symptoms of depression and is scored from 0 to 3. For the Turkish version of the scale, validity and reliability studies were conducted by Hisli (1989). A cut-off score of 17 and higher were accepted as indications for depression.

Young schema inventory short form 3 (YSI-SF3)

The YSI-SF3 was developed by Young (1990) to determine early maladaptive schemas. The scale includes 18 early maladaptive schemas under five schema areas. These 18 schema dimensions include abandonment/instability, mistrust/abuse, emotional deprivation, defectiveness/shame, social isolation/alienation, dependence/incompetence, vulnerability to harm or illness, enmeshment/undeveloped self, failure, entitlement/grandiosity, insufficient self-control/self-discipline, subjugation, self-sacrifice, approval-seeking/recognition-seeking, negativity/pessimism, emotional inhibition, unrelenting standards/hypercriticalness, and punitiveness. Each dimension consists of five items rated on a Likert-type scale. Although a cut-off point is not specified for the scale, high scores indicate the presence of the more numerous and more severe early maladaptive schemas. Soygüt, Karaosmanoğlu, and Çakır (2009) conducted the validity and reliability study of this 90-item short form among a Turkish population.

Young mania rating scale

The YMRS consists of 11 items. Each item measures the severity of symptoms using a five-step scale (Young, Biggs, Ziegler, & Meyer, 1978). Scaled items consist of the core symptoms defined in bipolar disorder manic episode (rated from mild to severe). The

scale is completed by the interviewer based on the status of the patient in the previous 48-h period. Karadağ, Oral, Yalçın, and Erten (2001) established validity and reliability study of this scale among a Turkish population.

Statistical analysis

Descriptive statistics included the number and percentage of participants per group and mean ± standard deviation was used for between-group comparisons. The bipolar patient and control groups were compared on each schema of the Young Schema Scale using multivariate analysis of covariance (MANCOVA). MS-Excel and SPSS for Win. Ver. 15.0 (SPSS Inc., Chicago, IL, USA) package programs were used for all statistical calculations and analyses.

Results

A total of 38 participants, including 18 patients diagnosed with bipolar depression and a control group of 20 mentally healthy individuals, participated in the study. Participants' ages ranged between 21 and 55 years and the mean age as 32.24 ± 7.33 years. Despite the attention given during the planning stage of the study, there was a statistically significant difference between the study groups in terms of age ($F = 5.50$; $p < .01$). Patients in the bipolar group ($M = 28.56 \pm 5.06$) were younger than the participants in the control group ($M = 35.74 \pm 7.53$).

The bipolar and control groups were significantly different on BDI scores ($F = 8.28$; $p < .01$). The mean of BDI scores for the bipolar group ($M = 11.44 \pm 8.17$) was significantly higher compared to the mean of BDI scores of the control group ($M = 5.63 \pm 3.20$). Similarly, the two groups were significantly different on the Young Mania Scale ($F = 8.03$; $p < .01$). The mean YMRS score of the bipolar patients was 6.72 (±8.23), while the mean scale score of the control group was 1.32 (±1.15).

The bipolar patient and control groups were also compared on each schema of the Young Schema Scale via MANCOVA after controlling for age, BDI, and YMRS scores. In order to eliminate the influence of current mood state on schemas both in individuals with bipolar disorder and in the control group, we treated BDI and YMRS scores as covariates aiming to control for between-group differences in symptom severity. The correlations between covariates and dependent variables were presented in Table 1. The results of MANCOVA showed that bipolar patient group was significantly different from control group in mistrust/abuse, social isolation/alienation, dependence/incompetence, enmeshment/undeveloped self, failure, entitlement/grandiosity, insufficient self-control/self-discipline, subjugation, self-sacrifice, negativity/pessimism, emotional inhibition, unrelenting standards/hypercriticalness, and punitiveness. Bipolar patients took significantly higher scores than the control group on all these schema domains. The effects of the covariates on schemas as well as the effects of the groups after controlling for the covariates were presented in Table 2.

Discussion

In the current study, bipolar patients were compared to healthy controls in terms of 18 negative schemas that are collected under five schema domains (i.e., disconnection

Table 1. Correlation between covariates and dependent variables

	Age	BDI	YMRS
Age		−0.15	−0.23
BDI	−0.15		0.06
YMRS	−0.23	0.06	
Abandonment/instability	−0.10	**0.33***	−0.05
Mistrust/abuse	−0.06	0.27	−0.12
Emotional deprivation	−**0.39***	0.27	0.32*
Defectiveness/shame	−0.18	0.29	0.19
Social isolation/alienation	−0.26	0.20	**0.44****
Dependence/incompetence	−0.27	0.15	0.09
Vulnerability to harm or illness	−0.27	0.13	**0.52****
Enmeshment/undeveloped self	−**0.36***	0.18	0.23
Failure	−**0.38***	0.24	0.22
Entitlement/grandiosity	−0.13	0.18	0.07
Insufficient self-control/self-discipline	−0.21	0.21	0.13
Subjugation	−0.13	0.30	−0.03
Self-sacrifice	−0.13	0.14	0.27
Approval-seeking/recognition-seeking	−0.17	0.08	**0.36***
Negativity/pessimism	−0.18	0.18	0.28
Emotional inhibition	−0.28	0.19	0.18
Unrelenting standards/hypercriticalness	−0.28	0.19	0.02
Punitiveness	−0.31	−0.06	0.31

*Pearson correlation coefficient at the .05 level. **Pearson correlation coefficient at the .01 level.

and rejection, impaired autonomy and performance, impaired limits, other directedness, overvigilance, and inhibition). The findings of the present study revealed that bipolar patients showed a statistically significant difference on all individual schemas except five of them. In terms of two schema domains 'impaired limits' and 'overvigilance and inhibition' results revealed significant differences between the patient and control groups for all individual schemas under these schema domains. The overvigilance and inhibition schema domain is defined as an excessive emphasis on suppressing one's spontaneous feelings, impulses, and choices or on meeting rigid, internalized rules and expectations about performance and ethical behaviours, often at the expense of happiness, self-expression, relaxation, close relationships, or health. In the 'other directedness' schema domain, the difference was quite significant for self-sacrifice and subjugation schemas, although there was no significant difference for the approval-seeking schema. Other directedness usually involves suppression and lack of awareness regarding one's own anger and natural inclinations. Additionally, the most significant difference between the bipolar and control group was for the subjugation schema, which also indicates inhibition. There are two basic forms of subjugation: 'subjugation of needs' expresses the suppression of one's preferences, decisions, and desires and 'subjugation of emotions' expresses the suppression of emotional expression, especially anger. These results support the view that patients with bipolar disorder suppress their feelings, which prepares the ground for future episodes. The perception and allowance of feelings at the proper time can work against the development of future phases.

When the other schemas in which bipolar patients differed from normal controls were examined, higher scores in the negative schemas, such as incompetence, failure, and

Table 2. Young Schema Scale scores of bipolar and comparison groups after controlling for age, BDI, and YMRS scores

Schemas	Covariates			Groups Bipolar versus Control	Estimated means (± *SD*)	
	Age *F*(1,32)	BDI *F*(1,32)	YMRS *F*(1,32)	*F*(1,32)	Bipolar	Control
Abandonment/instability	0.07	1.30	1.38	2.59	10.60 ± 1.05	7.09 ± 1.05
Mistrust/abuse	0.37	0.37	2.98	4.69*	11.14 ± 1.22	6.91 ± 1.18
Emotional deprivation	1.91	0.65	1.13	0.85	16.39 ± 1.2	14.62 ± 1.16
Defectiveness/shame	0.05	0.47	0.01	3.69	12.82 ± 1.17	9.22 ± 1.13
Social isolation/alienation	0.10	0.04	1.12	8.01**	12.00 ± 0.88	7.99 ± 0.85
Dependence/incompetence	0.02	0.88	1.72	14.37**	15.06 ± 0.97	9.19 ± 0.93
Vulnerability to harm or illness	0.18	0.01	6.28**	1.09	14.48 ± 1.23	12.43 ± 1.18
Enmeshment/undeveloped self	0.40	0.20	0.02	7.51*	12.51 ± 1.10	7.67 ± 1.06
Failure	0.61	0.01	0.05	7.39*	12.57 ± 1.08	7.87 ± 1.04
Entitlement/grandiosity	0.17	0.01	0.39	4.57*	18.27 ± 1.14	14.37 ± 1.10
Insufficient self-control/self-discipline	0.34	0.20	0.81	13.09*	18.88 ± 1.21	11.90 ± 1.16
Subjugation	1.12	0.03	4.35*	15.34***	16.30 ± 1.00	10.03 ± 0.97
Self-sacrifice	1.57	0.79	0.01	13.93**	15.53 ± 1.23	8.17 ± 1.19
Approval-seeking/recognition-seeking	0.09	0.29	1.35	3.38	16.79 ± 1.33	12.88 ± 1.28
Negativity/pessimism	0.41	0.09	0.16	7.99**	13.81 ± 1.07	8.96 ± 1.04
Emotional inhibition	0.01	0.16	0.21	8.51**	12.02 ± 1.10	6.87 ± 1.06
Unrelenting standards/hypercriticalness	0.12	0.10	1.92	7.91**	13.84 ± 1.22	8.35 ± 1.18
Punitiveness	0.25	3.64*	0.23	6.63*	14.20 ± 1.06	9.85 ± 1.02

*$p < .05$; **$p < .01$; ***$p < .001$.

undeveloped self, indicated lower levels of self-perception. In line with the cognitive model of depression, this result highlights a distorted self-perception and pessimistic point of view. This also indicates that schemas that could be related to depression may be prominent in bipolar patients in a euthymic state. However, the literature has reported mixed results concerning self-perception and self-esteem of the patients with bipolar disorder. For example, one study found that patients with bipolar disorder demonstrated much more dysfunctional beliefs compared to healthy controls even in euthymic period (First *et al.*, 1997). Additionally, Blairy *et al.* (2004) found that bipolar patients had significantly lower self-esteem compared to controls, even after remission. Scott and Pope (2003) showed that negative self-evaluation was the most robust predictor of both manic and depressive relapse in bipolar disorder patients. However, in the current study, in addition to the results that indicate low self-esteem, it is noteworthy that the bipolar group was significantly different from the control group on the grandiosity schema. Similarly, Knowles *et al.* (2007) reported that 'Instability of self-esteem and affect is present in bipolar patients, even when their symptoms are in remission'. Furthermore, Scott, Garland, and Moorehead (2001) found bipolar disorder patients were more vulnerable and demonstrated more variable self-perceptions, higher levels of dysfunctional beliefs (i.e., need for social acceptance and perfectionism), over-generalized memory, and worse problem-solving skills when compared to the

control group. In these studies, self-perception and self-esteem instability was noted. The significant differences between bipolar and control groups on schemas related to low self-esteem (e.g., failure, undeveloped self, incompetence) and the schema that indicates high self-esteem and grandiosity was assessed as indicating the instability of self-esteem in accordance with the results of the above studies.

Five schemas where differences were not observed included abandonment, emotional deprivation, defectiveness, vulnerability to harm or illness, and approval seeking. Three of these schemas are subgroups of the rejection and disconnection schema domain. This schema domain refers to an inability to trust others when it comes to meeting needs. When the rejection and disconnection schema domain does not yield differences between bipolar and control group, it is interpreted in terms of a cognitive triad, which suggests that patients in the bipolar group do not exhibit pessimism about environmental points of view.

There were some limitations of the current study. One of them was the small sample size. The other limitation was that the relation of schemas with previous depressive and manic episodes was not explored in the current study.

In conclusion, the findings indicate that in cognitive-based psychotherapeutic approaches for patients with bipolar disorder, it would be more effective to focus on the perception and allowance of feelings at the proper time and the instability of self-perception.

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Received 24 November 2010; revised version received 6 March 2011