

# Dissociative Experience in Unipolar and Bipolar Depression: Exploring the Great Divide

Seshadri Sekhar Chatterjee<sup>1</sup>, Arghya Pal<sup>2</sup>, Nitu Mallik<sup>2</sup>, Malay Ghosal<sup>2</sup>, Goutam Saha<sup>3</sup>

<sup>1</sup>Department of Psychiatry, NIMHANS, Bangalore, <sup>2</sup>Department of Psychiatry, Calcutta Medical College and Hospital, Kolkata, <sup>3</sup>Consultant Psychiatrist, Kolkata, India

**Objective:** Unipolar and bipolar depression (UD and BD) differ strikingly in respect to neurobiology, course and management, but their apparent clinical similarity often leads to misdiagnosis resulting in chronicity of course and treatment failure. In this study we have tried to assess whether UD and BD can be differentiated on the basis of their dissociative symptoms.

**Methods:** Thirty-six UD patients and 35 BD patients in active episodes, without any psychiatric comorbidity were selected from outpatient department and compared for depressive and dissociative symptoms using Hamilton Depression Rating Scale and Dissociative Experience Scale-II (DES-II).

**Results:** We found that though the two groups didn't differ in terms of the socio-demographic or clinical variables, BD group had significantly higher dissociative experience ( $U=343$ ,  $p=0.001$ ) than UD and the difference remained significant even after adjusting for the confounding factors.

**Conclusion:** Our study shows that dissociative symptoms are significantly more prevalent in the depressive episodes of bipolar affective disorder as compared to the UD and can be an important tool in differentiating between the two disorders with very similar clinical profile. The difference can be measured using a simple self-report questionnaire like DES-II.

**KEY WORDS:** Dissociative disorders; Bipolar disorder; Bipolar depression.

## INTRODUCTION

Unipolar and bipolar depressions (UD and BD) differ strikingly in respect to neurobiology, course and management, but their apparent clinical similarity often leads to misdiagnosis resulting in chronicity of course and treatment failure.<sup>1</sup> A significant proportion of UD patients found to be bipolar disorder in prospective follow up and as much as 40% of diagnosed bipolar disorder patients were previously diagnosed as UD.<sup>2</sup> There are plethora of studies to differentiate between the two by several factors like psychomotor agitation, family history, episodic nature, premorbid personality, associated anxiety, psychotic feature, atypicality of depression and many more.<sup>3,4</sup>

Dissociative experiences are considered to be disintegration of the usually integrated function of consciousness, memory, identity and perception of one's environment or to be a coping mechanism to deal with unbearable stressful situation.<sup>5</sup> It is widely prevalent across a number of psychiatric disorders like anxiety disorders, depressive disorders, bipolar affective disorder (BPAD) and psychotic disorders like schizophrenia.<sup>6</sup> The dissociative experience too has a spectrum feature having normal physiological experience to pathological dissociation.

Dissociation and bipolar disorder, both being associated with early childhood trauma, anxiety symptoms as well as neurobiological underpinnings like involving amygdala and other limbic structures in functional imaging, demand further heuristic exploration for any underlying relations between the two. According to recent findings dissociative experience can differentiate between the two as more dissociative experience have been reported in BD patients.<sup>7</sup> Present study aims to fulfill this void by

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**Address for correspondence:** Seshadri Sekhar Chatterjee, MD

Department of Psychiatry, NIMHANS, Bangalore, India

Tel: +91-80-2699-5000

E-mail: drsschatterjee@gmail.com

ORCID: <https://orcid.org/0000-0002-5554-2216>

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measuring the dissociative experience between UD and BD patients and it is first of its kind in Indian population. The aim of the current study is to determine the level of difference of dissociative symptoms in UD and BD and to determine the effect of the various socio-demographic and clinical variables on the difference of the dissociative symptoms.

## METHODS

### Sample

The study group consisted of 36 patients of UD and 35 patients of BD recruited from general psychiatry out-patient department. The patients were recruited consecutively on meeting the inclusion criteria. The inclusion criteria for UD consisted of (a) met the criteria for 'Recurrent depressive disorder' (F 33) according to the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10); (b) With no other co-morbid psychiatric illness (other than nicotine dependence syndrome) as assessed on Mini-International Neuro-psychiatric Interview (MINI); (c) a score of  $>7$  in 17 item Hamilton Depression Rating Scale (HAM-D). The inclusion criteria for BD consisted of (a) met the criteria for 'Bipolar affective disorder' according to the ICD-10 (F31.3 and F31.4); (b) With no other co-morbid psychiatric illness (other than nicotine dependence syndrome) as assessed on MINI; (c) a score of  $>7$  in 17 item HAM-D. The common inclusion criteria for both the three groups were (a) Age range  $>18$  and  $<60$  years; (b) Able to read at least to the level of primary education; (c) Willing to participate in the study and give informed consent. Ethical clearance for the study was obtained from the Institution Ethics Committee of Calcutta Medical College in Kolkata.

After recruitment of the patients socio-demographic and clinical information was obtained on predesigned semi-structured proforma. The patients with UD or BD were also assessed using the HAM-D. Dissociative experience was measured by Dissociative Experience Scale (DES-II).<sup>8)</sup>

### Instruments

#### Dissociative Experience Scale (DES-II)

The DES-II<sup>8)</sup> is a 28 item scale rated in percentage of 0

to 100 with increment of 10, which designed to measure the frequency of dissociative experiences. The total DES-II score is the mean of all item responses. It conceptualized to measure as a trait and is designed to be used above the age of 18 years. The scale also takes into consideration the variability of the dissociative experiences across cultures and seeks to be applicable across various cultures.

#### Hamilton Depression Rating Scale (HAM-D)

The HAM-D<sup>9)</sup> is one of the commonly used scales for rating depression in medical research. It is a 21-question multiple choice interview rated on a 0-4 Likert scale. The interview rates the severity of symptoms observed in depression such as low mood, insomnia, agitation, anxiety, weight loss etc. The scale has been classified as follows; no depression (0-7), mild depression (8-16), moderate depression (17-23), and severe depression ( $\geq 24$ ).

#### Mini-International Neuro-psychiatric Interview (MINI)

The MINI is a short, structured diagnostic instrument designed to diagnose the Diagnostic and Statistical Manual of Mental Disorders 4th edition, text revision (DSM-IV-TR) and ICD-10 psychiatric disorders. It is intended to be used as a tool to facilitate accurate data collection and processing of symptoms in yes or no format to screen for 16 major psychiatric disorders.

### Statistical Analysis

IBM SPSS Statistics statistical package (ver. 20; IBM Co., Armonk, NY, USA) was used for statistical analysis. Socio-demographic and clinical data obtained were analyzed using descriptive statistics. The two patient groups were compared on socio-demographic and clinical variables using chi square test (categorical variables) and independent sample *t* tests. The non parametric tests (Mann-Whitney *U* test) were used where the variables were not normally distributed. Subsequently univariate analysis of variance (ANCOVA) was done selecting appropriate covariates. A logarithmic transformation was done where the covariates were not normally distributed. Correlation between DES-II scores with age at presentation, income, age of onset, total duration of illness, number of episode, HAM-D score were computed using Spearman's 'rho' or Pearson's product moment correlation based on distribution of variables. A multiple linear logistic regression was attempted but the data didn't fit the model.

Significance was determined at  $p < 0.05$ .

## RESULTS

### Sociodemographic and Clinical Variables

The comparisons of the sociodemographic and clinical characteristics of the two groups comprising of UD and BD patients are presented in Tables 1 and 2. There were no significant differences in the two groups in terms of age, gender, place of residence, marital status, religion and education in years. The two groups also didn't differ in term of the clinical profile parameters like age of onset, number of episodes, total duration of illness and HAM-D

**Table 1.** Group comparison on socio-demographic variables and clinical variables between UD, BD and controls

Socio-demographic profile	UD (n=36)	BD (n=35)	$\chi^2/t$	$p$ value
Age (yr)	32.33±10.09	31.34±8.50	0.447	0.656
Sex			0.390	0.474
Male	17	13		
Female	19	22		
Residence			0.872	1.0
Rural	23	23		
Urban	13	12		
Marital status			0.861	0.650
Married	16	13		
Unmarried	18	21		
Widowed	2	1		
Religion			0.723	0.814
Hindu	19	17		
Muslim	17	18		
Education (yr)	8.31±3.70	9.03±3.92	-0.798	0.427

Values are presented as mean±standard deviation or number only. UD, unipolar depression; BD, bipolar depression.

**Table 4.** Analysis of covariance of DES-II scores between UD and BD groups

Age	Income	Age of onset	Total duration of illness	No. of episode	HAM-D score
9.180** (0.003)	9.234** (0.003)	9.278** (0.003)	9.269** (0.003)	9.311** (0.003)	9.847** (0.003)

Values are presented as F ( $p$  value).

DES-II, Dissociative Experience Scale-II; UD, unipolar depression; BD, bipolar depression; HAM-D, 17 item Hamilton Depression Rating Scale. \*\* $p < 0.01$ .

**Table 5.** Correlation of DES-II with variables

Variable	Age at presentation	Income	Age of onset	Total duration of illness	No. of episode	HAM-D score
UD	-0.064	-0.063	-0.112	0.161	0.439**	0.062
BD	-0.043	-0.050	-0.009	-0.240	-0.267	0.102

DES-II, Dissociative Experience Scale-II; UD, unipolar depression; BD, bipolar depression; HAM-D, 17 item Hamilton Depression Rating Scale. \*\* $p < 0.01$ .

scores.

However, there was significant difference in between the two groups in the scores of DES-II when Mann-Whitney  $U$  test was applied (Table 3).

### Analysis of Covariance of the Scores on DES-II

The scores on DES-II were further analyzed with ANCOVA using appropriate covariates. The sociodemographic and clinical variables were chosen that could affect the dissociative experiences in the patients. Age, family income, age of onset, total duration of illness, number of episodes and scores on HAM-D were considered as the covariates. It was found that even after adjusting for all the

**Table 2.** Group comparison of clinical variables between UD and BD

Variable	UD (n=36)	BD (n=35)	t/U	$p$ value
Age at onset (yr)	30.28±9.71	29.86±8.29	0.196	0.845
Number of episode	2.56±1.10	2.60±1.28	0.829	0.876
Total duration (mo)	18.03±22.24	16.91±21.47	605*	0.778
HAM-D score	16.94±3.34	15.83±3.86	1.301	0.198

Values are presented as mean±standard deviation.

UD, unipolar depression; BD, bipolar depression; HAM-D, 17 item Hamilton Depression Rating Scale.

\*Mann-Whitney  $U$  test.

**Table 3.** Group comparison of DES-II score between UD and BD

Variable	UD (n=36)	BD (n=35)	U	$p$ value
DES-II score	10.42±7.16	16.74±9.98	343*	0.001**

Values are presented as mean±standard deviation.

DES-II, Dissociative Experience Scale-II; UD, unipolar depression; BD, bipolar depression.

\*Mann-Whitney  $U$  test; \*\* $p < 0.01$ .

covariates the difference on scores on DES-II remained significant between the two groups (Table 4).

### Correlation of the Scores on DES-II with Sociodemographic and Clinical Parameters

It was found that the scores on DES-II in patients of UD were significantly correlated to the number of episodes. However the DES-II scores were not significantly correlated to any other socio-demographic or clinical variables in either group (Table 5). A multiple linear logistic regression was attempted but the data didn't fit the model.

## DISCUSSION

Our results revealed BD patients experience more psychological dissociation as compared to UD patients in depressive episodes. Dissociative experience was found to be higher in BD patients when compared to normal<sup>7)</sup> as well as depressed people.<sup>10)</sup>

The relation between dissociative disorders and BPAD has been receiving a lot of attention from the researchers. A case series<sup>11)</sup> elucidated the cases of manic episodes being preceded by appearance of dissociative disorders. The two disorders have been thought to be interlinked at various facets. Dissociative disorders may be the presentation of the failed attempts of the individual to cope with the various stressful life events<sup>12)</sup> or an episode in BPAD may be a reaction to a traumatic life event.<sup>13)</sup> BPAD are known to suffer from cognitive dysfunctions both during the episodes (manic or depressive) and during euthymic states.<sup>14)</sup> This cognitive dysfunction may also be affecting the coping capacity of the patient resulting in higher prevalence of the dissociative symptoms, though certain studies seem to negate the fact.<sup>15)</sup>

So, what might be the neurobiological basis of this common association? We suggest it might be due to underlying disturbance in anterior cingulate cortex (ACC),<sup>16)</sup> dorsomedial prefrontal cortex (MdPFC),<sup>17)</sup> and insular cortex (IC)<sup>18)</sup> which found to be present in both the disorder. ACC is responsible for maintaining the connection between motor command and motor act, MdPFC for sustained attention and anterior IC for internal sensory perception, free will and selfhood.<sup>19)</sup> Being a member of limbic system in BPAD patient there is faulty connection and dendritic remodeling of these areas<sup>20)</sup> which when experience further stress cannot process the command,

hence the 'dissociation'.

To light it up from another side, dissociative patients have decreased volumes of hippocampus, parahippocampal gyrus and amygdala,<sup>21,22)</sup> which are known to play important role in memory and emotional learning associated with the reward circuitry. UD and BD have also been differentiated on the basis reduced activation of the reward system activation on response to social rewards.<sup>23)</sup> Thus the shared neuroanatomical deficits may be the basis of this association.

Here to mention, though mean HAM-D score was lesser in BD group they experience much more dissociative symptoms than UD patients. Despite the difference is not significant, it points towards the fact that the dissociative experience may be a separate construct, not just a 'severity phenomenon', which could be an interesting point of further research.

Differentiating UD and BD has been considered a challenging task, most appropriate way of which is skillful history taking. Certain illness features like psychomotor slowing or agitation, cognitive impairment, mood lability, psychosis, onset in the peripartum period, and early age at illness onset have been considered as contributory.<sup>24)</sup> Minute probing is important as misdiagnosis may lead to delay in effective treatment and also complicate the course of the illness. Cyclothymic temperament is more prevalent among patients with BD and is highly correlated with scores on DES.<sup>7)</sup> Thus the current evidence also fuels the speculation that dissociative symptoms could be helpful in differentiating BD from UD.

In depressed patients, we found, number of episodes is an independent risk factor for dissociative symptoms. A previous study<sup>15)</sup> had found significant correlation between the scores on DES and age of onset of the disorder and number of manic episodes in patients with BPAD. We also tried to see the effect of the various sociodemographic and clinical variables on the difference of the scores of dissociation in between the two groups and found that the difference remained significant even after adjusting the role of the parameters. This further strengthens the case of using the parameter of dissociative symptoms in the differentiation of UD and BD.

An important limitation of our study was the recruitment of patients with active symptoms, which raises the question whether the results could be generalized across all patients with varying severity of symptoms. This study

also fails to clear the role of dissociative symptoms in the euthymic stages of the illnesses. Another major limitation is the fact that the interviewer was not blind to the diagnostic status of the patients, but it has to be mentioned here that the interview was conducted with the help of self-report questionnaire. Our study was conducted with modest sample sizes which proved to be a constraint in intergroup comparison.

Our study shows that dissociative symptoms are significantly more prevalent in the depressive episodes of BPAD as compared to the UD and can be an important tool in differentiating between the two disorders with very similar clinical profile. The difference can be measured using a simple self-report questionnaire like DES-II.

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