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Original Research

Depressive Symptom Profiles in Major Depressive Disorder and Bipolar Disorder: A Cross-Sectional Study from Two Tertiary Care Hospitals.

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Abstract

Background: Differentiating major depressive disorder (MDD) from bipolar disorder (BD) remains a clinical challenge, particularly in resource-limited settings. Misdiagnosis can lead to inappropriate treatment and poorer outcomes. **Objective:** To compare socio-demographic variables, family history, and clinical features of depressive episodes in patients with MDD and BD attending tertiary care hospitals in Dr. Bidhan Chandra Roy Hospital, Haldia, West Bengal and Modern Psychiatric Hospital, Narsinghar, Agartala, Tripura. **Methods:** We conducted a cross-sectional study among 75 patients with MDD and 60 patients with BD. We established diagnoses using the Mini International Neuropsychiatric Interview (MINI) and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) criteria. We assessed sociodemographic data, family history, and stressful life events using a semi-structured questionnaire and the Presumptive Stressful Life Events Scale. Severity of depression was measured using the validated Bengali version of the Beck Depression Inventory (BDI). **Results:** The mean age of MDD patients was 34.2 years compared to 32.6 years in BD ($p = 0.28$). MDD showed female predominance, while BD showed a near-equal distribution ($p = 0.04$). Educational attainment was significantly lower in BD compared to MDD ($p = 0.01$). Unemployment was higher in BD than MDD ($p = 0.03$). BD patients had a significantly earlier age of onset (mean 24.8 years) compared to MDD (mean 32.9 years; $p = 0.001$). Recurrent episodes and positive family history were more frequent in BD ($p = 0.001$). Stressful life events were significantly associated with MDD ($p = 0.001$). BD patients scored higher on the BDI (39.2 ± 9.4) than MDD patients (27.1 ± 7.8 ; $p = 0.001$), with prominent features of guilt, suicidality, irritability, social withdrawal, fatigability, and loss of libido. MDD patients exhibited more insomnia, anorexia, weight loss, and somatic preoccupation. **Conclusion:** BD is characterised by earlier onset, recurrent episodes, stronger familial predisposition, and greater symptom severity, while MDD is more closely linked to stressful life events and somatic complaints. Early recognition of bipolarity in depressive presentations is essential to guide appropriate treatment and improve outcomes.

Keywords: Major depressive disorder; Bipolar disorder; Depressive episode; Beck Depression Inventory; Stressful life events; Socio demographic profile.

INTRODUCTION

Depressive disorders represent one of the most pressing challenges in psychiatry, contributing substantially to global morbidity and disability. They are associated with severe complications such as suicide, substance misuse, and impaired social functioning, often exceeding the burden of many chronic medical illnesses.¹ Major depressive disorder (MDD) and bipolar disorder (BD) both present with depressive episodes, yet their clinical trajectories, genetic predispositions, and treatment responses differ significantly.²

Globally, unipolar depression is projected to become the second leading cause of disease burden, while bipolar disorder is expected to rank within the top twenty contributors to morbidity.³ Despite overlapping symptomatology, distinguishing between unipolar and bipolar depression remains crucial, as inappropriate treatment—particularly the use of antidepressants in bipolar depression—can precipitate mood destabilisation, increase recurrence, and foster treatment resistance.⁴

Depressive episodes in unipolar and bipolar illness are clinically indistinguishable, with differentiation possible only through long-term observation.⁵ However, contemporary evidence highlights distinct differences in age of onset, family history, symptom severity, and psychosocial correlates.^{6,7} For instance, bipolar depression often manifests earlier, with recurrent episodes and stronger familial aggregation, whereas unipolar depression is more frequently associated with stressful life events preceding onset.⁸

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In India, psychiatric epidemiology underscores the importance of contextualising these disorders within socio-demographic and cultural frameworks. Previous studies have reported variability in gender distribution, educational attainment, and occupational status between MDD and BD populations.^{9,10} Moreover, atypical features such as hypersomnia and hyperphagia are more commonly observed in bipolar depression, while insomnia, anorexia, and somatic preoccupation predominate in unipolar depression.^{11,12}

Given these distinctions, early recognition of bipolarity in patients presenting with depression is clinically desirable. This study aims to compare depressive episodes in patients diagnosed with MDD and BD at Dr. Bidhan Chandra Roy Hospital, Haldia, West Bengal and Modern Psychiatric Hospital, Narsinghar, Agartala, Tripura. By analysing socio-demographic variables, family history, and symptom profiles, the research aims to improve diagnostic clarity and therapeutic strategies in the Indian psychiatric setting.

MATERIALS AND METHODS

Study Design and Setting

This was a hospital-based, cross-sectional comparative study conducted in the Psychiatry Outpatient Department (OPD) of Dr. Bidhan Chandra Roy Hospital, Haldia, West Bengal and Modern Psychiatric Hospital, Narsinghar, Agartala, Tripura. The institutional ethics committee of both hospitals granted ethical clearance before the study began. We obtained written informed consent from all participants.

Sample Selection

We screened consecutive patients attending the Psychiatry OPD between July 2018 and December 2018. Those fulfilling diagnostic criteria for MDD or BD with a current depressive episode were included. We established diagnoses using the Mini International Neuropsychiatric Interview (MINI) and confirmed them according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) criteria. Patients with comorbid substance dependence, severe neurological illness, or unwillingness to participate were excluded.

We recruited 75 patients with MDD and 60 patients with BD. The slightly larger bipolar sample compared to earlier studies was intentional to strengthen comparative analysis in this hospital population.

Data Collection Tools

- **Socio-demographic profile:** A semi-structured questionnaire was used to collect information on age, sex, education, occupation, marital status, family type, and socio-economic status. Socio-economic status was assessed using the Kuppuswamy scale, which considers education, occupation, and income of the head of the household.
- **Family history:** Information regarding psychiatric illness among first-degree relatives was recorded.
- **Stressful life events:** The Presumptive Stressful Life Events Scale (PSLES) was applied to identify significant stressors preceding illness onset.
- **Severity of depression:** The validated Bengali version of the Beck Depression Inventory (BDI) was administered to all participants to quantify depressive symptom severity.

Procedure

After recruitment, each participant underwent a detailed clinical interview and mental status examination. Socio-demographic and clinical data were documented. Participants self-administered the BDI under supervision to ensure comprehension. Clinical features such as guilt, suicidal ideation, irritability, social withdrawal, sleep disturbance, appetite changes, and somatic preoccupation were specifically noted.

Statistical Analysis

We coded and analysed data using SPSS version 20.0. We expressed continuous variables such as age and age of onset as mean $\pm$ standard deviation and compared them using independent-samples t-tests. We analysed categorical variables such as sex, marital status, education, occupation, family history, and stressful life events using chi-square tests. We considered $p < 0.05$ statistically significant.

RESULTS

Socio-Demographic Profile

The socio-demographic analysis revealed that the mean age of patients with MDD was 34.2 years, while those with BD had a mean age of 32.6 years, a difference that was not statistically significant ($p = 0.28$). Gender distribution showed a clear female predominance in the MDD group (28 males, 47 females), whereas BD patients were more evenly distributed (31 males, 29 females), and this difference was significant ($p = 0.04$). Educational attainment was notably lower among BD patients, with 20 illiterate and 40 educated, compared to 12 illiterate and 63 educated in the MDD group ($p = 0.01$). Occupational status also differed, with unemployment higher in BD (15 employed, 45 unemployed) than in MDD (30 employed, 45 unemployed), with a significant difference ($p = 0.03$). Marital status (MDD: 25 single, 50 married; BD: 18 single, 42 married) and socio-economic status (MDD: 55 lower, 20 middle; BD: 45 lower, 15 middle) did not differ significantly ($p = 0.12$ and $p = 0.41$, respectively) [Table 1].

Table 1. Socio-demographic characteristics of study groups

Variable	MDD (n=75)	BD (n=60)	p-value	Conclusion
Mean age (years)	34.2	32.6	0.28	Not significant
Sex ratio (M:F)	28:47	31:29	0.04	Female predominance in MDD
Education (Illiterate: Educated)	12:63	20:40	0.01	Lower education in BD
Occupation (Employed: Unemployed)	30:45	15:45	0.03	Unemployment is higher in BD
Marital status (Single: Married)	25:50	18:42	0.12	Not significant
Socio-economic status (Lower: Middle)	55:20	45:15	0.41	Not significant

Clinical Profile

The clinical characteristics of the two groups revealed striking differences. The mean age of onset was significantly earlier in BD (24.8 years) than in MDD (32.9 years), underscoring BD's tendency to manifest at a younger age ($p = 0.001$). Past episodes were far more common in BD, with 58 patients reporting previous depressive episodes versus only 8 in the MDD group, highlighting the recurrent nature of bipolar illness ($p = 0.001$). Family history of psychiatric illness was also more prominent in BD (32 positive cases) compared to MDD (14 positive cases), again reaching statistical significance ($p = 0.001$).

Stressful life events were reported by 48 MDD patients but only 12 BD patients, suggesting that environmental triggers play a stronger role in unipolar depression ($p = 0.001$). Psychotic symptoms (MDD: 7, BD: 10) and postpartum onset (MDD: 3, BD: 6) were slightly more frequent in BD, but these differences did not reach statistical significance ($p = 0.09$ and $p = 0.08$, respectively). Overall, the data indicate that BD is characterised by earlier onset, recurrent episodes, and stronger familial predisposition, while MDD is more closely linked to stressful life events preceding illness onset (Table 2).

Table 2. Clinical characteristics of depressive episodes

Variable	MDD (n=75)	BD (n=60)	p-value	Conclusion
Mean age of onset (years)	32.9	24.8	0.001	Earlier onset in BD
Past episodes (Yes:No)	8:67	58:2	0.001	BD shows recurrent episodes
Family history (Yes:No)	14:61	32:28	0.001	BD has a stronger family history
Stressful life events (Yes:No)	48:27	12:48	0.001	Stress more common in MDD
Psychotic symptoms (Yes:No)	7:68	10:50	0.09	Not significant
Postpartum onset (Yes:No)	3:72	6:54	0.08	Not significant

Severity of Depression (BDI Scores)

The comparison of mean BDI scores revealed a clear difference in severity between the two groups. Patients with MDD had a mean score of 27.1 ± 7.8 , while those with BD recorded a significantly higher mean score of 39.2 ± 9.4 ($p = 0.001$). This indicates that depressive episodes in BD are generally more severe, with greater intensity of symptoms compared to MDD (Table 3).

Table 3. Mean BDI scores

Group	Mean BDI score $\pm$ SD	p-value	Conclusion
MDD	27.1 ± 7.8	0.001	BD more severe
BD	39.2 ± 9.4		

Symptom Profile (BDI Item Analysis)

The comparative symptom profile highlights distinct differences in the presentation of depressive episodes between MDD and BD. Certain symptoms were significantly more pronounced in BD, including guilt ($p = 0.001$), self-dislike ($p = 0.01$), suicidal ideation ($p = 0.001$), irritability ($p = 0.001$), social withdrawal ($p = 0.001$), fatigability ($p = 0.001$), and loss of libido ($p = 0.001$). These findings suggest that BD patients experience more severe affective and behavioural disturbances, often associated with a higher risk of suicidality and functional impairment. In contrast, MDD patients demonstrated a higher prevalence of insomnia ($p = 0.001$), anorexia ($p = 0.02$), weight loss ($p = 0.01$), and somatic preoccupation ($p = 0.01$), indicating a stronger link to vegetative and somatic symptoms. Overall, BD appears to be characterised by more intense emotional and interpersonal dysfunction, while MDD is more closely associated with physical and somatic complaints. This differentiation underscores the importance of symptom profiling in clinical practice to help distinguish between the two disorders (Table 4).

Table 4. Comparative symptom profile (selected BDI items)

Symptom	MDD > BD	BD > MDD	p-value
Guilt	-	✓	0.001
Self-dislike	-	✓	0.01
Suicidal ideation	-	✓	0.001
Irritability	-	✓	0.001
Social withdrawal	-	✓	0.001
Fatigability	-	✓	0.001
Loss of libido	-	✓	0.001
Insomnia	✓	-	0.001
Anorexia	✓	-	0.02
Weight loss	✓	-	0.01
Somatic preoccupation	✓	-	0.01

Summary of Findings

- **BD patients:** earlier onset, recurrent episodes, stronger family history, higher severity, prominent guilt, suicidality, irritability, withdrawal, and loss of libido.
- **MDD patients:** female predominance, more stressful life events, higher rates of insomnia, anorexia, weight loss, and somatic complaints.

DISCUSSION

The present study compared depressive episodes in patients with MDD and BD at two tertiary care hospitals in Haldia, West Bengal and Modern Psychiatric Hospital, Narsinghar, Agartala, Tripura. The findings revealed important distinctions between the two groups, consistent with global literature and Indian studies.

Age of Onset and Course of Illness

Our results showed that BD patients had a significantly earlier age of onset (mean 24.8 years) than MDD patients (mean 32.9 years). This finding corroborates previous research from India and abroad, which consistently reports earlier onset in BD, often in the mid-20s, compared to the early 30s in MDD.^{13,14} Earlier onset in BD is clinically relevant as it predisposes patients to recurrent episodes, greater chronicity, and poorer long-term outcomes.¹⁵ In our study, BD patients also reported a markedly higher number of past episodes, reflecting the recurrent nature of bipolar illness, whereas MDD patients were more likely to present with first or fewer episodes.

Family History and Genetic Predisposition

Family history of psychiatric illness was significantly more common in BD patients, supporting the hypothesis of stronger genetic loading in bipolar disorder. This finding is consistent with studies that highlight familial aggregation as a key differentiator between BD and MDD.¹⁶ Identifying family history early can aid clinicians in suspecting bipolarity in patients presenting with depression, thereby preventing misdiagnosis and inappropriate treatment.

Stressful Life Events

Stressful life events were significantly more prevalent among MDD patients compared to BD. This observation aligns with earlier studies suggesting that unipolar depression is more strongly associated with psychosocial stressors, whereas BD episodes may occur more autonomously, independent of external triggers.¹⁷ This distinction emphasises the importance of psychosocial assessment in MDD, where stress management and psychotherapy may play a larger role in treatment.

Symptom Severity and Clinical Features

BD patients scored significantly higher on the BDI, indicating greater severity of depressive symptoms. Prominent features in BD included guilt, self-dislike, suicidal ideation, irritability, social withdrawal, fatigability, and loss of libido. These findings are consistent with recent Indian studies that report higher rates of suicidality and psychotic features in BD compared to MDD.¹⁸ In contrast, MDD patients exhibited more vegetative and somatic symptoms such as insomnia, anorexia, weight loss, and somatic preoccupation, which are typical of unipolar depression.¹⁹ Such symptom profiling is clinically useful in differentiating the two disorders, especially in resource-limited settings where advanced diagnostic tools may not be available.

Clinical Implications

Differentiating MDD and BD has profound treatment implications. Antidepressants remain the mainstay of MDD management, but their use in BD without mood stabilisers can precipitate mania, mixed states, or rapid cycling.²⁰ Our findings reinforce the need to carefully evaluate family history, age of onset, and symptom severity before initiating treatment. Early recognition of bipolarity can prevent inappropriate antidepressant use and improve long-term outcomes.

Limitations

This study has certain limitations. Because it is hospital-based, the findings may not fully represent community populations. The use of the BDI, while validated in Bengali, did not assess atypical depressive symptoms such as hypersomnia and hyperphagia, potentially overlooking important clinical features. Additionally, reliance on cross-sectional data precluded evaluation of longitudinal outcomes and treatment responses. Future research should incorporate larger, multicentre community samples and employ broader assessment tools to strengthen diagnostic differentiation between MDD and BD.

CONCLUSION

This comparative study highlights clear distinctions between depressive episodes in MDD and BD. Bipolar depression was associated with younger age of onset, recurrent episodes, stronger family history, and greater severity of symptoms, particularly guilt, suicidality, irritability, and social withdrawal. In contrast, unipolar depression demonstrated female predominance, stronger associations with stressful life events, and higher prevalence of vegetative and somatic symptoms such as insomnia, anorexia, and weight loss.

These findings reinforce the importance of thorough clinical evaluation, including family history and symptom profiling, to differentiate BD from MDD in patients presenting with depression. Early identification of bipolarity is crucial to avoid inappropriate antidepressant use, which may destabilise mood and worsen prognosis. Incorporating psychosocial assessment and culturally adapted tools such as the PSLES and Bengali BDI can enhance diagnostic accuracy in Indian psychiatric practice.

Future research should expand to multi-centre community samples and include scales that capture atypical depressive features, thereby strengthening the evidence base for distinguishing unipolar and bipolar depression in diverse populations.

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