

## Identification of bipolar spectrum disorder in patients with unipolar depression using bipolar spectrum diagnostic scale- A Pilot Study from Eastern India

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### ABSTRACT:

**Background:** It has been suggested that soft bipolarity could account for 4% to 5% of the general population. The concept of bipolar spectrum disorder (BSD) has been reconstructed to describe patients who do not meet the strict DSM-IV criteria for bipolar I and II disorders, but who were otherwise bipolar at the soft end of the spectrum.

**Objectives:** To identify the presence of bipolar spectrum disorder in patients suffering from unipolar depression using the bipolar spectrum diagnostic scale (BSDS).

**Methodology:** Fifty three such patients of either sex satisfying ICD-10 DCR criteria for mild/moderate/severe depression without psychotic symptoms in the age group of 18-60 years were selected for the study. The patients were rated on Montgomery-Åsberg Depression Rating Scale (MADRAS) to assess the severity of depression and the Bipolar Spectrum Diagnostic Scale (BSDS) to assess the presence of bipolar spectrum disorder.

**Results & Conclusion:** The prevalence of Bipolar Spectrum Disorder was found to be 22.6%. There was no relation of the group scores with the number of episodes and family history of affective illness. Though the bipolar spectrum diagnostic scale is a sensitive tool to recognize the individuals with depressive episode having underlying bipolarity, its use is more valuable as a supplement to other clinical characteristics.

**KEY WORDS:** Unipolar Depression, Bipolar Spectrum Disorder

### INTRODUCTION

The concept of bipolar spectrum arises from the work of Kraepelin and Kretschmer, who wrote about affective states ranging from the severest to the mildest that pass without sharp boundary into the domain of personal predisposition or temperament. They described individuals with affective temperaments in whom low-grade affective manifestations of a subdepressive or hypomanic nature—without necessarily reaching a clinical or pathologic level—oscillated over long periods of the lifespan. Akiskal (1983) proposed the concept of a soft bipolar spectrum, with bipolar I at the severe end, bipolar II in the middle range, and BP III (pseudo-unipolar depression) at the softest end. This concept was further widened to include those individuals having depressions with hypomanic episodes, both protracted and brief in duration, cyclothymic and hyperthymic traits, and those with familial bipolarity. Thus, the prevalence rate of 1% commonly cited in the literature rose to 5 to 8% with the inclusion of these categories under its rubric (Angst, 1998;

Judd & Akiskal, 2003). Although individuals within the bipolar II spectrum represent the most common bipolar phenotype (Simpson et al, 1993) they are often unrecognized, poorly researched, and typically mismanaged. These individuals do not seek clinical consultation for hypomania but for their depressive states and are treated with antidepressants giving rise to potential consequences as mood switching, rapid cycling and treatment resistance (Akiskal & Mallya, 1987). More recently, Ghaemi et al (2002) reconstructed the concept of bipolar spectrum disorder (BSD) to describe patients who do not meet the strict DSM-IV criteria for bipolar I and II disorders, but who were otherwise bipolar at the soft end of the spectrum as described by (Akiskal & Mallya, 1987).

Much research has been conducted on the clinical prevalence of bipolar II disorder among patients who present with major depressive disorder to various clinical settings worldwide. It is seen that from 27% to 62% of all major depressions conform to the features of bipolar II or

its variants (Akiskal et al, 2000). The French EPIDEP study (Hantouche et al, 1998) based on a representative national clinical sample provides the most compelling data on the high prevalence of bipolar II among major depressive patients. The main finding was that at index interview, 22% of major depressive patients could be diagnosed as bipolar II based on history of hypomania; a month later, upon reinterview, 40% of patients could be diagnosed as bipolar II on the basis of more in depth evaluation. The proportion of depressive patients who can be classified as bipolar II further increases if the 4-day threshold for hypomania proposed by the DSM-IV is reconsidered. As the diagnosis of bipolarity in patients with unipolar depression would have treatment implications and prognostic significance, its identification becomes very crucial. There are many features which predict a bipolar outcome in these patients. Major depressive disorder (MDD) with early onset, hypersomnic-retarded features, rapid onset and offset of depression, pharmacological hypomania, postpartum episodes, psychotic depression, and bipolar family history are some among them (Strober & Carlson, 1982).

The current diagnostic gold standard tool, the structured Clinical Interview for DSM-IV (SCID) is not sufficiently sensitive to the diagnosis of hypomania or subthreshold manic states (Akiskal & Benazzi, 2003b). An alternative method for the diagnosis of bipolar spectrum is to measure the number of hypomanic symptoms reported by subjects. Angst et al (2003) have developed the hypomanic symptoms checklist (HCL), which has been tested in the French EPIDEP study (Hantouche et al, 2003; Akiskal et al, 2003). Hirschfeld et al (2000) have developed a self-report scale for bipolar disorder, the Mood Disorder Questionnaire (MDQ) which was shown to have 0.73 sensitivity and 0.90 specificity. However, when a study was conducted to verify the sensitivity of the MDQ in a population of bipolar spectrum patients, it was found that the MDQ's sensitivity was good for bipolar type I (0.70) but less impressive for bipolar type II or NOS (0.30) (Miller et al, 2002). Recently, another scale has been developed by Ronald Pies to target bipolar II and NOS conditions: the Bipolar Spectrum Diagnostic Scale (BSDS). It is a self-rating scale for the entire bipolar spectrum and is a valuable supplement to the clinician's semi-structured interview. It was used by Ghaemi et al (2005) with the scale having equal sensitivity to diagnose bipolar I and bipolar type II or NOS. The current study is the first in India to use it as validation tool for the assessment of bipolar spectrum disorder in young adults with unipolar depression.

## METHODOLOGY

The study was carried out at the Central Institute of Psychiatry, Ranchi which is a tertiary care centre catering to patients from Eastern India. The study was approved by the institutional review board. It was a cross sectional design and patients visiting the outpatient department as well as the inpatients were selected for the study. Fifty three patients of either sex between 18 and 60 years of age fulfilling ICD-10-DCR (WHO, 1993) criteria for mild/moderate/severe episode, single or recurrent without psychotic symptoms at the first contact to the institute and giving informed consent were selected. Those having severe medical illness, mental retardation or any co-morbid psychiatric disorder were excluded. The socio-demographic and clinical characteristics of all patients were noted. They were then rated on the Montgomery-Åsberg Depression Rating Scale (MADRAS) to assess the severity of depression and only those individuals with a score  $\geq 15$  were selected. This scale consisting of 10 item checklist is used in patients with major depressive disorder, as a sensitive measure of change in symptom severity during the treatment of depression (Montgomery & Åsberg, 1979). The Bipolar Spectrum Diagnostic Scale (BSDS) was subsequently applied to assess the mood symptoms in them. It is a self rating scale which is composed of two parts. The first part is a paragraph containing 19 positively valenced sentences describing many of the symptoms of bipolar disorder. A checkmark to each sentence is worth one point. The second part is one simple multiple-choice question, asking them to rate how well the story describes them overall. The final scores of  $\geq 13$  represent positive screens for bipolar disorder on the BSDS.

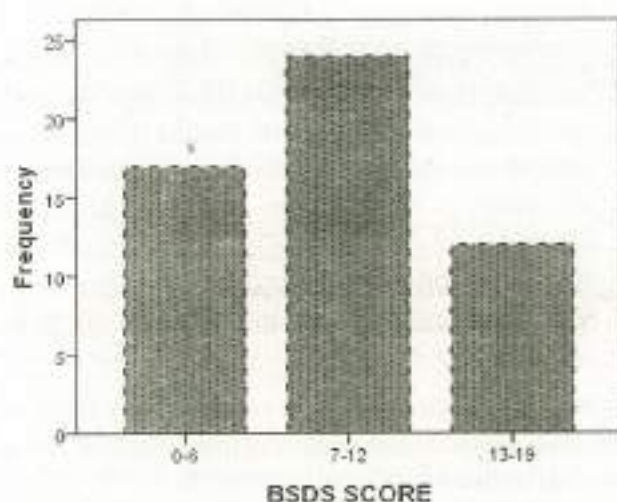
## RESULTS

The data obtained was analyzed with Statistical Package for Social Sciences-version 16.0 for Windows® (SPSS Inc., Chicago, IL, USA). Normality of data was assessed using histogram and Shapiro-Wilk test. The socio demographic and the clinical characteristics of the group have been summarized in Table 1. It was seen that the mean age of the patients was 37.49 years having a mean educational background of 10 years. Two third of the patients suffering from depression were males (67.9%). The mean duration of the index episode was 5.51 months. Most of the patients were suffering from a depressive episode of moderate severity with a mean score of 26.64. The mean BSDS score was 9.07 which were far below the threshold for a positive diagnosis of bipolar spectrum disorder. The representative group had approximately equal number of employed and unemployed

individuals. Majority of the patients were married (71.7%) and only a few belonged to higher socioeconomic status (5.7%). Seventy three percent of the patients came from the rural habitat. There was no previous history of depressive illness in sixty two percent of individuals with 28% patients reporting less than three episodes in the past and very few of them (9.4%) having more than three episodes. Approximately seventy two percent of individuals did not report presence of any psychiatric illness in the family. Only eleven percent of patients had a family history of depressive illness and only 3.8% patients had relatives suffering from non affective illnesses.

There was no relation between the groups with bipolar spectrum disorder and the past psychiatric illness ( $p < 0.05$ ) as seen in Table 2. Also, Table 3 shows that there was no significant difference seen in the group with respect to the family history of psychiatric illness ( $p = 0.236$ ). The prevalence of the bipolar spectrum disorder was 22.6% as shown in Figure 1.

**Figure 1: Prevalence of Bipolar Spectrum Disorder**



## DISCUSSION

The high percentage of males suffering from depression is in contrast to most of the epidemiological studies which point towards the female preponderance in depression. Studies concerning the gender differences in the symptomology of depression in non-clinical samples have found women to have a higher number of symptoms or a more severe type of depression (Angst & Dobler, 1984; Dion & Giordano, 1990). So, the nature of the study design which excluded patients with psychotic symptoms

in the presence of a severe depressive episode could explain the difference in the findings. However, one study in Mumbai among young adults attending college, men were found to be more depressed (25%) than women (18%) (Parikh et al, 2001). The average age of onset for recurrent unipolar major depressive episode falls between 30 and 35 years, whereas single episode major depression begins few years later. A similar finding was observed in our study with the average age of onset being 37.49 years. Mirza and Jenkins (2004) have found depressive disorders to be associated with middle age, low level of education, financial constraints and relationship problems. Studies have shown that economic hardship is a significant cause of depression. The Chennai Urban Rural Epidemiology Study (CURES) showed that there was an inverse relationship in prevalence of depression with income and education (Poongothai et al, 2009). However, no difference was found in the employment status of the patients in our study and they had a mean education of 10 years. Western studies report people in the lower economic status to be more depressed compared to those in the middle and high income status (Kessler et al, 1994; Isometsa et al, 1997). It has also been shown that illiterate people have higher prevalence of depression compared to their more educated counterparts (Pallson et al, 2001). Our study reflects similar findings with most of the people hailing from the rural background (71.7%) and only a few of them belonging to higher socio-economic status (5.7%). No significant difference was found in the bipolar spectrum disorder scores in patients with respect to the family history. However, the presence of family history of bipolar disorder has been the most important predictor of bipolarity in patients with unipolar depression. In fact, these patients with positive family history are considered as suffering from unipolar depression (Akiskal, 2002). Also, the presence of recurrent depressive episodes is also a predictor of bipolarity. Data from the National Institutes of Mental Health Collaborative Depression Study on "unipolar" patients who switched to bipolar II during 11 years of follow-up found high rates of recurrent depression in such patients (Akiskal et al, 1995). Similar results couldn't be replicated in our study probably due to the low sample size.

Benazzi (2002) found that about 45% of 107 unselected outpatients with mood disorders showed evidence of bipolar spectrum illness using the MDQ (Mood Disorder Questionnaire). Hirschfeld et al (2005) found that of 649 patients taking antidepressants for depression diagnosed by a primary care practitioner, 21% screened positive for bipolar disorder on the MDQ. When the

criteria proposed by Ghaemi et al (2002) was used to diagnose bipolar spectrum, the rate of bipolar I, II, and BSD was reported to be 61% in psychiatric outpatients who had at least 1 major depressive episode in a study conducted in Poland (Rybakowski et al, 2005). Daniel et al (2005) have used both the criteria proposed for BSD and the Hypomanic Symptom Checklist to diagnose bipolar spectrum Disorder. Between 47.1% and 77% of the individuals with major depression were diagnosed as having bipolar spectrum, depending on the diagnostic criteria used. In our study, the prevalence of the bipolar spectrum disorder was 22.6%. Our findings are in the range of prevalence of bipolar spectrum disorders across various studies (Akiskal et al, 2000). There could be several reasons for the comparatively lower prevalence. One of the factors could be the sole reliance on the self report measures by the patient to diagnose the disorder based on the probability criteria. The lack of inclusion of family history of bipolar illness, age of onset of depression, atypicality of symptoms and treatment response to antidepressants would lead to exclusion of patients having underlying bipolarity. Also, patients with severe major psychotic depression were not included in the study which could have led to low prevalence rates. But this could not be the likely factor as BSDS is a self report scale and patients with low insight into their illness may often underreport their symptoms (Ghaemi et al, 2005). The Bipolar Disorder is difficult to detect using self report measures (Laje et al, 2002). One of the reasons could be the difficulty in recognizing the hypomanic or sub-hypomanic features by the patient as they do not cause substantial impairment. The BSDS scale has its advantage in that it focuses on change in the energy and drive during hypomanic episodes rather than emphasis on mood symptoms. We conclude that though the bipolar spectrum diagnostic scale is a sensitive tool to recognize the individuals with depressive episode having underlying bipolarity, its use is more valuable as a supplement to other clinical characteristics.

#### LIMITATIONS OF THE STUDY

The small size of the population was one of the limitations of the study. Also, there is a need for comparison of this scale with other self report scales.

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**TABLES**

**Table 1: Sociodemographic and clinical characteristics of the group**

Variables		Mean (SD)
Age		37.49(1.30)
Education in years		10 (5.07)
Duration of index episode in months		5.51 (6.32)
MADRAS total score		26.64 (8.18)
BSDS Score		9.07 (4.02)
<b>N (%)</b>		
Sex	Male	38 (87.9)
	Female	17 (32.1)
Occupation	Employed	22 (41.5)
	Unemployed	31 (58.5)
Marital status	Married	38 (71.7)
	Unmarried	15 (28.3)
SES	Lower	27 (50.9)
	Middle	23 (43.4)
	Higher	3 (5.7)
Habitat	Rural	39 (73.6)
	Urban	14 (26.4)
Past Psychiatric history	≤ 3 episodes	15 (28.3)
	>3 episodes	5 (9.4)
	Absent	33 (62.3)
Family Psychiatric History	Manic illness	7 (13.2)
	Depressive illness	6 (11.3)
	Non-affective illness	2 (3.8)
	Absent	38 (71.7)

**Table 2: Comparison of the BSDS scores with the past psychiatric illness**

BSDS Scores illness	Past psychiatric Y	N (%)	X <sup>2</sup>	df	P	Cramer's
0-6	< 3 episodes	4 (26.7)	8.89	4	0.058	0.289
	> 3 episodes	1 (20)				
	Absent	12 (36.4)				
7-12	< 3 episodes	4 (26.7)				
	> 3 episodes	4 (80)				
	Absent	16 (48.5)				
13-19	< 3 episodes	7 (46.7)				
	> 3 episodes	0 (0)				
	Absent	5 (15.2)				

**Table 3: Comparison of the BSDS scores with the family psychiatric illness**

BSDS Scores	Family psychiatric illness	N (%)	X <sup>2</sup>	df	P
0-6	Manic	42 (28.6)	8.00	6	0.236
	Depressive	0 (0)			
	Non-Affective	0 (0)			
	Absent	15 (39.5)			
7-12	Manic	2 (28.6)			
	Depressive	4 (66.7)			
	Non-Affective	2 (100)			
	Absent	16 (42.1)			
13-19	Manic	3 (42.9)			
	Depressive	2 (33.3)			
	Non-Affective	0 (0)			
	Absent	7 (18.4)			

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