Trajectory of insight on various dimensions among bipolar disorder in-patients

background: Insight is awareness of one’s symptoms, illness, and need for treatment. In bipolar disorder, insight is better in bipolar depression and nonpsychotic depression when compared with mania and psychotic depression. Insight impacts on medication adherence. In our study, we measured and compared with various clinical parameters of insight. The aim of this study is to assess various dimensions of insight recovery prospectively in bipolar affective disorder patients with treatment and drug compliance.

Materials and Methods: Patient’s insight was assessed using Mood Disorder Insight Scale (MDIS) at baseline, 1st, 3rd, and 6th months. Their insight was then compared with various sociodemographic profiles and correlated with number of mood episodes, family history of mental illness, and 6-month MDIS scores. Results: Depression patients scored better in insight components \(P = 0.001\). The good compliance group attributed their symptoms to their illness than the poor compliance group \(P = 0.013\). The MDIS scores were gradually improving from baseline to 6 months \(P \leq 0.001\). There was no relationship between insight and the number of episodes \(P = 0.788\).

Conclusion: Depressive episode patients had better insight during the baseline, which improved during 6 months follow-up compared with manic patients. Among various components of insight, insight on the attribution of symptoms was a predictor of good compliance. Progression of insight was steady and proportionate to the duration of treatment in depressive episode patients.

Keywords: Bipolar affective disorder, depression, insight, mania

The bipolar affective disorder is common and disabling disorder and is associated with considerable morbidity.[1] It is a mood disorder that is characterized by episodes of depression, mania, hypomania, and mixed episodes, with a period of inter-episodic recovery. The World Health Organization estimated that bipolar disorder was the 46th greatest cause of disability and mortality in the world among 291 diseases and causes of injuries. Insight is defined as the awareness of one’s illness, the ability to recognize the symptoms of the illness and the need for treatment. Insight of a patient can be categorized into absent insight, partial insight, and full insight.[2-5]

Insight is being highlighted as state-dependent component in a few studies. In disorder like bipolar affective illness, impairment in insight fully resolves. There are few studies which highlight that insight does not resolve completely even in the euthymic state. The more the number of episodes especially manic episodes, the lesser is the insight recovery. However, psychotic depression is associated with less insight than nonpsychotic depression. Insight continues to be poor in chronic illness like schizophrenia. Nowadays, more attention has been given to insight of the patient toward mental illness. There are many...
studies, which were being done which evaluated the relationship between insight and course and outcome of the illness, compliance to medications and the severity of psychopathology. The prevalence of good insight in remitted bipolar affective disorder patients is only 47%.[6] In another study, the prevalence of absent insight was 39.09% in the schizophrenia group, 36.36% in the bipolar disorder with psychotic symptoms and 9.37% in bipolar disorder without psychotic symptoms.[7]

The bipolar affective disorder is usually associated with noncompliance and poor outcome.[8,9] Insight and quality of life, cognitive functions, psychotic symptoms, and the number of episodes in mood disorders are interrelated.[10] Many studies have shown that insight is impaired in the acute phase of illness and insight improves as the patient improves symptomatically. Insight was more impaired during manic episodes when compared with depression.[11] Lack of insight in mania was present for all three components of insight-awareness of illness, social consequences of illness, and therapy benefits.[12] A study has showed that insight of bipolar affective disorder patients and schizophrenia patients were the same during admission. At 6 month follow-up, there was a large difference between both the groups. Bipolar disorder patients had better insight when compared with schizophrenia patients.[13]

Adherence to medications plays a key role in the effectiveness of any treatment. Research on the relationship between insight and adherence to treatment is important because adherence to medication can be modified. Meta-analysis that was done to study the relationship between insight and treatment compliance showed poor insight was associated with poor adherence to medications, which was similar to the literature on schizophrenia patients.[14] Studies on schizophrenia patients showed that patients with more insight have a better long-term outcomes.[15] There are similar researches in bipolar disorder, which showed improvement of insight from baseline and follow-up was related to better outcomes of illness and quality of life.[16]

Various scales are available for the assessment of insight. However, most of the scales were validated to measure insight in psychotic illness. Mood Disorder Insight Scale (MDIS) is a short and self-report instrument, includes all the components of insight and it is specifically modified for affective disorder patients. The MDIS was derived from the insight Scale for psychosis which was developed by Birchwood et al., 1994. This scale measures three aspects of insight-awareness of mental disorder, attribution of symptoms, and need for treatment. Hence, we used this scale, which specifically measures insight in bipolar affective disorder in our study.

Most of the studies on insight were done in schizophrenia patients. Very few studies were done on bipolar disorder patients. There are only very few studies which have studied insight in various phases of illness. In disorder like bipolar affective illness impairment in insight fully resolves. The more the number of episodes especially manic episodes, the lesser is the insight recovery. Insight continues to be poor in chronic illness like schizophrenia.

An earlier study reported a 94% prevalence of impaired insight in symptomatic patients in various psychiatric illness such as depression, manic, and bipolar I patients. The prevalence of insight in remitted patients is 47%.[6]

A prospective study on insight in various phases of bipolar illness, observed that insight was impaired in mania when compared with the euthymic state. Insight was better in patients who had single episode of mania or depression; this insight was similar to preepisode insight. However, patients with multiple episodes of illness in 2 years had poorer insight when compared with insight of patients with less number of episodes.[7,17,18]

Very limited number of studies had compared insight with sociodemographic and clinical variables such as age, educational status, gender, marital status, and family history of mental illness. Most of the studies that have been done in insight are cross-sectional study. There are very few prospective studies on insight in bipolar disorder patients.

Therefore, the aim of this study is to assess insight recovery in bipolar affective disorder patients admitted in the psychiatry ward. We also assessed the correlation of insight about awareness of illness, attribution of symptoms to illness and insight recovery with various phases of bipolar affective illness.

**MATERIALS AND METHODS**

**Participants and procedures**
This is a prospective study. Participants of our study were both male and female gender for >12 years. These patients were admitted and were undergoing in-patient treatment in PSG Hospitals, a 2000-bedded tertiary hospital at Coimbatore, for Bipolar affective disorder either in depression or manic phase. These patients were admitted between the period of April 2016 and 2017. The participants were diagnosed with bipolar affective disorder using the International Statistical Classification of Diseases (ICD-10) criteria by the treating consultant. Patients having comorbid mental retardation and other Axis 1 psychiatric disorder except nicotine dependence, patients who did not respond for at least three telephonic calls in
the follow-up and patients <12 years old were excluded from our study.

We recruited 50 consecutive in-patient bipolar affective disorder patients based on the ICD-10 criteria. Nine patients were excluded as per the exclusion criteria. Five of them had follow-up elsewhere, two patients did not give consent and two patients had mental retardation. Informed consent in the local language (Tamil) was obtained from primary caregiver for those patients who were not able to give consent. Once the patient became euthymic informed consent was obtained from the patient as well. The personal identification data such as name, age, gender, educational qualifications, and socioeconomic data of all the participants were recorded. Data related to psychiatry illness such as the number of past episodes and family history of mental illness was also recorded.

Once the patient got admitted, the severity of the present episode was measured using rating scales. The severity of affective symptoms was assessed by the Youngs Mania Rating Scale (YMRS) and Hamilton Depression Rating Scale (HAMD) for mania and depression, respectively. Baseline Insight was assessed using MDIS. Then, the patient was treated according to their clinical diagnosis by the consulting psychiatrist. One month after discharge, the insight was assessed using the MDIS scale and recorded. Then again, at the 3rd and 6th months of follow-up insight was measured using MDIS. The total scores of insight were calculated at baseline, 1st month, 3rd month, and 6th month and compared for improvement in insight.

Drug compliance was assessed clinically from the patient and reliable informant. During follow-up, the course of the illness was assessed, and the escalation of the dose of psychotropics or addition of a new psychotropic medication is also assessed. Patients who missed the follow-up are contacted through telephonic calls, encouraged to attend outpatient department and Insight assessed. Patients who did not respond for at least three telephonic calls were considered as dropouts [Figure 1]. The study was approved by the Institute Human Ethics committee of PSG IMSR and Hospital.

**Assessment**

Data were collected using the following instruments.

**Semi-structured pro forma**

The sociodemographic profile of the patient, details of substance use, diagnosis, and clinical details (compliance of medications, the severity of illness using YMRS and HAMD scales, number of past episodes, and family history of psychiatry illness) were assessed.

**Mood Disorder Insight Scale**

MDIS is a short and self-report instrument. This scale has eight questions which are read by the interviewer and the patient is asked whether their response is agree, disagree, or unsure for each of the eight items in the questionnaire. Depending on the response, the scores are calculated. The total score is 16. The MDIS was derived from the Insight Scale for psychosis, which was developed by Birchwood. This scale has good test–retest reliability and internal consistency. The test–retest reliability (coefficient alpha) of the MDIS was 0.95 ($P < 0.01$). This scale for insight includes all the components of insight and it is specifically modified for affective disorder patients. The administration of this scale does not require any special training as this is a self-report questionnaire. This scale measures three aspects of insight-awareness of mental disorder, attribution of symptoms, and need for treatment.

**Data analysis**

Data were entered into MS Excel and analyzed using SPSS version 20. Qualitative data were summarized as frequencies and percentages. Quantitative data were checked for normality. Normally distributed data were summarized using mean and standard deviation. Nonnormally distributed data were summarized using Median and inter-quartile range. Association between qualitative variables was tested using Chi-square test. Mann–Whitney U test was used to compare the distribution of MDIS scores by level of compliance and phase of disease; mania or depression. Friedman’s test was used to check if the MDIS scores changed significantly with time. Correlation between the YMRS score and MDIS at baseline was tested using the Spearman rank correlation test. Statistical significance was interpreted using an arbitrary cut-off of $P = 0.05$.

**RESULTS**

Descriptive statistics for the study variables and demographics data are shown in Table 1.

The number of episodes ranged from 2 to 7. Fifteen patients had psychotic symptoms in their mood episodes and twenty-six patients had no psychotic symptoms. Family history of psychiatry illness was present in 26.8% ($n = 11$) and absent in remaining 73.2% ($n = 30$). Twenty-three patients (56.1%) of the participants had good compliance and the remaining 43.9% ($n = 18$) had poor compliance [Table 2].

The insight scores between different age group were compared, the $P$ value was not statistically significant ($P = 0.318$). The insight scores, according to educational status, were not
statistically significant \( P = 0.75 \). Insight scores did not differ statistically between males and females, \( P \) value was 0.552. Insight scores of participants who had family history of mental illness were compared with participants who did not have family history of mental illness also did not have any statistical significance \( P = 0.124 \) [Table 2].

The overall scores of the MDIS scale were compared between mania and depression groups, depression patients scored more when compared with manic patients in the insight scale. The more the MDIS score, the better the insight. The \( P \) value was also significant \( P = 0.001 \) [Table 3].

The total scores of MDIS between good compliance and poor compliance group were statistically significant, \( P \) value was 0.012. Good compliance group scored better in insight scale than the poor compliance group [Table 4].

In our study, we assessed for the insight score of the participants at baseline, 1\textsuperscript{st} month, 3\textsuperscript{rd} month and 6\textsuperscript{th} month. When these scores were compared from baseline to the end of 6 months, we found that the insight scores were gradually improving. This was statistically significant and \( P \) value was < 0.001 [Table 5].

Figure 2 shows the MDIS scores at baseline, 1\textsuperscript{st} month, 3\textsuperscript{rd} month, and 6\textsuperscript{th} month in depressive patients. The MDIS scores of the depressive patient were higher when compared with manic patients. This shows that depressive patients have more insight than manic patients. Figure 3 shows the MDIS scores at baseline, 1\textsuperscript{st} month, 3\textsuperscript{rd} month, and 6\textsuperscript{th} month in manic patients. The MDIS scores of the manic patient were lower when compared with depressive patients indicating manic patients have less insight about illness than depressive patients.
In Figure 4, MDIS scores were plotted against the period of assessment. The MDIS scores have an increasing trend from baseline to 6 months in the depression group. The progression of insight reached a plateau after 3 months for manic patients. The number of episodes of illness was compared with MDIS scores. The \( P \) value was not significant (\( P = 0.788 \)).

The presence of family history of mental illness was compared with MDIS scores. The \( P \) value was not significant (\( P = 0.701 \)) [Table 6].

MDIS scores were negatively correlated with both YMRS and HAMD scores, which implies less severe the illness, the better the insight. The correlation with YMRS was statistically significant (\( P = 0.003 \)), whereas with HAMD the correlation was not statistically significant (\( P = 0.640 \)) [Table 7].

**DISCUSSION**

Insight is a multidimensional and complex phenomenon (Amador et al., 1993). We compared sociodemographic profile (name, age, gender, educational...
In this study, insight scores were lower in females than males ($P = 0.08$), but the $P$ value was not significant. The insight scores were compared with different educational status groups. There was no statistically significant ($P = 0.75$) difference within these groups. On the contrary to our understanding insight did not differ according to the educational status in our study. To our knowledge, no other studies on insight had compared the relationship between educational status and marital status.

Insight scores of participants who had family history of mental illness were compared with participants who did not have family history of mental illness. Though the scores of the participants who had family history of mental illness were higher than the other group, it was not statistically significant.

The overall MDIS scores, when compared between mania and depression groups, showed that depressive patients scored more when compared with manic patients in the insight scale ($P = 0.001$). The individual dimensions of scale were also better among depression than mania, which was statistically significant. Another study which was done to evaluate insight in mania, depression and euthymia in 95 bipolar affective disorder patients showed poor insight among mania patients when compared with depressive patients.$^{[19]}$ The $P$ value was significant $0.001$.

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Twenty-three patients that is 56.1% of the participants had good compliance and the remaining 43.9% ($n = 18$) had poor compliance. Compliance is a very important part to consider in illness like bipolar affective disorder. Literature on the prevalence of nonadherence also had similar values. The median prevalence of nonadherence is 44.7% in

**Table 3: Comparison of insight measured using Mood Disorder Insight Scale Scores between depression and mania at baseline**

| Score                        | Median (IQR) | Mann-Whitney U | $P$  |
|------------------------------|--------------|----------------|------|
| Awareness of mental disorder | 2 (2)        | 4 (2)          | 37.5 | 0.003 |
| Attribution of symptoms      | 2 (2)        | 2 (1)          | 53   | 0.021 |
| Need for treatment           | 3 (2)        | 4 (3)          | 60   | 0.041 |
| Total                        | 6 (4)        | 10 (4)         | 28.5 | 0.001 |

**Table 4: Comparison of insight measured using Mood Disorder Insight Scale Scores between patients with different levels of compliance**

| Score                        | Median (IQR) | Mann-Whitney U | $P$  |
|------------------------------|--------------|----------------|------|
| Awareness of mental disorder | 2 (4)        | 2 (2)          | 163.5| 0.225 |
| Attribution of symptoms      | 2 (2)        | 2 (2)          | 118.5| 0.013 |
| Need for treatment           | 4 (4)        | 2 (2)          | 147.5| 0.106 |
| Total                        | 7 (5)        | 4 (5)          | 112  | 0.012 |

**Table 5: Progression of insight based on Mood Disorder Insight Scale Scores at baseline, 1, 3 and 6 months**

| MDIS       | Median | IQR  | $P^*$  |
|------------|--------|------|--------|
| Baseline   | 6      | 5    | <0.001 |
| 1 month    | 8      | 4    |        |
| 3 months   | 10     | 5    |        |
| 6 months   | 10     | 6    |        |

*Friedman test. MDIS - Mood disorder insight scale; IQR - Interquartile quartile range

**Table 6: Correlation of number of episodes, family history of mental illness, and 6 months Mood Disorder Insight Scale Scores**

| Factors         | MDIS 6 months | $P$   |
|-----------------|---------------|-------|
| Number of episodes |               |       |
| 1               | 9 (3)         | 0.788 |
| 2               | 10 (6)        |       |
| 3               | 9 (7)         |       |
| Family history  |               |       |
| Yes             | 10 (4)        | 0.701 |
| No              | 10 (6)        |       |

MDIS - Mood disorder insight scale

**Table 7: Correlation of mood disorder insight scale baseline total score with Youngs mania rating scale and Hamilton depression rating scale**

| YMRS score | HAMD score | Spearman correlation coefficient | $P$  |
|------------|------------|---------------------------------|------|
| −0.488**   | −0.287     | 0.003                           | 0.640|

YMRS - Young's mania rating scale; HAMD - Hamilton depression rating scale

Qualifications, and socioeconomic data) of the participants with MDIS scores. There was no difference in insight between different groups.
In one study that was done to assess the predictors of nonadherence in bipolar affective disorder patients showed treatment nonadherent individuals had more negative attitudes toward medications and reduced insight into illness when compared with treatment adherent individuals. We also compared the MDIS scores between good compliance and poor compliance group. The total scores of MDIS between good compliance and poor compliance group were statistically significant and $P$ value was 0.012. Yen et al. study showed insight about illness and treatment was positively correlating with adherence to medication in the bipolar affective disorder group and schizophrenia group. So interventions, which concentrated on building insight play a vital role in ensuring good compliance among bipolar patients.

In our study, we assessed for the insight score of the participants at baseline, 1st month, 3rd month, and 6th month. When these scores were compared from baseline to 6 months, we found that the insight scores were gradually improving. This was statistically significant and $P$ value was $<0.001$. In another prospective study which evaluated the correlation of insight in 65 bipolar disorder patients for 2 years showed insight of the manic patients gradually improved as they returned to the euthymic state.

The average number of episodes in our study among the participants was two. The number of episodes ranged from 2 to 7. In our study, the number of episodes did not make any significant difference in insight of the participants ($P = 0.788$). Similar findings were seen in Cassidy study; on the contrary, showed more the number of episodes, poorer the insight.

**Limitations**

The sample size is very small in our study, and hence the results cannot be generalized. The initial assessment of insight was not assessed on specifically on the same day after admission for all patients. The treating consultant psychiatrist made a diagnosis of bipolar affective disorder. No separate research diagnostic criteria were used to recruit our patients. With the help of insight scale we have assessed whether the patient is aware of their symptoms in general but have not analyzed about the awareness of individual symptoms. MDIS scale gives only qualitative assessment and not a quantitative assessment.

**CONCLUSION**

Depressive episode patients had better insight during the baseline, which improved during 6 months follow-up compared with manic episode patients. Among various components of Insight, insight on the attribution of symptoms was a predictor of good compliance during 6 months follow-up than the awareness of mental disorder or need for treatment. Progression of insight was steady and proportionate to the duration of treatment in depressive episode patients. More severe the manic episode poorer was the insight.

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