

# Psychotic Mania and Nonpsychotic Mania: A Comparative, Cross-sectional Study

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## ABSTRACT

**Aims and objectives:** Though mania is considered a mood disorder and presents with elevated/irritable mood, increased goal-directed activity, pressure of speech, and flight of ideas, they can also manifest with psychotic symptoms including Schneiderian first-rank symptoms. The present study was undertaken to compare and study any differences between psychotic mania and nonpsychotic mania groups.

**Materials and methods:** We compared the sociodemographic and clinical variables between 30 psychotic and 30 nonpsychotic mania patients, i.e., a total of 60 patients. After obtaining ethical clearance from the Institutional Ethics Committee, we used the Mini International Neuropsychiatric Interview to conduct structured diagnostic interview and the Young's Mania Rating Scale (YMRS) to assess the severity of mania.

**Results:** Young's Mania Rating Scale scores (Mann-Whitney  $U = 785.5$ ;  $p < 0.05$ ) and duration of hospital stay (Mann-Whitney  $U = 587.0$ ;  $p = 0.04$ ) were significantly different between the two groups. During correlation analysis, negative correlation between age of onset and number of episodes of psychotic mania ( $p = -0.477$ ;  $p = 0.008$ ) was seen. A moderate association between duration of hospitalization and YMRS scores ( $p = 0.331$ ;  $p = 0.010$ ) was also observed.

**Conclusion:** Psychotic mania tends to be more severe and needs longer duration of stay in hospital compared to nonpsychotic mania. The negative correlation between age of onset and the number of episodes of psychotic mania highlights the need for specialized early interventions to treat such cases to alter the course of the disorder and improve the socio-occupational impairment.

**Keywords:** Age of onset, Bipolar disorder, Nonpsychotic mania, Psychotic mania.

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## INTRODUCTION

Bipolar affective disorder is a severe psychiatric disorder that is associated with high levels of long-term morbidity, comorbidity, hospitalization, and disability.<sup>1</sup> The higher morbidity and mortality results from suicide, accidents, and adverse outcomes due to the use of comorbid substance and medical illnesses.<sup>2</sup> Bipolar disorder primarily because of its early onset and chronic nature across the life span has been identified as the sixth leading cause of disability-adjusted life years in the world among people aged 15–44 years.<sup>3</sup>

During manic episodes in addition to elevated/irritable mood, increased goal-directed activity, pressure of speech, and flight of ideas, psychotic symptoms have also been recorded. In a survey of 26 studies of psychotic symptoms in mania, Goodwin and Jamison<sup>4</sup> concluded that approximately 58% of patients had history of at least one psychotic symptom. Psychotic symptoms are frequently reported by subjects suffering from bipolar disorder, being experienced by at least 68% of them.<sup>5</sup> Of note, up to 50% of patients with a manic episode can manifest psychotic symptoms.<sup>6</sup> Schneiderian first-rank symptoms have also been reported in 8–23% of manic cases.<sup>7</sup> Furthermore, psychotic bipolar patients were found to have more working impairment and social dysfunction than nonpsychotic ones.<sup>8</sup> Hence, it is important to study the differences between psychotic and nonpsychotic manias because if there are significant differences between the two entities then a distinct approach to management maybe needed.

In the light of abovementioned considerations, the present study was undertaken with the following objectives: (a) to describe the sociodemographic and clinical characteristics of psychotic mania and nonpsychotic mania and (b) to compare the differences in the

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sociodemographic and clinical variables between the two clinical groups.

## MATERIALS AND METHODS

This study was conducted from January 2015 to December 2015 in Yenepoya Medical College Hospital, Mangaluru which is a tertiary care hospital. Consecutive in-patients aged 18 years and above, presenting with psychotic or nonpsychotic mania as per ICD-10 criteria were included in the study.<sup>9</sup> Written informed consent was obtained from a close relative, if the patient lacked sufficient insight. Diagnosis was based on clinical interview using MINI (The Mini International Neuropsychiatric Interview English Version 5.0.0).<sup>10</sup>

Patients with history of mental retardation, delirium, organic mental disorder or schizophrenia, and other related psychotic disorders were excluded. Ethical clearance was obtained from Institutional Ethics Committee. After the subjects satisfied the inclusion and exclusion criteria, the relevant sociodemographic and clinical data were collected with a specifically designed data sheet. Mini International Neuropsychiatric Interview was used to conduct structured diagnostic interview. This tool has been used in several multicenter clinical trials and epidemiological studies. Young's Mania Rating Scale (YMRS) is one of the most frequently utilized rating scales to assess manic symptoms and was used to rate the severity of mania at intake.<sup>11</sup>

### Data Analysis

The collected data were entered in MS Excel. The categorical variables were presented as percentages/proportions. Continuous variables were expressed in terms of mean and standard deviation. Chi-square test and Fisher exact test were used to study the association between categorical variables and Student *t*-test and Mann-Whitney *U* test were used to study the association between continuous variables. Data were further analyzed using the software Statistical Package for the Social Sciences (SPSS 22.0 version).<sup>12</sup>

### RESULTS

A total of 60 patients were included in the study using consecutive sampling, 30 patients with nonpsychotic mania and 30 patients with psychotic mania. Our sample consisted of higher number of men ( $n = 37$ ) than women ( $n = 23$ ). About 73.3% of patients in the psychotic group had low educational status compared to the nonpsychotic group (56.7%). Most of the participants belonged to the nuclear family (93.3%). The sample included most of the participants in class 1 of socioeconomic class based on BG Prasad's classification

There was no statistically significant difference with respect to sociodemographic factors like age, gender, educational status,

family type, and socioeconomic status between the psychotic and nonpsychotic mania groups (Table 1).

Young's Mania Rating Scale scores were significantly higher in the psychotic mania group than in the nonpsychotic mania group (Mann-Whitney  $U = 785.5$ ;  $p < 0.05$ ). There was also a statistically significant difference in duration of hospital stay between psychotic and nonpsychotic mania groups (Mann-Whitney  $U = 587.0$ ;  $p = 0.04$ ). The difference in number of episodes across categories of recovery was also statistically significant (Mann-Whitney  $U = 455.0$ ;  $p = 0.012$ ). There was no statistically significant difference with respect to clinical factors like number of episodes, age of onset, and substance use between psychotic and nonpsychotic mania groups (Table 2). Patients with psychotic mania had predominantly grandiose delusions (68%) followed by persecutory delusions (24%), and referential delusions (8%). Auditory hallucinations were present in 46.66% of patients belonging to the psychotic group. They were mostly second person (23.3%).

During correlation analysis for studying the strength of a linear association between variables, we found a negative correlation between age of onset and number of episodes of psychotic mania group ( $p = -0.477$ ;  $p = 0.008$ ). A moderate association between duration of hospitalization and YMRS scores was also observed ( $p = 0.331$ ;  $p = 0.010$ ). No linear association was found between age of onset and number of episodes of nonpsychotic mania group ( $p = 0.057$ ;  $p = 0.766$ ).

### DISCUSSION

Although men and women are equally likely to get bipolar affective disorder, our sample consisted of more number of men compared with women. There were no statistically significant gender differences between the two groups of psychotic and nonpsychotic mania, similar to the study done by Kessler et al.<sup>13</sup> In our sample, among men nonpsychotic mania was more prevalent compared to psychotic mania and among women psychotic mania was more prevalent compared to nonpsychotic mania which was similar to the findings of Yildiz and Sachs.<sup>14</sup>

**Table 1:** Comparison between psychotic and nonpsychotic mania—categorical variables

Variable	Nonpsychotic mania N (%)	Psychotic mania N (%)	Test (Chi-square/ Fisher exact)	Significance
Gender			0.635	0.426
Male	20 (33.33)	17 (28.33)		
Female	10 (16.66)	13 (21.66)		
Education			—	0.553 <sup>#</sup>
Illiterate	06 (10)	10 (16.66)		
Primary school	11 (18.33)	12 (20)		
High school	10 (16.66)	06 (10)		
College	03 (05)	02 (3.33)		
Family type			—	0.612 <sup>#</sup>
Nuclear	29 (48.33)	27 (45)		
Joint	01 (1.66)	02 (3.33)		
Other	0	01 (1.66)		
Socioeconomic status			—	0.727 <sup>#</sup>
1	22 (36.66)	24 (40)		
2	05 (8.33)	05 (8.33)		
3	03 (05)	01 (1.66)		
Substance use			1.148	0.284
Present	17 (28.33)	21 (35)		
Absent	13 (21.66)	09 (15)		

<sup>#</sup>Fisher exact

**Table 2:** Comparison between psychotic and nonpsychotic mania—continuous variables

Variable	Nonpsychotic mania (Mean ± SD)	Psychotic mania (Mean ± SD)	Mann Whitney U	Significance
YMRS score	23.67 ± 5.448	33 ± 6.125	785.5	<0.05*
Age at onset	30.93 ± 13.50	29.50 ± 11.65	433.0	0.801
Duration of hospital stay	9.87 ± 5.94	13.57 ± 8.76	587.0	0.041*
No. of episodes	4.50 ± 8.39	5.33 ± 6.89	559.5	0.102

\*Significant

In our study, the peak age of onset of mania was between the age-group 20–40 years which was similar to a study by Kennedy et al.<sup>15</sup> In the Bipolar Disorder Course and Outcome Study from India (BiD-CoIN study), Grover et al. also reported that the mean age of onset of the first episode of illness in their study sample was 26.3 years.<sup>16</sup> No significant difference was noted in age of onset in patients with psychotic mania and nonpsychotic mania, which is similar to a study by Carter et al.<sup>17</sup> It was also noted that there was a negative correlation between age of onset and number of episodes within the psychotic mania group. Early age of onset could lead to more neuropsychological dysfunction,<sup>18</sup> and as psychosis is neurotoxic,<sup>19</sup> it could lead to more number of episodes in psychotic mania group. Still, it is not fully clear as to whether early age of onset is a biological vulnerability.<sup>20</sup> There was no significant difference upon comparison in the number of episodes between the two groups of mania, similar findings were observed in a study from Turkey.<sup>21</sup>

There was a statistically significant difference in YMRS scores of psychotic and nonpsychotic mania and a positive correlation was found between the YMRS score and duration of stay in hospital ( $p = 0.331$ ;  $p = 0.010$ ). Those patients who scored high in YMRS at intake had a longer duration of stay in hospital and our findings are in line with other studies.<sup>22,23</sup> Incomplete recovery was more among patients with psychotic mania compared to patients with nonpsychotic mania. Our study found that the distribution of number of episodes across categories of recovery was different and that patients who had complete inter-episodic recovery were associated with lower number of episodes. Significantly more biological abnormalities, specifically higher kynurenine levels in the cerebrospinal fluid,<sup>20</sup> high DHEA-S,<sup>24</sup> and subtle brain changes<sup>25</sup> in psychotic bipolar patients might be responsible for higher YMRS scores, longer duration of hospital stay, and incomplete recovery. Our findings are similar to a study done in Lebanon.<sup>26</sup>

Generally, patients with mental illness have a heightened risk of medical comorbidities because they often receive suboptimal preventive medical care.<sup>27</sup> Surprisingly in our study, majority (81.7%) of the patients did not have any medical comorbidity and only a small number of subjects had comorbidities.

Similar to the earlier studies,<sup>28</sup> our study participants also had Schneiderian first-rank symptoms. Patients with psychotic mania had predominantly grandiose delusions (68%) followed by persecutory delusions (24%), and referential delusions (8%). Auditory hallucinations were present in 46.66% of patients belonging to the psychotic group. They were mostly second person (23.3%). Keck et al.<sup>5</sup> in their study found 25% of the patients had hallucinations, and the most common was auditory hallucinations. The psychotic mania group required a longer duration of stay in hospital compared to the nonpsychotic mania group. This can be attributed to the severity of the illness which was more among the psychotic group.

In our study, the sample size was relatively smaller. The sample consisted of hospitalized patients and hence the inference cannot be extrapolated to bipolar patients in the community. This is a cross-sectional study which is a study design with its own limitations. Data about compliance and recovery were based on reports from patients, clinicians, and family members who may be subjected to recall bias.

## CONCLUSION

Psychotic mania tends to be more severe and needs longer duration of stay in hospital compared to nonpsychotic mania. This highlights the need for a distinct yet intense approach to treat psychotic mania in order to reduce the socio-occupational impairment. As the age of onset negatively correlated with number of episodes of psychotic mania, it may be worthwhile to study if early intervention may alter the course of the disorder.

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