

Psychometric Properties of the Insight in Psychosis Questionnaire and its Correlation to Psychopathology in Indian Population

Rohit Garg, Satinder Kaur Cheema, Rajnish Raj

ABSTRACT

Background: The present study attempted to standardize insight in psychosis questionnaire in India and correlate insight with psychopathology and functioning. **Materials and Methods:** A cross-sectional study was conducted in July and August 2016. The questionnaire was translated into Hindi following standard procedure. After ensuring that the patients fulfilled criteria for the study, consent was taken, and insight in psychosis questionnaire (Hindi version), positive and negative syndrome scale for schizophrenia, clinical insight rating scale, Present State Examination insight item, and the global assessment of functioning scale were applied. Appropriate statistical analyses were done. **Results:** The mean age of 53 patients included in the study was 33.42 ± 10.32 years. The majority of the patients were males, single and had <12 years of formal education and resided in joint families and urban areas. The mean duration of illness was 78.64 ± 86.16 months. The insight in psychosis questionnaire was found to have good internal consistency, split-half reliability, test-retest reliability, and convergent validity in the Indian population. Patients residing in the rural background had lower insight than those residing in urban areas, and patients having brief psychotic disorder had lower insight than those having schizophrenia. Insight was positively correlated with negative symptoms, general psychopathology, and total psychopathology but negatively correlated with positive symptoms. Psychopathology was negatively correlated with functioning. **Conclusions:** The study of insight and its correlation with psychopathology and functioning should be an important area for research as insight is associated with outcome and prognosis among patients with psychosis.

Key words: *Functioning, insight, psychopathology, psychosis, questionnaire, schizophrenia*

INTRODUCTION


Insight is a complex multidimensional phenomena which encompasses awareness of change in internal state, awareness of perception of others, recognition

of details of events, and judgment of causal links between events and synthesis of all this information into a coherent representation and action plan.^[1] Studies on correlates of insight in psychosis have

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How to cite this article: Garg R, Cheema SK, Raj R. Psychometric properties of the insight in psychosis questionnaire and its correlation to psychopathology in indian population. Indian J Psychol Med 2018;40:113-20.

Access this article online	
Website: www.ijpm.info	Quick Response Code 
DOI: 10.4103/IJPSYM.IJPSYM_112_17	

Department of Psychiatry, Government Medical College and Rajindra Hospital, Patiala, Punjab, India

Address for correspondence: Dr. Rohit Garg

Department of Psychiatry, Government Medical College and Rajindra Hospital, Patiala, Punjab, India.

E-mail: drrohitgarg@hotmail.com

yielded inconsistent findings. Association of insight with symptomatology, functioning, outcome, prognosis, compliance with treatment, or other clinical and psychosocial variables is unclear.^[2] One major reason for uncertainty is the difficulty to translate complex phenomena like insight into empirical instruments. The different instruments capture different aspects of insight, and it is unclear so far as to which aspects would be most useful clinically and therapeutically.^[3]

There is scant research from India on insight in psychosis.^[3] The few available studies have shown that there is negative correlation between insight and psychopathology;^[4,5] no correlation between insight and psychopathology^[6] or significant positive association between psychopathology and awareness of abnormal experiences but no association between psychopathology and global insight.^[7] Another study concluded that insight operates independent of psychopathology and severity of illness.^[8]

Research from elsewhere has shown equally contrasting findings. Some studies have found no correlation^[9,10] while others found weak-to-moderate correlations^[11,12] between insight and psychopathology. Recent reviews found an inverse relationship between psychopathology and insight.^[1,13] Another review concluded that the studies do not support the idea of a stable relationship between insight and psychopathology.^[14]

The present study was aimed to translate (into Hindi) and standardize a self-rated insight in psychosis questionnaire for the Indian population. The authors also aimed to compare and correlate the insight scale score with other global standardized measures on insight and to correlate insight with psychopathology and functioning of the patient.

MATERIALS AND METHODS

Study design

This study was a cross-sectional study.

Study settings

This study was conducted at the outpatient department (OPD) of psychiatry of a government medical college and hospital in North India.

Study duration

The study duration was July and August 2016.

Sample

The sample comprised of all the consecutive patients diagnosed as schizophrenia and brief psychotic disorders according to Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).^[15]

Inclusion criteria

Patients satisfying the following criteria were included in the study:

- Diagnosis of schizophrenia or brief psychotic disorders as per DSM-5^[15]
- Age between 18 and 65 years
- Able to read and understand Hindi
- Patients should have been accompanied by a reliable informant, preferably staying with the patient for at least past 6 months
- Willing to participate in the study and give written informed consent.

Exclusion criteria

- Patients whose psychotic symptoms were secondary to a primary mood, organic, or substance abuse disorder
- Comorbid neurological disorder
- Patients having any other psychiatric disorder apart from the disorders under study
- Uncooperative patients, refusal to give written informed consent, and patients whose psychopathology interfered in the assessments
- Patients having substance dependence except nicotine and caffeine
- Patients having intellectual disability were excluded from the study.

Tools

Sociodemographic and clinical pro forma

a semi-structured pro forma was prepared for the purpose of the study to record the sociodemographic and clinical parameters such as age, gender, education, occupation, marital status, monthly family income, locality, age at onset of illness, total duration of illness, previous hospitalization, and treatment record.

The insight in psychosis questionnaire

The insight in psychosis questionnaire by Markova et al.^[2] was translated into Hindi. This scale is based on a wide concept of insight as a form of self-knowledge the patient has about the illness and the way this knowledge affects the patient's ability to function and interact with the environment. The scale consists of thirty items, each item rated as 0 or 1 where 1 means present insight and 0 means absent insight except on negatively worded items which are reverse scored. The maximum score can be 30, and higher score denotes higher insight. The scale has been found to have good internal consistency.

Positive and negative syndrome scale for schizophrenia

PANSS was used to measure the severity of psychotic symptoms.^[16] It has thirty items further divided into three subscales namely positive syndrome subscale, negative syndrome subscale, and general psychopathology

subscale. Each item is rated by the clinician from 1 to 7. Higher score on each subscale and the total scale denote higher severity of symptoms. Item 12 in positive and negative syndrome scale for schizophrenia (PANSS) measures insight on a scale of 1–7. The item was separately used to measure convergent validity of the translated version of the insight scale.

Clinical insight

Insight was assessed using standard criteria given in the psychiatry textbooks. It was graded from 1 to 6. A score of 1 means absent insight and a score of 6 means true emotional insight.^[17]

Present State Examination item for insight

This is a clinician-rated evaluation, based on answers to specific questions relating to psychotic symptoms and rated on a 4-point scale from 0 to 3. 0 means full insight; 1 means as much insight as social background and intelligence allows; 2 means delusional explanation of illness; and 3 means no insight. Hence, higher score on this scale means lesser degree of insight.^[18]

Global assessment of functioning scale

It was used to measure the overall impairment in psychological, social, and occupational functioning of the patient due to psychiatric disorder.^[19]

Study protocol

Translation of the questionnaire

Written permission was obtained from the authors of the original questionnaire for the translation and further use of the instrument. Five experienced psychiatrists well versed with both the languages translated the questionnaire independently from English to Hindi. The researchers then reviewed all the five Hindi versions and wherever gross discrepancy was observed between the different translators; the matter was discussed with the translators and sorted out with consensus. The English and Hindi versions made by consensus were then discussed with two experts of English to Hindi translation to find out any discrepancy in the content and meaning of each item. Any discrepancy arising was removed with consensus.

Both the versions were then administered on twenty patients (who could read and write both the languages) in ABAB paradigm and items were scored. Whenever two answers were not in agreement, patients were interviewed to sort out the reasons for different responses when the content of items was same. There was 90%–100% agreement in the responses of items, and the mean agreement was 93%.

We did not attempt back translation of the questionnaire because our major aim was to translate it in terms of its

content and meaning and not language and structure. Some problems were encountered during translation. We tried to translate the questionnaire literally to the best possible level. However, there were some words that were difficult to translate as such because their literal meaning would not be understood by our population. For such words, we chose the Hindi words that were closest to the original version so that the contextual meaning was retained.

After the questionnaire was finalized, all the consecutive patients coming to the OPD were screened for their diagnosis. The patients diagnosed as brief psychotic disorder and schizophrenia were further seen by two qualified psychiatrists and researchers to confirm their diagnosis. Patients finally diagnosed as brief psychotic disorder and schizophrenia as per DSM-5 and fulfilling the inclusion and exclusion criteria were invited to participate in the study. The purpose and design of the study were explained to the participants, written informed consent for the study obtained, and the rating instruments were applied. Approximately 50–60 min were spent on the assessment of each patient.

Ethical considerations

The authors adhered to all the ethical guidelines including the Indian Council of Medical Research ethical guidelines for research on human participants.^[20]

Statistical analysis

The analysis was conducted using IBM SPSS Statistics (Version 22.0. Armonk, NY: IBM Corp). Discrete categorical data were represented in the form of either a number or a percentage (%). Continuous data, assumed to be normally distributed, were written as in the form of its mean and standard deviation; when it was skewed, it was written in the form of its median and interquartile range, as per the requirement. Reliability of the tool was calculated by Cronbach's alpha. The normality of quantitative data was checked by measures of Kolmogorov–Smirnov tests of normality. Insight score data were skewed data; so to compare the medians of >2 groups of sociodemographic and clinical variables, Kruskal–Wallis test was applied. Mann–Whitney test for two groups was applied. Spearman correlation coefficients were calculated to see the relationship of different variables with insight score. All the statistical tests were two sided and were performed at a significance level of $\alpha = 0.05$.

RESULTS

Participants

Sixty-five patients were diagnosed as having the

disorders under study during the study period. Out of them, 12 were excluded from the study (one had organic psychosis, four had substance dependence, and seven had violent behavior which made assessments impossible). Thus, the final study sample consisted of 53 participants. The sociodemographic and clinical parameters of the 12 excluded patients were similar to the 53 patients who were enrolled in the study.

Sociodemographic and clinical data

The mean age of the 53 patients finally included in the study was 33.42 ± 10.323 years (range: 18–56 years) while the mean age at onset of illness was 26.49 ± 5.294 years (range: 18–40 years).

Table 1 shows the sociodemographic and clinical data of the participants and their correlation with insight scale score. The majority of the patients were males, single and had <12 years of formal education. Most came from joint families from urban areas and had low monthly family income. Nearly 60% had been hospitalized in the past and were not taking treatment currently.

Patients residing in the rural background had significantly lower insight than those residing in urban areas. Patients having brief psychotic disorder had significantly lower insight than those having schizophrenia. None of the other sociodemographic factors and clinical factors was correlated significantly with insight.

Out of 22 patients admitted in the past, the numbers of previous hospitalizations were 1, 2, 3, and 4 for 10 (45.5%), 8 (36.4%), 3 (13.6%), and 1 (4.5%), respectively. Out of 33 patients who were not taking treatment at the time of inclusion into the study, 16 (48.5%) patients were treatment naive, 11 (33.3%) did not feel the need to take medications, and 6 (18.2%) patients were not taking treatment for financial reasons. Out of twenty patients who were taking treatment, the number of drugs being taken were 1, 2, and 3 for 8 (40%), 9 (45%), and 3 (15%) patients, respectively. The mean numbers of drugs were 1.75 ± 0.716 .

Seventeen patients had stopped treatment after taking it for some time. Out of these patients, the majority (12, 70.59%) were off treatment for 6–12 months, 4 (23.53%) for <6 months, and 1 (5.88%) for more than 12 months. The mean duration of being off treatment was 8.82 ± 5.259 months (range: 2–24 months).

The total duration of illness of the sample was 78.64 ± 86.155 months (range: 1–360 months). The correlation between duration of illness and insight was not significant (correlation coefficient 0.188 and significance two tailed 0.178).

Internal consistency of the scale

The value of Cronbach's alpha for thirty items of the Hindi translated version of the insight in

Table 1: Sociodemographic and clinical data and correlation with insight scale scores

Variable	Category	n (%)	Insight scale score (mean±SD)	Z	P
Gender	Males	31 (58.5)	20.10±5.92	-1.099	0.272
	Females	22 (41.5)	18.59±6.40		
Years of formal education	Illiterate	7 (13.2)	19.71±7.48		0.504
	<12 years of formal education	35 (66)	18.60±6.50		
	>12 years of formal education	11 (20.8)	22.09±2.63		
Occupation	Homemaker	9 (17)	18.56±6.87		0.802
	Unemployed	19 (35.8)	19.01±5.23		
	Student	10 (18.9)	20.01±2.79		
	Office job	6 (11.3)	18.72±4.73		
	Others	9 (17)	19.56±3.64		
Marital status	Single	35 (66)	20.43±6.42		0.111
	Married	16 (30.2)	17.25±5.31		
	Divorced	2 (3.8)	20.50±2.12		
Monthly family income (INR)	<5000	22 (41.5)	20.77±7.02		0.131
	5000-10,000	15 (28.3)	17.93±5.20		
	>10,000	16 (30.2)	19.13±5.51		
Family type	Nuclear	20 (37.7)	16.95±7.02	-1.927	0.054
	Joint	33 (62.3)	21.00±5.01		
Locality	Rural	24 (45.3)	17.08±6.55	-2.720	0.007**
	Urban	29 (54.7)	21.45±5.02		
Diagnosis	Brief psychotic disorder	14 (26.4)	16.93±6.88	-2.057	0.040*
	Schizophrenia	39 (73.6)	20.38±5.63		
Previous hospitalization	Yes	22 (41.5)	21.18±5.04	-1.584	0.113
	No	31 (58.5)	18.26±6.58		

** – Highly significant. INR – Indian rupees; SD – Standard deviation

psychosis questionnaire was found to be 0.866, thus indicating good internal consistency. None of the items significantly increased the Cronbach's alpha if it was deleted. Thus, none of the items were found to be redundant. Intraclass correlation coefficient was 0.866. Test-retest reliability on 15 patients done on consecutive days was 0.841.

Split-half reliability

The thirty items were divided into two equal halves of 15 items each to test the split-half reliability. The Cronbach's alpha for part I was found to be 0.773, and it was 0.724 for the other half. The correlation between forms was found to be 0.838. Guttman split-half coefficient was 0.910. Spearman-Brown coefficient: equal length 0.912; unequal length 0.912.

Convergent validity

The insight in psychosis questionnaire was found to be negatively correlated with Present State Examination (PSE) item for insight and positively correlated with clinical insight [Table 2]. Thus, the higher the insight on our scale (more insight), the lower the score on PSE item (more insight) and the higher the score on clinical insight scale (more insight). There was an inverse correlation with PANSS item G12 (greater the insight on insight in psychosis questionnaire, greater the level of insight on PANSS item G12) for insight though it did not reach statistical significance.

Relationship between insight and psychopathology

Insight in psychosis questionnaire score was positively correlated with negative syndrome subscale, general psychopathology subscale, and total score on the PANSS but negatively correlated with positive syndrome subscale [Table 3].

Relation between insight and functioning

The insight in psychosis questionnaire was not significantly correlated with the global assessment of functioning (GAF), though the insight score increased with better functioning. However, GAF was significantly positively correlated with clinical insight but significantly negatively correlated with PSE item score and PANSS item 12 for insight score (implying

that greater is the level of functioning of the patients, higher is the insight on all the scales) [Table 3].

Relation between psychopathology and functioning

GAF was negatively correlated with PANSS positive syndrome subscale, general psychopathology subscale, and total PANSS score [Table 3].

Table 4 shows the correlation of insight scale score with the individual items of the PANSS. Out of the seven positive items, delusions, conceptual disorganization, excitement, and grandiosity were significantly negatively correlated with insight. Out of the negative items, blunted affect, emotional withdrawal, passive apathetic social withdrawal, difficulty in abstract thinking, and lack of spontaneity were significantly positively correlated with insight. Out of the 16 items of general psychopathology subscale, somatic concern and anxiety were significantly negatively correlated with insight. Depression, motor retardation, mannerisms and posturing, unusual thought content, disturbed volition, poor impulse control, and active social avoidance were significantly positively correlated with psychopathology.

DISCUSSION

The present study attempted to clarify the relationship between insight, psychopathology, and functioning in patients with psychosis. The authors used standardized instruments that have widely been used in patients with psychosis such as PANSS, GAF, and global measures of insight. The study used Hindi translated version of the "insight in psychosis" questionnaire. This questionnaire measures insight in term of the knowledge that the individual has in terms of changes happening to him/her and the way these changes alter his/her interaction with the environment in contrast to most other instruments which are clinician rated and assess insight as the person's acceptance of having a mental illness and perception of need of treatment. Insight scored on the basis of the patients' report appears to be more closely related to severity of illness than insight judged by the examiner from treatment compliance.^[7] The majority of the previous instruments focus on biomedical model of illness, with good insight corresponding to disease

Table 2: Convergent validity (correlations between different insight scales)

Scale score, mean±SD (range)		PSE insight item score	Clinical insight	PANSS item 12 for insight, 4.28±1.433 (1-6)
Insight in psychosis questionnaire score, 19.47±6.113 (5-26)	Correlation coefficient	-0.415**	0.274*	-0.136
	Significant (two tailed)	0.002	0.047	0.332
PSE insight item score, 1.98±0.866 (0-5)	Correlation coefficient		-0.835**	0.655**
	Significant (two tailed)		0.000	0.000
Clinical insight, 2.53±1.187 (1-5)	Correlation coefficient			-0.701**
	Significant (two tailed)			0.000

** – Highly significant. SD – Standard deviation; PSE – Present State Examination; PANSS – Positive and negative syndrome scale

Table 3: Correlation of insight with psychopathology and global functioning

Scale score, mean±SD (range)		Global assessment of functioning score, 40.58±14.934 (15-75)	PANSS positive score, 18.32±4.594 (9-28)	PANSS negative score, 16.62±5.182 (7-28)	PANSS general psychopathology score, 36.08±6.819 (24-51)	Total PANSS score, 71.02±11.702 (46-100)
Insight in psychosis questionnaire score	Correlation coefficient	0.186	-0.310*	0.699**	0.516**	0.491**
	Significant (two tailed)	0.184	0.024	0.000	0.000	0.000
Global assessment of functioning score	Correlation coefficient		-0.603**	0.095	-0.349*	-0.430**
	Significant (two tailed)		0.000	0.498	0.010	0.001
PANSS positive score, 18.32±4.594 (9-28)	Correlation coefficient			-0.314*	0.155	0.304*
	Significant (two tailed)			0.022	0.267	0.027
PANSS negative score, 16.62±5.182 (7-28)	Correlation coefficient				0.573**	0.683**
	Significant (two tailed)				0.000	0.000
PANSS general psychopathology score, 36.08±6.819 (24-51)	Correlation coefficient					0.924**
	Significant (two tailed)					0.000

* – Significant. PANSS – Positive and negative syndrome scale; SD – Standard deviation

Table 4: Correlation of insight scale score with individual items of positive and negative syndrome scale for schizophrenia

Item of PANSS	Correlation coefficient	Significant (two tailed)
Delusions	-0.387*	0.004**
Conceptual disorganization	-0.167*	0.023*
Hallucinations	0.05	0.721
Excitement	-0.524**	0.007**
Grandiosity	-0.582**	0.002**
Suspiciousness and persecution	-0.225	0.106
Hostility	0.213	0.126
Blunted affect	0.674**	0.008**
Emotional withdrawal	0.717**	0.003**
Poor rapport	0.061	0.662
Passive apathetic social withdrawal	0.689**	0.006**
Difficulty in abstract thinking	0.424**	0.002**
Lack of spontaneity and flow of conversation	0.558**	0.001**
Stereotype	0.228	0.101
Somatic concern	-0.283*	0.04*
Anxiety	-0.282*	0.041*
Guilt	0.144	0.302
Tension	0.360**	0.008**
Mannerisms and posturing	0.404**	0.003**
Depression	0.392**	0.004**
Motor retardation	0.607**	0.008**
Uncooperativeness	0.184	0.187
Unusual thought content	0.413**	0.002**
Disorientation	0.143	0.308
Poor attention	0.236	0.089
Lack of insight	-0.136	0.332
Disturbed volition	0.723**	0.001**
Poor impulse control	0.369**	0.007**
Preoccupation	-0.09	0.52
Active social avoidance	0.510**	0.006**

** – Highly significant. PANSS – Positive and negative syndrome scale

attributions and acceptance of treatment.^[13] However, it is unclear whether these aspects are a part of insight or simply attitudes of the patients which are shaped by insight.^[2]

The scale has good reliability, test-retest reliability, and convergent validity. The Cronbach's alpha in our study (0.866) is similar to the value found in the original scale by Markova *et al.* (0.875), and the one reported in the Spanish (0.824)^[21] and Portuguese (0.800)^[22] versions. Thus, the questionnaire is useful in measuring insight in a wide variety of patients with psychosis coming from different cultures and background. It has been reported earlier also that many instruments used to measure insight have clinical utility for diverse populations and patient groups worldwide, with little modification beside translation.^[5] Adequate convergent validity implies that all these scales evaluate and measure phenomena that were common to insight.

Insight was not significantly affected by age, gender, education, occupation, marital status, type of family, income, and clinical variables such as previous hospitalization and duration of illness. Previous Indian studies have also failed to find significant correlation of insight with age, gender, education, family type, and duration of illness.^[5,6,8] The authors of the original English version also found that insight was not related to the duration of illness.^[2]

In our study, patients residing in rural areas had lower insight than those residing in urban areas in contrast to another study which found no significant difference.^[5] A previous research has found that patients who hold beliefs regarding black magic, attributed illness to evil spirits, previous deeds, and punishment by God have lower insight than persons who do not hold these beliefs.^[5] Although we did not assess these beliefs in our study, it is fair to assume that they are more common among rural people thus leading to a lower level of insight.

The present study found lower insight among patients with brief psychotic disorder than among persons with

schizophrenia. A previous study has also reported that poor insight is a trait of acute rather than chronic psychosis.^[23] However, the sample size was very small in the brief psychotic group to draw any conclusions from the present study on this issue.

In the present study, higher severity of positive symptoms lowered the degree of insight whereas higher severity of negative symptoms, general psychopathology, and total score increased insight was negatively correlated with positive symptoms of schizophrenia but negatively correlated with negative symptoms, general psychopathology and total psychopathology. The previous research is equivocal on the relationship of insight to psychopathology. Previous studies have shown weak but consistent inverse correlation,^[5,24] no correlation,^[8-10] or weak-to-moderate correlations^[11,12] between insight and positive symptoms. Similarly, few studies found that poor insight is related to maintenance of negative symptoms^[24-26] while other studies did not find an association.^[27,28] Another study even found a positive correlation between negative symptoms and cognitive insight.^[29] Regarding total psychopathology, no correlation was found with insight in the studies using the original English and Spanish versions of this scale.^[2,21] Other studies have found that insight is inversely associated with psychopathology^[4,5,24,26] or not correlated with severity of psychopathology.^[7,9,10,30] It is clear that the relationship between insight and psychopathology is a complex one. It is difficult to ascertain the reason for better insight among patients with higher severity of symptoms in the present study. One reason could be that the scale used in the study is different from most of the tools used in the past studies. It is a self-rating instrument whereas most previous scales are rated by the examiner depending on the interview with the patient. Most previous scales do not take into account the perspective of the patients with regard to the changes in their interaction with the environment. Second, insight is a very complex issue which is likely to be affected by multiple factors some of which might have been missed in the present study. The authors reckon that a study with a larger sample comparing different scales would be more appropriate to make a conclusion on this issue.

There are not many studies that have correlated insight with individual symptoms of schizophrenia. One consistent finding is the positive association between insight and depression.^[5,26] The present study also found a similar association. Higher depressive symptoms among patients with more insight may reflect a growing insight into a mental illness and its consequences.^[26]

Insight was not significantly correlated with functioning, a finding similar to some previous studies.^[2,5,31]

However, some other studies have found that poor insight leads to poorer functioning.^[32,33] Higher insight was correlated with better functioning on the other scales used in the present study. Poor insight is likely to lead to poor functioning since an individual who does not have understanding of his/her deficits is unlikely to try and remove them.^[1]

Although the study was conducted using sound methodology and stringent inclusion and exclusion criteria, there were a few limitations such as small sample size and cross-sectional design of the study. Many of the parameters which might have affected insight among patients with psychosis might have been missed.

CONCLUSIONS

The Hindi translated version of the insight in psychosis questionnaire has good reliability, internal consistency, test-retest reliability, and convergent validity in the Indian population. Insight is positively correlated with negative syndrome subscale, general psychopathology subscale, and total score on the PANSS but negatively correlated with positive syndrome subscale. Insight in psychosis questionnaire is not significantly correlated with global functioning, though the insight score increased with better functioning. The focus of research should be on the potential contributing factors toward insight into the illness. Factors that create and maintain poor insight and potential therapies to improve insight should be actively researched since an improvement in insight might improve the outcome and prognosis.

Acknowledgments

The authors would like to thank Dr. Bir Singh Chavan, Professor and Head, Department of Psychiatry, Government Medical College and Hospital, Chandigarh, India and Dr. Priti Arun, Professor, Department of Psychiatry, Government Medical College and Hospital, Chandigarh, India.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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