Original Research Paper

Cognitive Insight in Patients with Schizophrenia:
An Exploratory Study

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ABSTRACT

Objective- The aim of the present study is to study the cognitive insight between male and female patients with schizophrenia. Schizophrenia is a chronic, severe psychiatric disorder characterized by "positive" symptoms such hallucinations, delusions, and thought disorders, and by "negative" symptoms, such as alogia, anhedonia, avolition, and flattening of affect (American Psychiatric Association, 1994; Andreasen & Carpenter, 1993). According to Beck et al. (2004), an important extension of the insight concept was introduced with the description of "cognitive insight," which was defined as a patient's current capacity to evaluate his or her anomalous experiences and atypical interpretations of events. *Methodology-*The sample size is 60 in total, where 30 male patient and 30 female patients between 18 to 59 years of age with diagnosis of schizophrenia as per ICD-10 criteria and the study was conducted at the inpatients and Outpatient Department of PGIBAMS, Raipur (Chhattisgarh), has been taken for the study through purposive sampling. The tools used for assessing the variables are Socio-Demographic and Clinical Data Sheet, The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia (Kay et al, 1987), Beck Cognitive Insight Scale. (BCIS) (Beck et al., 2004). *Result and conclusion:* There is no significant difference between male and female groups of cognitive insight profile.

Keywords: Schizophrenia and Cognitive Insight

Schizophrenia is a chronic, severe psychiatric disorder characterized by "positive" symptoms such hallucinations, delusions, and thought disorders, and by "negative" symptoms, such as alogia, anhedonia, avolition, and flattening of affect (American Psychiatric Association, 1994; Andreasen & Carpenter, 1993).

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Cognitive insight has an important role to play in the rehabilitation of schizophrenic patients. The lack of awareness into illness among patients with psychoses influences their social and personal functioning. Yoshizumi et al. (2008) found that awareness among patients with schizophrenia of their social behavioral problems is affected by their cognitive capacity.

Traditionally, significant cognitive impairment was thought to be evident only in elderly deteriorated patients with schizophrenia. However, over the past 25 years, evidence has accrued to challenge this view. It is becoming evident that marked cognitive impairment is, in fact, the norm and often pre-dates the illness. The recent literature has attempted to characterize the prevalence, degree and nature of neuropsychological abnormality in schizophrenia. In this brief review, I will attempt to summarize the current state of knowledge with regard to cognitive impairment in schizophrenia.

REVIEWS OF LITERATURE

The concept of cognitive insight has been introduced by Beck in 2004 (Beck et al., 2004) to describe the capacity of patients with psychosis to distance themselves from their psychotic experiences, reflect on them, and respond to corrective feedback. Cognitive insight has predicted positive gains in psychotherapy of psychosis, and improvement in cognitive insight has been associated with improvement in delusional beliefs (Riggs et al., 2010). Both schizophrenia and bipolar disorder are associated with disturbances in emotion processing (Murphy & Cutting 1990). Most of the previous studies conducted have not focused on emotional intelligence alone, rather the focus was on social cognition as a whole, facial affect recognition and emotion perception. In fact deficits in emotion perception have been extensively documented in schizophrenia and are associated with poor psychosocial functioning.

The lack of insight or awareness of illness in schizophrenia is one of the most frequently observed symptoms of schizophrenia and may negatively influence treatment compliance (McEvoy et al 1989) and treatment response (Heinricks et al.1985). It influences the degree of supervision required and the decision as to whether a patient can safely be discharged from in patient settings.

In the World Health Organization's extensive study (IPSS, 1973) of schizophrenia, 85% of the subjects vigorously denied that they were ill. So important was this dimension that a lack of insight was found by Carpenter et al (1973) to be a variable that would discriminate in favors of a diagnosis of schizophrenia. Other researchers have reported substantial rates of lack of awareness. In a study of 100 schizophrenics who were readmitted at least twice to hospital, Lin et al (1979) found 69% to have no insight. In a study of medication compliance, Van Putten et al (1976) found that 76% of "drug refuses" 18 versus 40% of "drug compliers" had no insight into the presence of illness.

In contrast to these reports, some researchers have found schizophrenics to be somewhat more aware of their illness. Soskis and Bowers' Work (1969) as well as that of Gross (1989)

that a substantial portion of patients were aware of their abnormal mental symptoms. The extent to which the subjects in this study attributed their distress to an illness is not clear however.

Social cognitive deficits mediate the well established link between basic (non-social) cognition and psychosocial functioning in schizophrenia (Addington et al., 2006; Brekke et al., 2005; Sergi et al., 2006; Vauth et al., 2004)

Aim: To study the level of cognitive insight in patients with schizophrenia.

METHODOLOGY

Sample

The sample size is 60 in total, where 30 male patient and 30 female patients between 18 to 59 years of age with diagnosis of schizophrenia as per ICD-10 criteria and the study was conducted at the inpatients and Outpatient Department of PGIBAMS, Raipur (Chhattisgarh), has been taken for the study through purposive sampling.

Inclusion and Exclusion Criterion

Inclusion Criteria

1. Patients diagnosed with schizophrenia as per ICD-10 DCR criteria.
2. Both male & female patients.
3. Age range between 18 to 59 years
4. PANSS Score < 3 (on items P_1, P_2, P_3, N_1, N_4, N_6, G_5 and G_9).
5. All those who were able to understand Hindi or English.
6. Those who gave written informed consent for the participation in study

Exclusion Criteria

1. History of any chronic physical illness and organic brain syndromes.
2. History suggestive of Mental Retardation.
3. History suggestive of substance use disorder

Tools were used

1. Socio-Demographic and Clinical Data Sheet.
2. The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia (Kay et al, 1987).
3. Beck Cognitive Insight Scale. (BCIS) (Beck et al., 2004)

Description of the tools used

1. **Socio-demographic data sheet:** A socio-demographic and a clinical data sheet were specifically designed for the present study. It contains information about socio-demographic variables like age, sex, religion, education, marital status, domicile and occupation and clinical details like diagnosis, age of onset, total duration of illness, history of alcohol or substance abuse, family history of mental illness, any history of

significant head injury, seizures, mental retardation and any other significant physical, organic or psychiatric illness.

2. **Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987):** The Positive and Negative Symptom Scale (PANSS) is a scale used for measuring symptom severity of patients with schizophrenia. It was published in 1987 by Stanley Kay, Lewis Opler, and Abraham Fiszbein. It is widely used in the study for the quantification of positive and negative symptoms of schizophrenia and is also in frequent use to assess the efficacy of therapeutic measures used for the treatment of schizophrenic disorder. The name refers to the two types of symptoms in schizophrenia, as defined by the American Psychiatric Association: positive symptoms, which refer to an excess or distortion of normal functions (e.g. Hallucinations and delusions), and negative symptoms, which represent a dimunition or loss of normal functions. It is a 30-item rating instrument evaluating the presence/absence and severity of positive, negative and general psychopathology of schizophrenic disorder. All 30 items are rated on a 7-point scale. Alpha coefficient analysis indicated high internal reliability and homogeneity among items with coefficient ranging from .73 to .83 for each of the scale. The first seven items are grouped to form a Positive Scale which measures symptoms that are superadded to a normal mental status, and another seven items constitute a Negative Scale assessing features absent from a normal mental status. The last sixteen items forms the general psychopathology scale, gauges the overall severity of schizophrenic disorder. Each of the items is rated on a seven rating points. These seven points represent increasing levels of psychopathology, as follows – Absent, Minimal, Mild, Moderate, Moderate severe, Severe, Extreme.

3. **Beck cognitive insight scale (Beck et.al 2004):** The BCIS is based on 2 subscales, self- reflectiveness measuring objectivity and reflectiveness and openness to feedback and self-certainty measuring mental flexibility. Respondents are asked to rate how much they agree with each statement by using a 4-point scale that ranges from 0 (do not agree at all) to 3 (agree completely). No time frame for the ratings is provided. Beck cognitive insight scale developed by Beck et.al (2004). High scores on the subscale self-reflectiveness and low scores on subscale self-certainty is considered as normal. Overall a cognitive insight is assessed by a composite index defined as the difference between the scores of self-reflectiveness and self-certainty. The 2 subscale scores were weakly inter correlated, indicating that they represent 2 different dimensions of cognitive insight. The internal consistency reliability is found to be 0.70 and convergent validity is found to be 0.67.

Procedure

Individuals fulfilling the inclusion and exclusion criteria were taken up for the study. Written inform consent were taken from both the groups (male and female patients with schizophrenia). Subsequently socio-demographic data collected from the male and female patients with schizophrenia. After that PANSS administered to assess the severity of PANSS

as per inclusion and exclusion criteria. After that Beck cognitive insight scale was administered to both the groups.

Statistical Analysis

To analyze the data Frequency and percentage was used to describe the characteristics of the sample. Pearson Chi squire and t-test were calculated to assess the group differences on demographic characteristic between male and female patients of schizophrenia. Parametric statistic t-test was used to assess the differences between groups on emotional intelligence respectively. Data obtained were analyzed using the Statistical Package for the Social Sciences, (SPSS) version 20.

RESULTS

Table 1: Comparison of the Age of the Schizophrenia patients in male and female patients

Variable	Groups	N	Mean± SD	t- ratio
Age (in years)	Male	30	29.500 ± 10.285	0.122
	Female	30	29.200 ± 8.688	

Table No. 1 with regards to their age, did not show any significant difference between male and female schizophrenic patients.

Table 2: Showing the comparison of socio demographic details of schizophrenic male & female group of patients

Variables		Groups				Chi-Square
		Male (N=30)		Female (N=30)		
		Frequency	Percentage	Frequency	Percentage	
Education	Illiterate	0	0.0%	4	13.3%	5.233
	Primary	2	6.7%	2	6.7%	
	Secondary	22	73.3%	16	53.3%	
	Higher	6	20.0%	8	26.7%	
Marital status	Married	21	70.0%	18	60.0%	.659
	Unmarried	9	30.0%	12	40.0%	
Occupation	Employed	8	26.7%	4	13.3%	3.590
	Unemployed	16	53.3%	23	76.7%	
	Students	6	20.0%	3	10.0%	
Religion	Hindu	29	96.7%	28	93.3%	.351
	Other	1	3.3%	2	6.7%	
Domicile	Rural	25	83.3%	20	66.7%	
	Urban	5	16.7%	10	33.3%	2.222
Types of family	Nuclear	9	30.0	15	50.0%	2.500
	Joint	21	70.0	15	50.0%	

Table 2 Shows the socio demographic details of Schizophrenic male and female groups of patients. Variables such as sex, education, marital status, occupation, religion, domicile, and types of family are shown. There is no significant difference between schizophrenic male and female groups of the patients of the above mentioned variables.

Table 3: Comparison of the monthly family income, male and female in Schizophrenia patients group

Variable	Groups	N	Percent	Chi- Square
1000-10000	Male	12	40%	
	Female	16	53.3%	
11000-20000	Male	7	23.3%	1.122
	Female	6	20.0%	
20000 & Above	Male	11	36.7%	
	Female	8	26.7%	

Table 3 shows there is no significant difference between schizophrenic male and female the group of patients of monthly income of the family.

Table 4: Comparison of the Age of onset, male and female in Schizophrenia patients group

Variable	Groups	N	Mean± SD	t- ratio
Age of onset (in years)	Male	30	23.533±6.826	0.466
	Female	30	24.533±9.558	

Table No. 2 with regards to their age of onset, did not show any significant difference between the schizophrenic male and female group of patients.

Table 3: Showing the clinical details of Schizophrenic patients, male and female group of patients

Variable		Groups				Chi- Square
		Male (N=30))		Female (N=30)		
		Frequency	Percentage	Frequency	Percentage	
Mode of onset	Acute	2	6.7%	3	10.0%	.218
	Insidious	28	93.3%	27	90.0%	
Course of illness	Continuous	24	80.0%	28	93.3%	2.308
	Episodic	6	20.0%	2	6.7%	
Progress of illness	Deteriorating	13	43.3%	13	43.3%	1.303
	Improving	17	56.7%	16	53.3%	
	Fluctuating	0	0.0%	1	3.3%	
Nature of treatment	Drug naïve	6	20.0%	4	13.3%	.480
	On drug	24	80.0%	26	86.7%	
Relapse	Present	8	26.7%	6	20.0%	.373
	Absent	22	73.3%	24	80.0%	
Duration of treatment	0-1 year	14	46.7%	14	46.7%	.533
	1-2 year	5	16.7%	7	23.3%	
	2 year more	11	36.7%	9	30.0%	
Family history	Present	3	10.0%	6	20.0%	1.176
	Absent	27	90.0%	24	80.0%	

*$p<0.05$, **$p<0.01$, NS = Not significant*

The above table 3 shows the clinical profile of Schizophrenic male and female group of patients. There is no significant difference between mode of onset and course of illness, progress of illness, nature of treatment, and relapse did not show any significant difference.

Table 4: Comparison of the PANSS of the Schizophrenia patients in male and female patients

Variable	Groups	N	Mean	SD	t- ratio
Positive	Male	30	13.266	5.419	1.031
	Female	30	11.866	5.097	
Negative	Male	30	8.800	1.769	
	Female	30	9.233	2.872	.703
General	Male	30	27.733	7.315	.206
	Female	30	27.300	8.913	

*p<0.05, **p<0.01, NS = Not significant

The above table 4 shows the PANSS profile of Schizophrenic patient's male and female group of patients. There is no significant difference between positive and negative symptom and general psychopathology did not show any significant difference.

Table 5 : Comparison of the CIS of the Schizophrenia patients in male and female patients

Variable	Groups	N	Mean	SD	t- ratio
CISSR	Male	30	13.800	4.334	.612
	Female	30	13.100	4.520	
CISSC	Male	30	11.166	3.018	.051
	Female	30	9.833	4.705	

Table 5 shows the Cognitive insight profile of Schizophrenic male and female group of patients. There is no significant difference between male and female groups,

DISCUSSION

The present study is titled "To Study cognitive insight between male and female patients with schizophrenia." was a cross sectional study, conducted at Post Graduate Institute of Behavioral and Medical Sciences Raipur Chhattisgarh. In the present study, participants comprised of 60 samples which consisted of 30 male and 30 female patients with schizophrenia. In our study patients were selected who were diagnosed as schizophrenia as per ICD-10-DCR (W.H.O., 1992) with the age range between 18 to 59 years.

A specially prepared socio-demographic data sheet was used for collecting socio-demographic details of the patients. Positive And Negative Symptom Scale (PANSS) was used to screen out the positive and negative symptoms of the participants. Patients scored </= 3 on the 8 items (P1, P2, P3, N1, N4, N6, G5, G9) on the PANSS were included in the schizophrenia group.

Cognitive insight measured using Beck Cognitive Insight Scale. The BCIS is a 15-item self-report measure (the full scale appears in the Appendix) composed of 2 subscales: 9 Self-Reflectiveness items that assess objectivity, reflection, and openness to feedback and 6 Self-Certainty items that tap certainty about being right and resistance to correction. Beck et al. (2004) have done principle components analysis confirming the validity of a 2-factor solution, with each factor also being internally consistent. They have derived a composite

cognitive insight index score (Composite Index) by subtracting the Self-Certainty score from the Self-Reflectiveness score. Self-Certainty is a process that is akin to a prejudice in favor of the products of one's own mind. It might be produced by a combination of emotional processes and processes that minimize the deployment of effort; as such, it is expected to correlate with measures of emotion processing (Kohler et al., 2003).

DISCUSSION AND CONCLUSION

In the present study *"To Study the cognitive insight between male and female patients with schizophrenia"*. The mean age of the schizophrenia male patients was 29.500 ± 10.285 and female patients was 29.200 ± 8.688, t=0.122. It was not found significant difference on different age group between both the study groups.

In table 2 showed the comparison of socio demographic details between both the study groups i.e., education, marital status, occupation, religion, domicile and type of family. In this study both the groups who have been taken for the study, among the male Schizophrenic groups none of them were Illiterate (0.0%), up to primary educated were 6.7%, up to secondary educated were 73.3% and higher educated patients were 20.0%. respectively among the female Schizophrenic, 13.3% were illiterate, 6.7% were educated up to primary level, 53.3% were educated up to secondary and 26.7% were higher educated, and chi square is 5.233 respectively, which is not found significantly different. In terms of marital status most of the male (70.0%) were married and only 30.0% male were unmarried. Respectively in female group also most of them were married (60.0%) and only 40.0% were unmarried. The chi square is 0.659, which is not found significantly different. While taking account of occupational status in male Schizophrenics most of the patients were unemployed (53.3%), whereas 26.7% were employed and only 20.0% were student. Respectively in female group also most of the patients were unemployed (76.7%), 13.3% were employed and 10.0% were students. The chi square is 3.590, which is not significant different between both the study groups. In terms of religion most of the male were Hindu (96.7%) and only 3.3% were other than Hindu, while among the female majority of patients were Hindu (93.3%) and only 6.7% were other than Hindu. The chi square is 0.351, there is no significant difference found between both the groups. In the present study, while taking account of domicile variable of male Schizophrenics, most of the patients belong to rural area (83.3%) and only 16.7% were from Urban area. Respectively among the female group also most of the patients belong to Rural area (66.7) and only 33.3% were from Urban area. The chi square is 2.222, which is not found significantly different. In terms of Types of family among the male Schizophrenics, only 30.0% were from Nuclear family and 70.0% were from Joint family while among the female, 50% were from Nuclear family and 50% patients were Joint family. The chi square is 2.50, which is not significantly different.

While total family income of the male schizophrenics and female schizophrenics were taken into account, it has been found that 40% male patients and 53.3% were having Rs. 1000-10000 family income per month, 23.3% male patients and 53.3% were having Rs. 11000-20000 family income per month, and 36.7% male patients and 26.7% were having Rs. 1000-

10000 family income per month. In the present study the majority of the patients having lower socio-economic status. Although it has not found statistically significant. For many years, epidemiological studies revealed a higher incidence and prevalence of schizophrenia in groups with lower income (lower SES) (Mishles & Scotch 1963). Similarly a study carried out by Emre Bora et al., in 2007 on schizophrenics and found no significant group difference for the demographic variables.

With these findings came the hypothesis that lower social class could be considered a plausible risk factor for schizophrenia, possibly because of a higher risk of obstetrical complications, poorer nutrition, increased exposure to environmental toxins or infectious disease, or exposure to greater life stressors.

The clinical data (table 3) shows, age of onset of the male and female schizophrenics patients. Mean and S.D. of male Schizophrenics were 23.533 and 6.826 respectively and Mean and SD of female were 24.533 and 9.558 and t-ratio was 0.466 respectively. No significance difference was seen for age of onset in the study. Jablensky. A, (1995) studied on Schizophrenic groups and found that Mean age of onset for Schizophrenia falls within the range of 20 to 24 years.

In present study Mode of onset in Schizophrenia male for acute 6.7% & female 10.0 and insidious male 93.3%, and female 90.0% and t-ratio .218 respectively. No significance difference was seen for mode of onset in the study. In course of illness Schizophrenia patients in male continuous, 80.0% and female 93.3% and episodic male 20.0% and female 6.7% and t-ratio 2.308. No significant difference was seen for course of illness. In present study Progress of Illness in Schizophrenia male for deteriorating 43.3%, female 43.3% and improving male 56.7%, female 53.3%, in fluctuating male 0.0% and female 3.3% and t-ratio 1.303 respectively. No significance difference was seen for progress of illness in the study. The reason may be that mostly patient were on treatment but unfortunately many patient had poor drug compliance so when they stop taking medicine the symptoms reappear.

In Schizophrenia male and female group of patients on nature of treatment male in drug nave 20.0% and female 13.3%, and on drug male 80% and female 86.7% and t-ratio .480 respectively. No significance difference was seen for nature of treatment in the study.

In relapse due to poor drug compliance of illness in schizophrenia male and female group comparison, male present 26.7% and absent 73.3%, in female 20% and 80 % %, and t-ratio .373 respectively. No significance difference was seen for relapse due to poor drug compliance of illness in the study.

In present study duration of treatment in Schizophrenia male 0-1 year 46.7% female 46.7%, 1-2 years male 16.7% female 23.3% and 2 year more male 36.7% female 30.03%, and t-ratio .533 respectively. No significance difference was seen for duration of treatment in the study.

In present study family history of psychiatric illness in schizophrenia male and female for present male 10.0% female 20.0%, and absent male 90% female 80%, and t-ratio 1.176 respectively. %. No significance difference was seen for family history of psychiatric illness in the study. In earlier studies it was found that rates of schizophrenia among first degree family members of persons with schizophrenia are higher (Tasman, 2003). The reason for absence of family history of any significant psychiatric illness might be due to lack of information from their relatives and sometimes it has been left unnoticed by their family members.

PANSS Discussion

Positive and Negative Syndrome Scale was used for both the group (table 4) to see the severity of positive, negative and general psychopathology symptom in Schizophrenia group of patients. PANSS shows the Mean and SD of Positive symptom were male (13.266 ± 5.419), and female patients was (11.866 ± 5.097), t test (1.031) and negative symptoms was male (8.800 ± 1.769) and female patients was (9.233 ± 2.872), t test (0.703), and general psychopathology was male (27.733 ± 7.513) and female patients was (27.300 ± 8.913), t test (0.206), respectively for schizophrenia patient. No significant difference is seen for PANSS.

Discussion of Cognitive Insight

The concept of cognitive insight has been introduced by Beck in 2004 (Beck et al., 2004) to describe the capacity of patients with psychosis to distance themselves from their psychotic experiences, reflect on them, and respond to corrective feedback. Cognitive insight has predicted positive gains in psychotherapy of psychosis, and improvement in cognitive insight has been associated with improvement in delusional beliefs (Riggs et al., 2010). To assess the Cognitive insight on both the study groups Beck's Cognitive Insight Scale was used. Comparison in cognitive insight was made between self reflectiveness, self certainty and composite index, between the schizophrenia male female group. The mean and standard deviation of the schizophrenia patients was male (13.800 ± 4.334) and female patients was (13.100 ± 4.520) on self reflection. There was no significant difference (t= 0.612) on self reflection between both the study groups. Similarly no gender difference on self refelectiveness was seen on patients of Schizophrenia (Aaron T. Beck et.al. 2003). No significant difference was found between the schizophrenia male and female patients on self certainty male (11.166 ± 3.018) and female (9.833 ± 4.705) on self certainty. Similar findings has been seen by Bora et al. in 2007.

In our study most of the patients were selected from inpatients department who were receiving treatment from the last 1 year at least. This might be the major reason that the insight of patients has been improved on both the study groups. Thus the hypothesis stating that there will be no significant difference in cognitive insight between male and female patients with schizophrenia is accepted.

Michalkeas et al. (1994) has found the similar findings that Schizophrenia group improved in insight during hospitalization. But they also found the relationship between improved

psychopathology and improved insight was inconsistent. Another study conducted by Smith et al 1998, which showed that for inpatient population the psychopathology and insight both improved significantly in schizophrenic patients.

Limitations

The present study had the following limitations:

1. Small sample size restricts generalization of results.
2. Purposive sampling was used in the present study. Random sampling would have led to greater   generalizability.
3. The underlying effect of typical/atypical drug was not ruled out.

Future Directions

1. In future, a similar type of study can be conducted on a larger sample
2. Randomized sampling may be used in future studies to increase generalizability
3. In future stratification can be done to ensure appropriate representation of people of both sexes.
4. The schizophrenia group may be split into positive and negative types and a comparison could be made between the two.

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