



## COMPARATIVE STUDY OF SOCIAL COGNITION DEFICITS IN PATIENTS WITH SCHIZOPHRENIA: A CROSS-SECTIONAL OBSERVATION

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### ABSTRACT

**Aim** – To compare social cognition in schizophrenia patients.

**Material and methods** – We did a cross-sectional observation in patients diagnosed with schizophrenia in our hospital. Participants were divided into three groups namely first episode schizophrenia, schizophrenia in remission and treatment resistant schizophrenia. After informed consent socio demographic information and clinical characteristics were collected. Social cognition was assessed using SOCRATIS.

**Results**- The mean age of participants in all groups was close to 30 years and majority of the participants were currently single, unemployed, from rural locality, lower or middle class, Hindu by religion and very few participants being the head of the family. Deficits in social cognition were found in all stages of illness. Though, during comparison the severity of deficits was higher in acute or symptomatic phase as seen in remission. These deficits lead to deterioration in socio-occupational functioning.

**Conclusion** – It is evident that these deficits are seen in all stages of illness which are more severe in acute phase and timely intervention may lead to better functioning of patient.

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### INTRODUCTION

Social cognition is defined by various authors<sup>1,2,3</sup>. Simply explained social cognition deals with the skills needed in social intercourse and also include aptitude to perceive emotions of others and understand others thinking, along with capability to understand the details that govern social intercourse<sup>1,2,3</sup>.

The different domains of SC are theory of mind (ToM), attributional styles (AS) and social perception (SP). ToM is skill to deduce purposes, temperaments and opinions of others<sup>4</sup>. SP involves awareness of various cues in social settings. It is understood as cognitive skills which encompasses understanding emotions, awareness of body language and social cues, these all lead to precise perception of intentions and expressions of others<sup>5,6</sup>. In AS we assess the skill to explain the motive behind the social actions of oneself or others with respect to an event<sup>7</sup>. As this is seen in schizophrenia that patients have deficits in both social and neuro cognition but the latter has received emphasis in research<sup>8</sup>. Current study aims to assess social cognition in patients of schizophrenia at different stages of illness.

Study was conducted in PGIMER Chandigarh during Jan 2019 to Jan 2020 after approval from institute ethics committee. After proper informed consent participants meeting criteria for schizophrenia as per DSM-5 were recruited and divided into three further groups namely first episode schizophrenia, schizophrenia in remission, treatment resistant schizophrenia and 21, 35 and 35 participants were recruited in above groups respectively. After collecting socio demographic and clinical details all participants were assessed using SOCRATIS battery for social cognition.

#### Statistical Analysis

We analysed the data using SPSS software and appropriate statistics were applied while analysing.

### RESULTS

Socio demographic details of participants is shown in Table 1. The mean age of participants of all the 4 study groups was close to 30 years and the mean duration of education varied from 11.76 years to 13.02 years. In all the schizophrenia groups, majority of the participants were currently single, unemployed, from rural locality, lower or middle class, Hindu by religion and very few participants being the head of the family. In terms of type of family, majority of participants with antipsychotic naïve schizophrenia belonged to non-nuclear families, whereas in other two groups there was nearly equal

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distribution of participants from nuclear and non-nuclear families.

poorly on the subtest of first order theory of mind and faux pas composite index and non-social perception index.

**Table 1** Socio demographic profile of participants

Variables	Schizophrenia in remission non-TRS	Treatment Resistant Schizophrenia	First episode Antipsychotic naïve Schizophrenia	ANOVA-Chi /test (p value)square test
	Group I N=35 Mean (SD)/ Frequency (%)	Group II N=35 Mean (SD)/ Frequency (%)	Group III N=21 Mean (SD)/ Frequency (%)	
Age in years	31.17 (7.73)	29.85 (7.01)	30.33 (6.47)	F= 0.29 (0.74)
<b>Gender</b>				<sup>2</sup> = 0.61 (0.73)
Male	19 (54.3%)	22 (62.9%)	13 (61.9%)	
Female	16(45.7%)	13 (37.1%)	8 (38.1%)	
<b>Marital status</b>				<sup>2</sup> = 4.28 (0.12)
Married	13 (37.1%)	6 (17.1%)	8 (38.1%)	
Unmarried/Divorced/Widowed	22 (62.9%)	29 (82.9%)	13 (61.9%)	
<b>Education in years</b>	12.48 (3.88)	13.02 (3.41)	11.76 (3.97)	F= 0.76 (0.47)
<b>Occupation</b>				<sup>2</sup> = 1.23 (0.54)
Employed	4 (11.4%)	2 (5.7%)	3 (14.3%)	
Unemployed	31 (88.6%)	33 (94.3%)	18 (85.7%)	
<b>Family type</b>				<sup>2</sup> = 6.84 (0.03) *
Nuclear	19 (54.3%)	16 (45.7%)	4 (19.0%)	
Non-nuclear	16 (45.7%)	19 (54.3%)	17 (81.0%)	

**Table-2** Comparison of social cognition performance among participants

Variables	Schizophrenia in remission non-TRS	Treatment Resistant Schizophrenia	First episode Antipsychotic naïve Schizophrenia	ANOVA /test (p-value)	ANOVA -Chi Post hoc	Effect size (Partial Eta value)	Group I vs II	Group II vs III	Group I vs III
	Group I N=35 Mean (SD) [CI]/ Frequency (%)	Group II N=35 Mean (SD) [CI]/ Frequency (%)	Group III N=21 Mean (SD) [CI]/ Frequency (%)				t-test (p-value)/ Chi square	t-test (p-value)/ Chi square	t-test (p-value)/ Chi square
First order theory of mind index	0.64(0.25) [0.55-0.73]	0.62(0.30) [0.51-0.72]	0.78(0.19) [0.70-0.88]	F= 2.79 (0.06)	III>I>II	0.283	t= 0.32 (0.75)	t= -2.23 (0.03)*	t= -2.17 (0.03)*
Second order theory of mind index	0.22(0.22) [0.15-0.30]	0.17(0.24) [0.09-0.25]	0.23(0.17) [0.16-0.31]	F= 0.59 (0.55)	III>I>II	0.231	t= 0.89 (0.37)	t= -0.90 (0.37)	t= -0.08 (0.93)
Faux pas composite index	0.69(0.13) [0.64-0.73]	0.63(0.16) [0.57-0.69]	0.78(0.12) [0.72-0.82]	F= 6.60 (0.002)**	II>I>II; III>II**	0.300	t= 1.62 (0.11)	t= -3.5 (0.001)**	t= -2.40 (0.02)*
Social perception index	0.75(0.10) [0.72-0.79]	0.68(0.14) [0.64-0.73]	0.75(0.13) [0.69-0.80]	F= 3.41 (0.04)*	III>I>II; III>II*	0.278	t= 2.38 (0.02)*	t= -1.88 (0.06)	t= -0.008 (0.99)
Non-social perception index	0.83(0.13) [0.78-0.87]	0.81(0.15) [0.75-0.86]	0.90(0.12) [0.84-0.95]	F=2.70 (0.07)	III>I>II	0.211	t= 0.47 (0.64)	t= -2.17 (0.03)*	t= -2.01 (0.04)*
Externalizing bias index	0.37(2.63) [Median-1 [-0.53-1.28]	0.77(2.70) [Median-1 [-0.08-1.72]	0.14(1.68) [Median-0.56 [-0.57-0.84]	H= 0.77 (0.68)	II>I>III	0.142	U= 572 (0.63)	U= 316 (0.38)	U= 342 (0.66)
Personalizing bias index	1(0.55) [Median- 1 [0.82-1.19]	0.49(0.99) [Median-0,80 [0.11-0.79]	0.50(1.15) [Median-0.96 [-0.02-0.93]	H= 11.10 (0.004)**	I>III>II	0.114	U= 322 (0.001)**	U= 279 (0.13)	U= 310 (0.32)

t: T test; SD: standard deviation;CI- confidence interval; U: Mann–Whitney value; H: Kruskal-Wallis value; F: ANOVA value;\*p 0.05; \*\*p 0.01

Social cognition in all the 3 groups was evaluated by using SOCRATIS. As is evident from Table-2, very few significant differences were observed between the 3 groups of participants with schizophrenia. When participants with schizophrenia currently in clinical remission were compared with those with treatment resistant schizophrenia participants later performed poorly on the subtests of social perception index and the personalizing bias. When the participants with treatment resistant schizophrenia were compared with those with antipsychotic naïve first episode schizophrenia, participants with treatment resistant schizophrenia performed poorly on the subtests of first order theory of mind, faux pas composite Index, social perception index, and non-social perception index. Similarly, compared to the participants with antipsychotic naïve first episode schizophrenia, participants with schizophrenia currently in clinical remission performed

## DISCUSSION

By understanding social cognition deficits in schizophrenia we can screen them and by applying remediation therapies can improve overall functioning of patients. We can target these deficits by various cognitive retraining techniques, which will achieve a larger goal of better rehabilitation of patients. Although these deficits are well known in all stages of illness in schizophrenia patients but very few studies had assessed the same. In current study we tried to assess these deficits in various stages of illness.

The sociodemographic details of participants in our study resembles the earlier studies in which SC was evaluated<sup>3</sup>. We included ToM, SP and AS in our assessment. In our assessment participants in clinical remission performed better than other two groups. When participants with schizophrenia currently in clinical remission non-TRS were compared with

those with treatment resistant schizophrenia participants with treatment resistant schizophrenia performed poorly on the subtests of social perception index and the personalizing bias. When treatment resistant schizophrenia participants were compared with those with antipsychotic naïve first episode schizophrenia, participants the former performed poorly on the subtests of first order theory of mind, social perception index, and non-social perception index and faux pas composite Index. Similarly, compared to the participants with antipsychotic naïve first episode schizophrenia, participants with schizophrenia currently in clinical remission non-TRS performed poorly on the subtest of first order ToM and faux pas composite index and non-social perception index.

Significant differences were noted in the domains of first order ToM and social perception index between schizophrenia in remission and antipsychotic naïve schizophrenia with better performance in the antipsychotic naïve group in these domains.

To conclude this study advocates that in all phases of illness deficits in social cognition are present with more deficits during the acute phase. These deficits lead to deterioration in socio-occupational functioning and high disability. Consequently, any efforts to address these deficits will enhance the performance in these domains and improve overall functioning.

## References

1. Marder SR, Kirkpatrick B. Defining and measuring negative symptoms of schizophrenia in clinical trials. *Eur Neuropsych.* 2014;24:737-43.
2. Penn DL, Sanna LJ, Roberts DL. Social cognition in schizophrenia: an overview. *Schizophrenia bulletin.* 2008;34:408-11.
3. Mehta UM, Thirthalli J, Bhagyavathi HD, Kumar JK, Subbakrishna DK, Gangadhar BN, Eack SM, Keshavan MS. Similar and contrasting dimensions of social cognition in schizophrenia and healthy subjects. *Schizophrenia research.* 2014;157:70-7.
4. Penn DL, Corrigan PW, Bentall RP, Racenstein J, Newman L. Social cognition in schizophrenia. *Psychological bulletin.* 1997;121:114.
5. Frith CD, Frith U. Interacting minds--a biological basis. *Science.* 1999;286:1692-5.
6. Premack D, Woodruff G. Does the chimpanzee have a theory of mind?. *Behavioral and brain sciences.* 1978;1:515-26.
7. Donohoe G, Spoletini I, McGlade N, Behan C, Hayden J, O'Donoghue T, Peel R, Haq F, Walker C, O'Callaghan E, Spalletta G. Are relational style and neuropsychological performance predictors of social attributions i chronic schizophrenia?. *Psychiatry research.* 2008;161:19-27.
8. Keefe RS, Harvey PD. Cognitive impairment in schizophrenia. *Novel antischizophrenia treatments.* 2012;43:11-37.

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