

# Metacognition and Clinical Insight in Schizophrenia



## Kiran Srivastava

Research Scholar,  
Deptt. of Psychology,  
Mewar University,  
Gangrar, Chittorgarg, Rajasthan

## Ravindra Kumar

Assistant Professor,  
Deptt. of Psychology,  
Mewar University,  
Chittorgarg, Rajasthan

## Rakesh Kumar

Senior Clinical Psychologist,  
IMHH,  
Agra

### Abstract

Residing with humans involves knowing of one's own thoughts, feelings and desires as well as understanding of others mental functionings; it is the utmost important as our interaction with the environment is based on the same fact. Poor mental abilities negatively affects the quality of life and personal well-being of an individual and leads to many pathological problems (Perris &Skagerlind, 1998). It is clear, however, that impaired insight plays a very significant role in the origin and maintainence of psychotic phenomena. The present study aims to study the association of metacognition and clinical insight in schizophrenia. Thus thirty patients with schizophrenia diagnosed as per ICD-10 criteria were drawn from I.M.H.H, Agra. Scale to assess Unawareness Of Mental Illness (SUM-D) and Metacognition assessment scale (MAS) were administered. Mean, S.D. Pearson Product moment correlation were computed for SUM-D. Detailed results will be discussed.

**Keywords:** Schizophrenia, Metacognition, Clinical Insight.

### Introduction

Many research committee has suggested insight as a multidimensional, yet there are few methods to assess them on a continuum in order to provide them with assistance for betterment. Thus for the above said condition (Amador., Strauss & Yale., 1991) founded Scale to assess Unawareness of Mental Disorder with the concept of having better understanding of the Psychopathology.

### Review of Literature

Metacognition is referred to as high level cognitive functioning by American developmental psychologist John Flavell (1979). It comes from the word "meta", meaning beyond. (Metcalf, J., & Shimamura, A. P. 1994)The two major components of Metacognition are: knowledge about cognition, and regulation of cognition.(Schraw, & Gregory 1998).

Researches done on the schizophrenic patients states poor performance in terms of metacognitive functioning. (Quiles C, Prouteau A &Verdoux H.2013)

Metacognition involves understanding abilities to use techniques for solving a problem (Nicolas et al., 2001). Poor awareness of illness is a clinical feature in schizophrenia, and indeed of psychosis in general .(Amador & David 2004). An exploration of relationship between these two aspects would be of immense help in cognitive remediation programs.To the best of our knowledge, till date none of the studies has directly compared the metacognition and insight among the schizophrenics patients. This study will contribute to the fund of knowledge in better management of cognitive functions and insight.

With passing years, there has been a lot of disparity observed in insight specially in adults with schizophrenia both in early onset or in later phases of psychiatric condition. (Vohs et al., 2015). Poor insight has been associated with poor treatment plan, (Misdrahi et al, 2016) overall span of psychosis and no therapeutic coalition with doctors. (Berry, Gregg, Lobban & Barrowclough, 2016); (Ruchlewska, A., Kamperman, A. M., van der Gaag, M., Wierdsma, A. I., & Mulder, N. C, 2016).It has also been linked with negative impacts like increase in frequency of relapses (Bergéet al., 2015) aggravated symptoms (Misiak et al 2016) and deteriorating interpersonal and community functioning. (Erol, Delibas, Bora, & Mete, 2015; Firmin, Luther, Lysaker, &Salyers, (2015).

On the other hand literatures has reflected that better awareness of mental condition leads to depression, hopelessness, low self-esteem, low quality of life, low sense of meaning in life, and suicidality, especially when stigma is attached with the psychiatric condition (Adan et al., 2017)

Seeking to operationalize these processes, the integrated model of insight (Vohs, George, Leonhardt, & Lysaker, 2016) suggests that metacognitive deficits are among the most proximal causes of poor insight. Metacognition refers to the capacity in forming a non segregated sense of self and others and to use that understanding in order to counter the potential challenges in life. (Lysaker et al 2018)

**Objectives of the Study**

The aim of the study was to study the association of metacognition and clinical insight in schizophrenia and the specific objectives were:

To determine the relationship of metacognition and Clinical Insight in schizophrenia.

**Material and Method**

**Sample**

30 schizophrenics diagnosed according to ICD-10 criteria as well as those fulfilling the exclusion and inclusion criteria will be taken for the study through purposive sampling.

1. Patients between ages of 18-45 years
2. Patients of both the gender.
3. Patients meeting the ICD-10 criteria for schizophrenia
4. Patients who are cooperative for the study and able to comprehend the test requirements

**Exclusion Criteria**

1. Patient who has history of organicity
2. Patient having co morbid major psychiatric illness.
3. Mental retardation
4. Acutely disturbed patients who would fail to comprehend the tasks and co-operate

**Tools**

Following tools were used to assess the metacognition and clinical insight on schizophrenic patients.

**Meta Cognitive Assessment Scale**

The MAS revised from Semerari et al.'s (2003) version was used and measures metacognitive abilities, using three subscales: Understanding one's Own Mental states (UM), Understanding Others' Mental states (UOM) and Mastery (M); the capacity to use mental state information and implement specific strategies, regulate affect and overcome difficulties. UM has four categories increasing in sophistication; 'basic requirements' denotes recognition that personal mental functions are independent. 'Monitoring' is the ability to define and differentiate between cognitive and emotional states, relate between these, and the ability to come to conclusions about the cause and effect of thoughts and actions. 'Differentiation' means recognising the subjectivity of mental functions, the hypothetical nature of opinion and distinguishing between reality and fantasy. 'Integration' refers to engaging in a coherent narrative, exploring different aspects of experience, sophisticatedly hypothesising

about cause and effect and integrating the multiplicity of experience.

UOM has three categories; 'basic requirements', the same as UM. 'Monitoring'; describing thoughts and feelings of others and hypothesises about links between others'.

**The Scale to Assess Unawareness of Mental Disorder (SUMD-A)**

This tool was developed by Amador et al., (1994) The SUMD is a semi-structured interview rating for schizophrenia patients measuring their clinical insight items on a 5-point Likert scale. SUMD assesses (1) awareness of the mental disorder, (2) consequences of the mental disorder, (3) effects of medication, (4) hallucinatory experiences, (5) delusions (6) thought disorder, (7) flat or blunted affect, (8) anhedonia, and (9) asociality. Each of these items is scored on a 4-point rating scale: 0 (not applicable), 1 (aware), 2 (somewhat aware/unaware), and 3 (severely unaware). The SUMD-A is not added to calculate a total score, but every single item correspond to a separate aspect of insight Amador et al., (1994) reported that the inter-rater intra-class-correlation co - efficiencies for the SUMD ranged from 0.76 to 0.99 with a median of 0.89.

**Procedure**

Patient diagnosed as having schizophrenia as per ICD-10 and meeting the inclusion criteria were selected for the study. Socio demographic Information was gathered from the sample on a semi structured socio-demographic data sheet. Clinical details of the patients were collected and then Metacognition Assessment Scale was used to assess metacognitive abilities and after that clinical insight was administered to assess clinical insight on patient.

**Result**

**Table 1**  
**Mean and S.D. of Metacognition**

| Variables          | Mean | S.D. |
|--------------------|------|------|
| Understanding Self | 4.54 | 1.35 |
| Understanding Self | 3.70 | 2.89 |
| Mastery            | 1.30 | 1.26 |

Table depicts Mean and S.D. of Metacognition in study group.

The table reveals high Mean in understanding self.

**Table 2**  
**Mean and S.D of SUMD-A**

| Variables           | Mean | S.D. |
|---------------------|------|------|
| Current Symptom     | 2.58 | .38  |
| Current Attribution | 2.10 | .36  |
| Past Symptom        | 2.9  | .42  |
| Past Attribution    | 2.80 | .52  |

Table depicts Mean and S.D. of Metacognition assessment scale in study group.

The table reveals high Mean and S.D in Past Attribution.

**Table 3**  
**Correlation Coefficients**  
**SUMD-AScores**

| MAS<br>Variables     | Current Symptom | Current Attribution | Past Symptom | Past Attribution |
|----------------------|-----------------|---------------------|--------------|------------------|
| Understanding Self   | .21             | -.016               | .203         | .38*             |
| Understanding Others | .29             | .26                 | -.06         | .17              |
| Mastery              | -.09            | -.19                | -.1.1        | -.011            |

\*Significant at < 0.05 level(2-tailed), \*\*significant at <0.01 level (2-tailed)

Correlation was computed to explore the effect of domains of metacognition on SUMD-A variables. Understanding self of (MAS) was found to be significantly correlated with Past attribution and negatively correlated with current attribution. Mastery of (MAS) was found to be negatively correlated with current symptom, current attribution, past symptom and past attribution.

#### **Discussion & Conclusion**

The present study was an attempt to determine the relationship of Metacognition and Clinical Insight in schizophrenia. Thus thirty schizophrenic patients were taken for the purpose. This study aimed to determine whether metacognition and its dimension are associated with clinical Insight dimension of Current Symptom, Current Attribution, Past Symptom, Past Attribution.

The concept of metacognition has huge influence on cognitive neuropsychiatry—which involves a field to undertake and focus on the fundamental cognitive processes for psychological and behavioural abnormalities. Moreover these poor psychological abnormalities can best be understood in terms of deficits exhibited by the autistics individual or like in psychosis.

Again Metacognition according to Saxe & Offen (2010) can best be explained in two different terms namely attributive metacognition and strategic metacognition. Attributive metacognition involves the ability to ascribe beliefs, desires and self knowledge to while the strategic metacognition reflects the ability to supervise and command on the ongoing mental activities

Poor insight is one of the important factor for non compliance to medication.

It poses an important question as to who would like to take medicine for the illness they are not ready to accept. Moreover unawareness of illness also leads to poor chances of improvement, increases in the number of admissions in the psychiatric ward, poor performance on the job front, poor interpersonal relationship. It is still a debatable condition to pin point the exact causal factors for poor insight depending on the direct or indirect outcome of psychopathology. However it can very well be stated that unawareness of illness are not the only result of non compliance of medicine as there are other factors too contributing to the illness

However, the present findings showed, unexpectedly, that the dimension of Metacognition namely understanding self and understanding others had a positive relationship with Past attribution of Psychopathology. As stated earlier individuals with poor awareness of illness of their mental condition as one of the major factor contributing to it. (Amador and David 2004; Osatuke et al., 2008)

A lot of scientific studies has shown that schizophrenic patients exhibit poor insight into their illness when compared with other diagnosis like bipolar disorder and major depressive disorder (Michalakeas A et al., 1994) along with those suffering from schizo affective disorder and mood disorders with and without psychosis (Ghaemi, & Rosenquist 2004; Amador et al., 1994; Pini, Cassano, Dell'Osso & Amador X. F. 2001)

However, there has also findings stating no significant differences between different patient groups (David et al., 1995; Cuesta., Peralta & Zarzuela 2000)

Furthermore negative correlation of clinical insight with the domain of metacognition can be justified on the basis of brain anatomy. Many Imaging findings reflects an association of poor insight with that of reduced total brain volume (.Flashman ., Mc Allister , Andreasen & Saykin 2000; McEvoy et al., 2006; Takai., Uematsu ., Ueki ., Sone & Kaiya 1992) reduced frontal lobe volume (Laroi et al., 2000' Flashman et al., 2001; Sapara et al. 2007; Shad., Muddasani & Keshavan 2006) reduced cingulate gyrus and temporal lobe grey matter volume (Ha T et al., 2004; Cooke et al., 2008)

In spite of the above supportive findings there are also data available on the variation of the exact location of brain–insight correlates and also in the failure to recognise any brain abnormalities associated with poor insight (David et al., 1995; David et al., 1995; Bassitt et al., 2007).

One possible justification for such inconsistency in the findings may be due to the use of different imaging techniques available. (Cooke et al., 2008; Bassitt., Neto ., de Castro & Busatto 2007; Berge et al 2011)

The most recent advances in this field has started focusing on the new imaging techniques like cortical thickness (Buchy et al., 2011) and white matter integrity (Antonius et al., 2011).

It is possible to place the clinical, especially psychiatric concept of insight into illness within a metacognitive framework Thus it can be summarized that poor insight is common in schizophrenia. Approximately 50% of all schizophrenics shows severe, pervasive, and persistent issues with insight. Psychoeducation does not satisfy as the only remedy for this problem because as it stems from neuropsychological deficits. It can also be argued that when such patients are treated, simplification of dosing, increased supervision, and, if possible, long-acting injectable medications in preference to oral therapies are likely to be effective.

The limitations of the present study was that the sample was taken from one centre. Secondly only the male population was taken for the study.

Future directions for the present study would be that the sample size can be increased, both the gender can be taken for the study, also this study can be used to prepare a better plan for the rehabilitation purpose of the patient group.

## References

- Adan, A., del Mar Capella, M., Prat, G., Forero, D. A., López-Vera, S., & Navarro, J. F. (2017). Executive functioning in men with schizophrenia and substance use disorders. Influence of lifetime suicide attempts. *PLoS one*, 12(1), e0169943.
- Amador XF, Strauss DH, Yale SA, Gorman M. (1991). Awareness of illness in schizophrenia. *Schizophrenia Bulletin*, 17, 113–132.
- Amador, X. F., & David, A. S. (Eds.). (2004). *Insight and psychosis: awareness of illness in schizophrenia and related disorders*. Oxford University Press.
- Amador, X. F., Flaum, M., Andreasen, N. C., Strauss, D. H., Yale, S. A., Clark, S. C., & Gorman, J. M. (1994). Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Archives of general psychiatry*, 51(10), 826-836.
- Antonius, D., Prudent, V., Rehani, Y., D'Angelo, D., Ardekani, B.A., Malaspina, D. & Hoptman, M.J. (2011). White matter integrity and lack of insight in schizophrenia and schizoaffective disorder. *Schizophrenia Research*, 128, 76–82.
- Antonius, D., Prudent, V., Rehani, Y., D'Angelo, D., Ardekani, B. A., Malaspina, D., & Hoptman, M. J. (2011). White matter integrity and lack of insight in schizophrenia and schizoaffective disorder. *Schizophrenia research*, 128(1-3), 76-82.
- Bassitt, D. P., Neto, M. R. L., de Castro, C. C. & Busatto, G. F. (2007) *Insight and regional brain volumes in schizophrenia*. *European Archives of Psychiatry and Clinical Neuroscience*. 257, 58–62.
- Bassitt, D. P., Neto, M. R. L., de Castro, C. C., & Busatto, G. F. (2007). *Insight and regional brain volumes in schizophrenia*. *European archives of psychiatry and clinical neuroscience*, 257(1), 58-62.
- Berge, D., Carmona, S., Rovira, M., Bulbena, A., Salgado, P. & Vilarroya, O. (2010). Gray matter volume deficits and correlation with insight and negative symptoms in first-psychotic-episode subjects. *Acta Psychiatrica Scandinavica*, 123, 1–9
- Bergé, D., Carmona, S., Rovira, M., Bulbena, A., Salgado, P., & Vilarroya, O. (2011). Gray matter volume deficits and correlation with insight and negative symptoms in first-psychotic-episode subjects. *Acta Psychiatrica Scandinavica*, 123(6), 431-439.
- Bergé, D., Mané, A., Salgado, P., Cortizo, R., Garnier, C., Gomez, L., ...& Pérez, V. (2015). Predictors of relapse and functioning in first-episode psychosis: a two-year follow-up study. *Psychiatric Services*, 67(2), 227-233.
- Berry, K., Gregg, L., Lobban, F., & Barrowclough, C. (2016). *Therapeutic alliance in psychological therapy for people with recent onset psychosis who use cannabis*. *Comprehensive psychiatry*, 67, 73-80.
- Berti, A., Bottini, G., Gandola, M., Pia, L., Smania, N., Stracciari, A., Castiglioni, I., Vallar, G. & Paulesu, E. (2005). Shared cortical anatomy for motor awareness and motor control. *Science* 309, 488–491
- Bruno N, Sachs N, Demily C, Frank N, & Pachierie E (2012) *Delusion and metacognition in patients with schizophrenia*. *Cognitive Neuropsychiatry*, 17(1), 1-18.
- Buchy, L., Ad-Dab'bagh, Y., Malla, A., Lepage, C., Bodnar, M., Joobar, R., & Lepage, M. (2011). Cortical thickness is associated with poor insight in first-episode psychosis. *Journal of psychiatric research*, 45(6), 781-787.
- Cooke, M. A., Fannon, D., Kuipers, E., Peters, E., Williams, S. C., & Kumari, V. (2008). Neurological basis of poor insight in psychosis: a voxel-based MRI study. *Schizophrenia research*, 103(1-3), 40-51.
- Cuesta, M. J., Peralta, V., & Zarzuela, A. (2000). Reappraising insight in psychosis: multi-scale longitudinal study. *The British Journal of Psychiatry*, 177(3), 233-240.
- Cuesta, M. J., Peralta, V., & Zarzuela, A. (2000). Reappraising insight in psychosis: multi-scale longitudinal study. *The British Journal of Psychiatry*, 177(3), 233-240.
- David, A., van Os, J., Jones, P., Harvey, I., Foerster, A., & Fahy, T. (1995). Insight and psychotic illness: cross-sectional and longitudinal associations. *The British Journal of Psychiatry*, 167(5), 621-628.
- Erol, A., Delibas, H., Bora, O., & Mete, L. (2015). The impact of insight on social functioning in patients with schizophrenia. *International Journal of Social Psychiatry*, 61(4), 379-385.
- Firmin, R. L., Luther, L., Lysaker, P. H., & Salyers, M. P. (2015). Self-initiated helping behaviors and recovery in severe mental illness: Implications for work, volunteerism, and peer support. *Psychiatric Rehabilitation Journal*, 38(4), 336.
- Flashman, L. A., McAllister, T. W., Andreasen, N. C., & Saykin, A. J. (2000). Smaller brain size associated with unawareness of illness in patients with schizophrenia. *American Journal of Psychiatry*, 157(7), 1167-1169.
- Flashman, L. A., McAllister, T. W., Johnson, S. C., Rick, J. H., Green, R. L., & Saykin, A. J. (2001). Specific frontal lobe subregions correlated with unawareness of illness in schizophrenia: a preliminary study. *The Journal of neuropsychiatry and clinical neurosciences*, 13(2), 255-257.
- Ghaemi, S. N., & Rosenquist, K. J. (2004). Is insight in mania state-dependent?: a meta-analysis. *The Journal of nervous and mental disease*, 192(11), 771-775.
- Ha, T. H., Youn, T., Ha, K. S., Rho, K. S., Lee, J. M., Kim, I. Y., & Kwon, J. S. (2004). Gray matter abnormalities in paranoid schizophrenia and their

- clinical correlations. *Psychiatry Research: Neuroimaging*, 132(3), 251-260.
26. Larøi, F., Fannemel, M., Rønneberg, U., Flekkøy, K., Opjordsmoen, S., Dullerud, R., & Haakonsen, M. (2000). Unawareness of illness in chronic schizophrenia and its relationship to structural brain measures and neuropsychological tests. *Psychiatry Research: Neuroimaging*, 100(1), 49-58.
  27. Lysaker, P. H., Hamm, J. A., Hasson-Ohayon, I., Pattison, M. L., & Leonhardt, B. L. (2018). Promoting recovery from severe mental illness: Implications from research on metacognition and metacognitive reflection and insight therapy. *World journal of psychiatry*, 8(1), 1.
  28. McEvoy, J. P., Johnson, J., Perkins, D., Lieberman, J. A., Hamer, R. M., Keefe, R. S., & Sharma, T. (2006). Insight in first-episode psychosis. *Psychological medicine*, 36(10), 1385-1393.
  29. Metcalfe, J., & Shimamura, A. P. (1994). *Metacognition: knowing about knowing*. Cambridge, MA: MIT Press.
  30. Michalakeas, A., Skoutas, C., Charalambous, A., Peristeris, A., Marinos, V., Keramari, E., & Theologou, A. (1994). Insight in schizophrenia and mood disorders and its relation to psychopathology. *Acta Psychiatrica Scandinavica*, 90(1), 46-49.
  31. Misdrahi, D., Tessier, A., Swendsen, J., Berna, F., Brunel, L., Capdevielle, D., ...& Dubertret, C. (2016). Determination of Adherence Profiles in Schizophrenia Using Self-Reported Adherence: Results From the FACE-SZ Dataset. *The Journal of clinical psychiatry*, 77(9), e1130-e1136.
  32. Misiak, B., Frydecka, D., Beszlej, J. A., Moustafa, A. A., Tybura, P., Kucharska-Mazur, J., ...& Samochowiec, J. (2016). Effects of antipsychotics on insight in schizophrenia: results from independent samples of first-episode and acutely relapsed patients. *International clinical psychopharmacology*, 31(4), 185-191.
  33. Nicolò, G., Dimaggio, G., Semerari, A., & Carcione, A. (2001). Metacognition y Trastorno Paranoide de Personalidad. *Revista de Psicoterapia*, 45, 117-136.
  34. Osatuke, K., Ciesla, J., Kasckow, J. W., Zisook, S., & Mohamed, S. (2008). Insight in schizophrenia: a review of etiological models and supporting research. *Comprehensive psychiatry*, 49(1), 70.
  35. Pini, S., Cassano, G. B., Dell'Osso, L., & Amador, X. F. (2001). Insight into illness in schizophrenia, schizoaffective disorder, and mood disorders with psychotic features. *American journal of psychiatry*, 158(1), 122-125.
  36. Quiles, C., Prouteau, A., & Verdoux, H. (2013). Characteristics and impact of metacognitive deficits in schizophrenia. *Encephale*, 39, 123-129.
  37. Ruchlewska, A., Kamperman, A. M., van der Gaag, M., Wierdsma, A. I., & Mulder, N. C. (2016). Working alliance in patients with severe mental illness who need a crisis intervention plan. *Community mental health journal*, 52(1), 102-108.
  38. Sapara, A., Cooke, M., Fannon, D., Francis, A., Buchanan, R. W., Anilkumar, A. P., & Kumari, V. (2007). Prefrontal cortex and insight in schizophrenia: a volumetric MRI study. *Schizophrenia research*, 89(1-3), 22-34.
  39. Saxe, R., & Offen, S. (2010). Seeing ourselves: what vision can teach us about metacognition. *Metacognition and severe adult mental disorders* (eds G. Dimaggio & P.H. Lysaker), 13-30.
  40. Shad, M. U., Muddasani, S., & Keshavan, M. S. (2006). Prefrontal subregions and dimensions of insight in first-episode schizophrenia—a pilot study. *Psychiatry Research: Neuroimaging*, 146(1), 35-42.
  41. Takai, A., Uematsu, M., Ueki, H., & Sone, K. (1992). Insight and its related factors in chronic schizophrenic patients: A preliminary study. *The European journal of psychiatry*.
  42. Vohs, J. L., George, S., Leonhardt, B. L., & Lysaker, P. H. (2016). An integrative model of the impairments in insight in schizophrenia: emerging research on causal factors and treatments. *Expert review of neurotherapeutics*, 16(10), 1193-1204.
  43. Vohs, J. L., Lysaker, P. H., Liffick, E., Francis, M. M., Leonhardt, B. L., James, A., ...& Breier, A. (2015). Metacognitive capacity as a predictor of insight in first-episode psychosis. *The Journal of nervous and mental disease*, 203(5), 372-378.