

Original Research

## Gender Difference in Symptom Presentation in Schizophrenia- A Cross Sectional Study

Authors

Shivendra Kumar DPM, DNB (Psychiatry)<sup>1</sup>, Sanjay Kumar Munda- DPM, MD (Psychiatry)<sup>2\*</sup>, CRJ Khess- MD (Psychiatry)<sup>3</sup>

<sup>1</sup>Senior Resident Psychiatry, AIIMS Patna

<sup>2</sup>Assistant Professor of Psychiatry, Central Institute of Psychiatry, Ranchi

<sup>3</sup>Professor of Psychiatry, Central Institute of Psychiatry, Ranchi

\*Corresponding Author

**Sanjay Kumar Munda DPM,MD (Psychiatry)**

Assistant Professor of Psychiatry, Central Institute of Psychiatry, Ranchi, India

### Abstract

**Introduction:** Males and females are different both biologically and physiologically. Also social roles, norms, and traditions are different in males and females. So it may be presumed that they may also differ in symptom presentation during illness. Also culture may have important contribution when it comes to gender, both in non-diseased and diseased state as many psychosocial hypotheses have been proposed in causation of mental illness. Schizophrenia is regarded as most severe mental illness. Many prior studies have established that males have more negative symptoms and females more prominent positive symptoms. But this difference needs to be examined in different settings to have more comprehensive assessment and treatment for better outcome.

**Materials and Methods:** 25 male and 25 female patients of schizophrenia taken by purposive sampling and cross sectional assessment of baseline symptoms were done by PANSS. Analysis of the sample done by statistical methods to identify difference in symptomatology.

**Results:** PANSS negative symptom score was higher in males ( $21.96 \pm 6.99$ ) than females ( $17.20 \pm 5.21$ ) and it was significant ( $p = .01$ ). PANSS positive symptom score was higher in female ( $27.60 \pm 4.85$ ) than male ( $24.92 \pm 6.23$ ) patients of schizophrenia. The association was not significant in positive symptoms ( $p = .09$ ).

**Conclusions:** At the level of baseline psychopathology, positive symptoms were more prominent in females and negative symptoms in males.

**Keywords:** Schizophrenia, Negative and positive symptoms.

### Introduction

Gender differences existed in behavioral symptoms of psychosis in terms of restlessness and over adaptiveness/ conformity more common in women and drug and alcohol use, self neglect,

reduced interest in a job, social inattentiveness, deficits of free time activities, deficits of communication, social disability, loss of interests and deficits of personal hygiene more common in males.

Symptom presentation in schizophrenia is mainly assessed as positive and negative symptoms. Hughlings Jackson was the first to use the term more or less in its current meaning.<sup>[1]</sup> Positive symptoms were characterized by the prominence of delusions, hallucinations & formal thought disorder, while negative symptoms are characterized by anhedonia, alogia, avolition and flat affect.<sup>[2]</sup>

There is no consistent strong evidence for gender differences in symptom presentation. Some studies reveal gender differences, with men having more negative symptoms than women in first episode psychosis and schizophrenia,<sup>[3,4]</sup> while others find no difference.<sup>[3-5]</sup> One large study reported equal levels of delusions, but higher levels of hallucinations for women. In this study, higher levels of anhedonia and a sociality for men were present and men having higher global scores in all 5 subgroups in SANS.<sup>[6]</sup>

However different cross cultural studies give an opportunity to examine current research in schizophrenia to include gender among different socio-cultural factors influencing symptom presentation in schizophrenia. In an article discussing findings of DOSMED study, it was stated that "culture is a conceptually distinct and potentially powerful environmental factor capable of exerting a significant effect on the course of schizophrenia or any other mental disorder".<sup>[7]</sup> As gender is a culturally influenced concept, it may be possible that gender difference in different cultures may have some effect on symptomatology along with course and outcome. But this important aspect has received little attention so far. The question-is the difference between symptomatology of schizophrenia attributed to gender is disease specific-largely remain unanswered.<sup>[8]</sup> Factors such as higher substance use, use of high dose of antipsychotics and weather negative symptoms are true or secondary in nature are confounding factors while assessing psychopathology.<sup>[9-11]</sup>

The present study aim to study gender difference in baseline psychopathology in a distinct cultural

group with most acceptable instruments and comparison done by statistical instruments.

### Materials and Methods

Present study was done at Central Institute of Psychiatry, Ranchi which is a tertiary level mental health Institute with wide catchment area. 25 each male and female patients of schizophrenia were selected by purposive sampling. Patients were age matched and were in the age range 20-40 years old to avoid late onset schizophrenia.<sup>[12]</sup> The diagnosis of schizophrenia was made as per criterion laid down in ICD-10 DCR by 2 psychiatrists.<sup>[13]</sup> Co morbid substance use, other psychiatric disorder or significant medical disorders were excluded from study. Prior to starting the study, ethical clearance was taken from scientific and ethical committee from the institute. Written informed consent was taken from patients and in case of illiterate persons by reading out to them and witnessed by 2 persons were taken. Baseline symptomatology was assessed by positive and negative syndrome scale for schizophrenia (PANSS).<sup>[14]</sup> PANSS is a 30 item rating scale and is widely used for assessment of symptoms of schizophrenia. It consists of a semi-structured clinical interview and also use any available supportive clinical information. The 30 items rate along a 7-point continuum (1 = absent, 7 = extreme). The assessment provides separate scores in 3 clinical domains- positive syndrome, negative syndrome and general psychopathology. Ratings are generally based upon information relating to the past week.

### Results

PANSS score was different between male and female patients of schizophrenia. T- test was done to find out the difference between two sample populations. PANSS positive syndrome score was higher in females than males. It was  $24.92 \pm 6.23$  for males and  $27.60 \pm 4.85$  for females. Although it was higher in females, it was not significant ( $p=.09$ ). PANSS negative score was higher in males than females. It was  $21.96 \pm 6.99$  in males

and  $17.20 \pm 5.21$  in females. On statistical analysis, it was significant ( $p=.01$ ). The PANSS general domain score was nearly same in male and female patients. PANSS total score was high in males ( $95.56 \pm 14.10$ ) than females ( $93.56 \pm 10.34$ ) but the

difference was not significant ( $p=.57$ ) indicating although males have higher psychopathology, there was no significant difference in overall psychopathology.

**Table 1:** Group differences of PANSS (Positive and Negative Syndrome Scale) items in male and female patients of schizophrenia

Variables	Male (n=25) (Mean $\pm$ SD)	Female (n=25) (Mean $\pm$ SD)	t	df	p
PANSS(positive)	24.92 $\pm$ 6.23	27.60 $\pm$ 4.85	-1.69	48	.09
PANSS(negative)	21.96 $\pm$ 6.99	17.20 $\pm$ 5.21	2.72	48	.01*
PANSS(general)	48.28 $\pm$ 8.38	48.76 $\pm$ 6.58	-0.22	48	.82
PANSS(total)	95.56 $\pm$ 14.10	93.56 $\pm$ 10.34	.57	48	.57

\*Significant at  $P < 0.01$  (2 tailed)

## Discussion

In this study, some methodological improvements were tried – diagnosis was made by 2 independent psychiatrists based on widely accepted diagnostic criteria laid in ICD- 10 DCR. The diagnostic criteria laid down in ICD-10 DCR are tested and acceptable over wide cultural regions. Persons with schizoaffective or affective disorders were excluded from study so that more accurate symptomatology of schizophrenia could be determined. Age range was kept as 20-40 years so that most common age of presentation of schizophrenia could be included as delineated in various epidemiological studies. Also upper age limit of 40 years could separate late onset schizophrenia from present study population avoiding the contamination of findings. To assess symptom presentation, PANSS was used which is one of the most commonly used tool for global assessment of psychopathology in schizophrenia and is also widely used in India.<sup>[15]</sup>

On comparison, PANSS (negative) domain score was significantly higher in males than females. Several studies earlier have also reported that males with schizophrenia had more negative symptoms than females.<sup>[4,16]</sup> Though a prospective, double blind placebo controlled trial comparing 24 male and 20 female patients did not find significant sex-based difference.<sup>[17]</sup> In previous studies, female patients with

schizophrenia were having higher depressive symptoms,<sup>[18]</sup> it is possible that negative symptoms in women are more likely to be secondary to depressive symptomatology and not true negative symptoms, whereas negative symptoms in men are more likely to be a primary result of the disease process of schizophrenia.<sup>[18]</sup> In this study female patients scored higher in PANSS (positive) than males. Though findings were not significant. In earlier studies also, female patients with schizophrenia report affective symptoms, auditory hallucinations and persecutory delusions more frequently.<sup>[18]</sup> In a recent review published from India on topic-women and schizophrenia, nearly same results were reported in females.<sup>[19]</sup> The general syndrome score was nearly identical but overall symptomatology was slightly higher in males than females. It may point that negative symptoms are the main symptoms which can differentiate between male and female patients of schizophrenia. We have tried to eliminate confounding factors e.g. - substance use and patients on high dose drugs as symptomatology was assessed at baseline.

## Conclusion

Negative syndromes are more common in male patients of schizophrenia. As has been established previously, that negative symptoms are difficult to

treat from conventional antipsychotics, next generation of antipsychotics should be preferable treatment in male patients of schizophrenia. While enquiring for female patients, more emphasis should be given to positive symptoms and if negative symptoms are present, clear out whether these symptoms are secondary in nature or not. However study needs to be confirmed after longitudinal studies with larger sample size done for stability of symptoms.

## References

1. Hughlings Jackson J: Selected Writings. London, Hodder and Stoughton 1931–1932.
2. Andreasen NC. The scale for the assessment of positive symptoms (SAPS). Iowa City: University of Iowa 1984.
3. Preston NJ, Orr KG, Date R, Nolan L, Castle DJ. Gender differences in premorbid adjustment of patients with first episode psychosis. *Schizophrenia Research* 2002; 55:285–290.
4. Moriarty PJ, Lieber D, Bennett A, White L, Parrella M, Harvey PD, et al. Gender differences in poor outcome patients with lifelong schizophrenia. *Schizophrenia Bulletin* 2001; 27:103–113.
5. Häfner H. Gender differences in schizophrenia. *Psychoneuroendocrinology* 2003; 28:17–54.
6. Thorup A, Petersen L, Jeppesen P, Ohlenschloeger J, Christensen T, Krarup G, et al. Gender differences in young adults with first-episode schizophrenia spectrum disorders at baseline in the Danish OPUS study. *Journal of Nervous and Mental Disease* 2007;195:396–405.
7. Edgerton, R.B., and Cohen, A. Culture and schizophrenia: The DOSMD challenge. *British Journal of Psychiatry* 1994;164:222-231.
8. Rietschel L, Lambert M, Karow A, Zink M, Muller H, Heinz A, et al. Clinical high risk for psychosis: gender differences in symptoms and social functioning. *Early Interv Psychiatry* 2015;11:306-313.
9. Ring N, Tantam D, Montague L, Newby D, Black D, Morris J. Gender differences in the incidence of definite schizophrenia and atypical psychosis—focus on negative symptoms of schizophrenia. *Acta Psychiatrica Scandinavica* 1991;84:489–496.
10. Nedopil N, Pflieger R, Ruther E. The prediction of acute response, remission and general outcome of neuroleptic treatment in acute schizophrenic patients. *Pharmacopsychiatria* 1983;16:201–205.
11. Addington J, Addington D. Premorbid functioning, cognitive functioning, symptoms and outcome in schizophrenia. *Journal of Psychiatry and Neuroscience* 1993;18:18–23.
12. J. E. Maglione, S. E. Thomas, and D. V. Jeste, “Late-onset schizophrenia: do recent studies support categorizing it as a subtype of schizophrenia?” *Current Opinion in Psychiatry* 2014;27:173–178.
13. The ICD-10 Classification of Mental and Behavioural Disorders. Diagnostic Criteria for Research. World Health Organization, Washington, DC;1992.
14. Kay SR, Fiszbein A, Opler LA. The Positive and Negative Syndrome Scale for Schizophrenia (PANSS). *Schizophrenia Bulletin* 1987;13:261-269.
15. Grover S, Sarkar S. Antipsychotic Trials in Schizophrenia from India: A Systematic Review and Meta-analysis. *Indian J Pharm Sci* 2015;77:771-779.
16. Shtasel DL, Gur RE, Gallacher F, Heimberg C, Gur RC. Gender differences in the clinical expression of schizophrenia. *Schizophrenia Research* 1992;7:225–231.
17. Pinals DA, Malhotra AK, Missar CD, Pickar D, Breier A. Lack of gender differences in neuroleptic response in patients with schizophrenia. *Schizophrenia Research* 1996;22:215-222.

18. Emsley RA, Oosthuizen PP, Joubert AF, Roberts MC, Stein DJ. Depressive and anxiety symptoms in patients with schizophrenia and schizophreniform disorder. *Journal of Clinical Psychiatry* 1999;60:747–750.
19. Thara R, Kamath S. Women and schizophrenia. *Indian J Psychiatry* 2015;57(2):S246-251.