



## PREVALENCE OF CATATONIC SIGNS AND SYMPTOMS IN DRUG NAÏVE/ DRUG FREE PERSONS SUFFERING FROM SCHIZOPHRENIA IN ADULT PSYCHIATRIC CLINIC

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**ABSTRACT** **Objective:** To investigate the prevalence of catatonic signs and symptoms in drug naïve/drug free persons suffering from schizophrenia and its association with clinical and socio-demographic variables.

**Method:** A total of 5043 patients were screened during 8 months period, out of which 61 adults suffering from schizophrenia who gave informed consent were taken up for the study. They were assessed for presence of catatonic symptoms from a key relative using Bush Francis Catatonia Screening Instrument (BFCSI) and then were examined for catatonic signs with Bush Francis Catatonia Rating Scale (BFCRS). Subjects who had at least two catatonic signs were considered as displaying catatonic features. Severity of psychopathology was assessed using the Positive and Negative Syndrome Scale (PANSS).

**Results:** 23 out of 61 subjects had catatonic features (37.3% of total sample). Catatonic signs were found to be more frequently present in persons having Undifferentiated and Catatonic subtypes. Catatonic signs were significantly more frequent in males and in subjects with higher mean PANSS negative, general psychopathology and total scores.

**Conclusion:** The prevalence of catatonic signs and symptoms in drug naïve/drug free persons suffering from schizophrenia in adult psychiatric is 37.3% and inturn reflects that catatonic phenomenon are still prevalent among them. It also shows correlation of catatonic phenomenon with severity of psychopathology. Further studies with larger sample size needs to be done to give greater credence to results.

**KEYWORDS :** Catatonia, Schizophrenia, Prevalence.

### INTRODUCTION

Catatonia, a term coined by Kahlbaum in 1874 has undergone changing definitions and implications over the years. It is now regarded as a neuropsychiatric syndrome resulting from dysfunction of the brain's motor regulation centers and consists of specific motor and behavioral signs accompanying a mental or medical disorder. It is reported to occur in 10% - 37.7% of adult patients with major psychiatric disorders.<sup>1,2</sup> The current view considering catatonia an uncommon feature of Schizophrenia is misleading. More accurate view would be that while the acute presentation dominated by catatonic phenomenon appear to have declined in frequency, the individual catatonic phenomenon are still prevalent among persons suffering from Schizophrenia. The present study was carried out in the light of paucity of systematic Indian studies investigating catatonia in adult persons suffering from Schizophrenia.

### METHODS

#### Study design and samples

This study was a cross-sectional hospital based study conducted at the Central Institute of Psychiatry (CIP), Kanke, Ranchi. A total of 5043 Patients who presented for first time at CIP between a period of ten months, out of which 61 adults suffering from Schizophrenia from both inpatient and outpatient department fulfilling the inclusion/exclusion criteria were taken up for the study by purposive sampling technique. The study sample consisted adults suffering from Schizophrenia aged between 18-60 years as per ICD-10 DCR who were Drug Naïve/Drug free of antipsychotics for last 4 weeks, 8 weeks if on depot antipsychotics. Patients having comorbid organic or neurological disorders, other psychiatric disorders and substance dependence were excluded from the study. Detailed socio-demographic and other variables were recorded in the proforma designed for the study. Screening of cases fulfilling the inclusion/exclusion criteria for catatonic symptoms was done by Bush Francis Catatonia Screening Instrument (BFCSI)<sup>3</sup> from a key relative; a key relative was defined as someone who remained with the patient for most of the time, preferably one of the first degree relative or spouse. Bush Francis catatonia rating scale was then applied on each patient to rate catatonic signs among them. Each patient was assessed for severity of psychopathology using the PANSS scale.

#### Statistical Analysis

Data analysis was done using Statistical Package for Social Science (SPSS) 10.0. Descriptive statistics were used to illustrate sample characteristics.<sup>2</sup> test was used to compare between groups on discrete variables. Independent sample t test was applied to derive group differences on continuous variables. The level of significance of <0.05 (two tailed) was adapted.

### RESULTS

#### Sample characteristics

The mean age was 31.75 ( $\pm 7.11$ ) years. Male participants were almost five times, 50 (82%), as compared to females 11 (18%). Concerning socio-occupational status, 26 (42.7%) were from lower, 24 (39.3%), from middle and 11 (18%) were from higher socio-economic status. With regard to education, 8 (13.1%) were illiterate, 8 (13.1%) had got primary education (i.e. upto sixth standard), 33 (54.1%) had received secondary education (i.e. upto XIIth standard) whereas 12 (19.7%) were graduates or having higher education. With regard to residence, more participants were from rural background 42 (68.9%), as compared with Urban 13 (21.3%) and suburban background, 6 (9.8%). Clinical variables of the patient population show that the mean age of onset of illness was 27. 36 ( $\pm 7.09$ ) years and the mean duration of illness following which they were included in the study was 4.22 ( $\pm 3.63$ ) years. It also shows the mean drug free duration after which assessment for catatonic signs and symptoms was done, which was found to be 15.32 ( $\pm 14.94$ ) months.

Out of 61 patients, 22 (36.1%) were drug naïve whereas 39 (63.9%) were drug free (i.e. no antipsychotics for last 4 weeks, 8 weeks if on depot antipsychotics). Regarding different subtypes of schizophrenia included in the study, 23 (37.8%) had paranoid schizophrenia, 34 (55.7%) had undifferentiated schizophrenia, 1 (1.6%) had catatonic schizophrenia whereas 3 (4.9%) had other subtypes of schizophrenia (including schizophrenia unspecified).

#### Prevalence and distribution of catatonic signs

Out of 61 subjects included in the study, 23 (37.3% of the entire sample) subjects had at least 2 catatonic signs. The incidence of catatonic features among paranoid schizophrenia patients (N = 23) was found to be 4.3% (N = 1), among undifferentiated schizophrenia patients (N = 34) was 61.8% (N = 21) whereas among catatonic schizophrenia patients was 100% (N = 1), which was found to be statistically significant.

Catatonic signs were significantly more frequent in males and in patients with higher mean PANSS negative, general psychopathology and total score. The mean score of total PANSS negative score among patients with and without catatonic features was 27.08 ( $\pm 6.02$ ) and 19.76 ( $\pm 5.28$ ) respectively. With respect of PANSS total score, the mean among patients with and without catatonic features was found to be 86.69 ( $\pm 15.51$ ) and 76.26 ( $\pm 13.41$ ) respectively. Among the different catatonic signs Negativism, Stupor, Mutism, Staring, Rigidity, Posturing, Mitgehen, were found to be more frequently present, whereas Echopraxia / Echolalia, Mannerism, Gagenhalten, Grasp reflex, Perseveration and Combativeness were found to be absent in the sample population.

**Table 1: Socio-demographic characteristics of the patient population (N=61)**

Variables		N = 61 N (%)
Sex	Male	50 (82.0)
	Female	11 (18.0)
Education	Illiterate	8 (13.1)
	Primary	8 (13.1)
	Secondary	33 (54.1)
	Graduate & above	12 (19.7)
Residence	Rural	42 (68.9)
	Urban	13 (21.3)
	Suburban	6 (9.8)

**Table 2(a): Clinical characteristics of the patient population (N = 61)**

Variables	Mean ± SD
Age of onset (years)	27.36 ± 7.09
Duration of illness (years)	4.22 ± 3.63
Drug free duration (months)	15.32 ± 14.94

**Table 2(b): Clinical characteristics of the patient population (N= 61)**

Variables	N (%)	
History of drugs	Absent	22 (36.1)
	Present	39 (63.9)
Diagnosis	Paranoid	23 (37.8)
	Undifferentiated	34 (55.7)
	Catatonic	1 (1.6)
	Others	3 (4.9)

**Table 3(a): Prevalence of catatonic signs and symptoms in schizophrenic patients (in entire sample)**

		N = 61	Catatonic signs and symptoms (Prevalence) n (%)
Diagnosis	Paranoid	23	1 (1.6)
	Undifferentiated	34	21 (34.1)
	Catatonic	1	1 (1.6)
	Others	3	0 (0)
	Total	61	23 (37.3)

**Table 3(b): Prevalence of catatonic signs and symptoms in individual subtypes of schizophrenia patients (as per diagnosis)**

Diagnosis	N = 61	Catatonic signs present	%
Paranoid	23	1	4.3
Undifferentiated	34	21	61.8
Catatonic	1	1	100.0
Others	3	0	0

**Table 4: Comparison of socio-demographic and clinical variables (categorical) between patients with and without catatonic signs and symptoms**

Variables		Catatonic signs & symptoms		x <sup>2</sup> (df=1)	P
		Absent (N=38) N (%)	Present (N=23) N (%)		
Sex	Male	34 (89.5)	16 (69.6)	3.84	<0.05
	Female	4 (10.5)	7 (30.4)		
Diagnosis	Paranoid	22 (57.9)	1 (4.3)	22.74	<0.001
	Undifferentiated	13 (34.2)	21 (91.3)		
	Catatonic	0 (0)	1 (4.3)		
	Others	3 (7.9)	0 (0)		

**Table 5: Group difference of socio-demographic and clinical variables (continuous) between patients with and without catatonic signs and symptoms**

Variables	Catatonic signs and symptoms		t	P
	Absent N = 38 (M ± SD)	Present N = 23 (M ± SD)		
PANSS positive scale total	21.26 ± 3.78	19.21 ± 6.28	1.413	NS

PANSS negative scale total	19.76 ± 5.28	27.08 ± 6.02	-4.977	< 0.001
PANSS general psychopathology total	35.23 ± 7.43	40.39 ± 7.97	-2.554	<0.01
PANSS total score	76.26 ± 13.41	86.69 ± 15.51	-2.774	<0.01

NS = Non significant

PANSS = Positive and negative Syndrome Scale (Key et al. 1987)

**Table 6: Distribution of each catatonic sign in schizophrenia**

Catatonic signs	n (%)
1. Negativism	16 (26.2)
2. Immobility/Stupor	14 (22.9)
3. Mutism	13 (21.3)
4. Staring	13 (21.3)
5. Rigidity	12 (19.7)
6. Posturing/catalepsy	11 (18.0)
7. Mitgehen	7 (11.5)
8. Ambitendency	5 (8.2)
9. Stereotype	5 (8.2)
10. Excitement	4 (6.6)

**DISCUSSION:**

Rates of catatonia among schizophrenic patients have varied widely in different studies. It is reported to occur in 10% - 37.7% of adult patients with major psychiatric disorders.1,2 A challenging question concerns changes in the rate of catatonia over time but differences in methodology limit definitive answers. In our study, the prevalence of catatonic signs in drug naïve/drug free persons suffering from schizophrenia was found to be 37.3%, which is in accordance with the finding of Cernovsky.4 In the study by Cernovsky et al. the sample was almost double than the current study, was a prospective study and 40.2% of schizophrenic patients were found to have catatonic features. Although studies reviewed by Stompe 6 and colleagues showed a significant decline in catatonic schizophrenia, consistent evidence of decline across investigations could not be demonstrated. However, studies of changes in the rate of catatonic schizophrenia have demonstrated an average decrease of 57% during the twentieth century. Moreover, different studies have used different diagnostic criteria for diagnosing catatonia. In accordance with the standardized instrument used for the index study, the presence of two or more signs was considered diagnostic of catatonia. This is less stringent than that of another criteria asking for at least four signs.6 The methodological differences among studies of catatonia remain significant and underscore the lack of consensus on the definition of catatonia. Investigators have used the DSM, ICD, or Leonhard systems for diagnosing catatonia and underlying disorders, resulting in different rates. Differences in assessment techniques, definitions of symptoms, and thresholds for diagnosis have also been a limiting factor. Moreover, cross-sectional surveys of the incidence or prevalence of catatonia may provide an incomplete picture leading to underestimates of its occurrence in association with other disorder.

This study was conducted in a tertiary level psychiatric setup in a developing country. It has been found that significant differences in results also stem from the choice of population studied. For example, there is consistent evidence that catatonia is diagnosed more often in developing nations7,8,9 and in chronic institutional settings10 as replicated in the present study where mean duration of illness was 4.22 (±3.63) years.

In the current study significant difference was observed among patients with and without catatonic signs in terms of total PANSS Negative Scale (p < 0.001). It reflects that from a dimensional perspective, motor features play a central role in the relationship among syndromes of psychoses. Positive and negative motor syndromes are interrelated among themselves, and in turn they are closely but differentially related to negative mood and disorganization syndromes.11 Significant difference was also noted in terms of total PANSS general psychopathology scale (P = 0.01) and PANSS Total Score (P = 0.007), which was in contradiction to the finding of Peralta et al. (2001) where the psychotic syndromes were not correlated with either positive motor syndrome (comprised Parakinesia, mannerism and agitation) or negative motor syndrome (comprised of stupor, mutism and negativism).

This study has also tried to reflect the frequency of various catatonic

signs and symptoms among different subtypes of schizophrenia other than catatonic subtypes also and it was found that catatonic signs were more frequently present in undifferentiated subtype in addition is catatonic subtype. Several other studies have also shown that catatonia is not consistently diagnosed during episodes in the same patient and that patients with other subtypes of schizophrenia may develop catatonic signs on occasion.

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