



Catatonia in inpatients with psychiatric disorders: A comparison of schizophrenia and mood disorders



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ABSTRACT

This study aimed to evaluate the symptom threshold for making the diagnosis of catatonia. Further the objectives were to (1) to study the factor solution of Bush Francis Catatonia Rating Scale (BFCRS); (2) To compare the prevalence and symptom profile of catatonia in patients with psychotic and mood disorders among patients admitted to the psychiatry inpatient of a general hospital psychiatric unit. 201 patients were screened for presence of catatonia by using BFCRS. By using cluster analysis, discriminant analysis, ROC curve, sensitivity and specificity analysis, data suggested that a threshold of 3 symptoms was able to correctly categorize 89.4% of patients with catatonia and 100% of patients without catatonia. Prevalence of catatonia was 9.45%. There was no difference in the prevalence rate and symptom profile of catatonia between those with schizophrenia and mood disorders (i.e., unipolar depression and bipolar affective disorder). Factor analysis of the data yielded 2 factor solutions, i.e., retarded and excited catatonia. To conclude this study suggests that presence of 3 symptoms for making the diagnosis of catatonia can correctly distinguish patients with and without catatonia. This is compatible with the recommendations of DSM-5. Prevalence of catatonia is almost equal in patients with schizophrenia and mood disorders.

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1. Introduction

The diagnosis and nosology of catatonia has been the subject of much debate with the advent of new versions of the official classificatory systems. Catatonia has been traditionally associated with schizophrenia, but since the mid-1970s several influential studies have demonstrated that catatonia is primarily seen in conjunction with mood disorders, and is also common as a part of neurological, medical and drug/substance related conditions (Taylor and Fink, 2003; Fink et al., 2010; Bartolommei et al., 2012; Weder et al., 2008). The association of catatonia with mood and organic disorders (in addition to schizophrenia) was duly highlighted for the very first time in the Diagnostic and Statistical Manual, fourth edition (American Psychiatric Association, 1994) and the ICD-10 (World Health Organization, 1992). The DSM-5 (American Psychiatric Association, 2013) has made several other changes in order to give due importance to the syndrome (Tandon et al., 2013; Heckers et al., 2010). DSM-5 includes a list of 12 catatonic symptoms, three or more of which are required for the diagnosis of catatonia (American Psychiatric Association, 2013).

Till recently the diagnosis of catatonia required the presence of two or more catatonic symptoms and signs (Taylor and Fink, 2003; Bartolommei et al., 2012; American Psychiatric Association, 1994). In an influential study of catatonia mainly among patients with psychotic disorders, Peralta and Cuesta (2001) empirically developed a list of 11 most discriminant signs and symptoms of the syndrome. A diagnostic threshold set at three or more signs yielded a sensitivity of 100% and specificity of 99% for the diagnosis of catatonia. However, since the number of patients with mood disorders were few in this study, it is not clear whether the same diagnostic threshold could be used for mood disorders.

Whether the presentation of catatonia differs among those with schizophrenia or mood disorders is yet another unresolved issue. Although uniform diagnostic criteria have been used in the DSM-5, there is some suggestion that acute-stuporous presentations are more common in mood disorders, while catatonia in schizophrenia is of chronic type and dominated by psychomotor phenomena (Rosebush and Mazurek, 2010; Ungvari et al., 2010). Factor analysis of catatonic symptoms has been used to try and distinguish presentations in schizophrenia and mood disorders.

Several factor analytic studies of catatonia have delineated one to seven factors that are believed to constitute the catatonic syndrome (Taylor and Fink, 2003; Krüger et al., 2003; Ungvari et al.,

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2007; Ungvari et al., 2010). In line with findings of other studies, factor-structures of catatonia obtained among those with schizophrenia, depression and mania have been largely similar, with one significant exception. This involved an exploratory factor analysis of catatonia among 164 patients by Krüger et al. (2003). Four factors were identified in this study. These included catatonic excitement, abnormal involuntary movements/mannerisms, disturbance of volition/catalepsy, and catatonic inhibition. Comparisons between different diagnostic groups revealed that catatonic schizophrenia was associated mainly with the abnormal involuntary movements/mannerisms and volitional disturbance/catalepsy factor; mania was represented chiefly by the factor of catatonic excitement, while depression was characterized by the factor of catatonic inhibition.

Prompted by these considerations, the present study aimed to (1) evaluate the symptom threshold for making the diagnosis of catatonia; (2) to compare the prevalence of catatonia in patients with psychotic and mood disorders; (3) to compare the symptom profile of catatonia in those with psychotic and mood disorders; and, (4) to extract factor structure of symptoms derived from the Bush Francis Catatonia Rating Scale (BFCRS) (Bush et al., 1996).

2. Material and methods

The study was approved by the Institute Ethics Review Committee and all the patients were recruited after obtaining written informed consent from them and their family members, who accompanied the patients and stayed with them during the hospitalization. This prospective study was conducted in the psychiatry inpatient services of a general hospital psychiatric unit of a multispeciality tertiary care hospital. The hospital caters to a large part of the north India. Patients can walk-in to the psychiatric outpatient on their own or are referred from other centers and other specialists. Most of the patients who attend the outpatient suffer from affective disorders and anxiety and stress related disorders. Most of the patients are managed on the outpatient basis. The inpatient facility is available in the form of 24 beds for patients with primary psychiatric disorders (psychiatry inpatient unit). Patients with primary substance use disorders are admitted to a separate inpatient facility (i.e., drug Deaddiction and treatment center). Patients with dual diagnosis are admitted to either of these wards. Usually, patients with primary psychiatric disorders with acute disturbances are admitted to the inpatient unit for period varying from 2 weeks to 3 months with an average duration of inpatient stay of 1 month. During the inpatient stay, all the patients are accompanied by their family members. Most of the patients admitted into the inpatient unit are adults (i.e., aged between 18–65 years) and suffer from either psychotic disorders or affective disorders. Besides these disorders, few patients with other disorders like obsessive compulsive disorder and dissociative disorders are also admitted. All patients admitted to the psychiatric inpatient unit between January and December 2011 were evaluated on the day of admission for the presence of catatonic features by using the BFCRS (Bush et al., 1996) by a qualified psychiatrist. The BFCRS is a 23-item clinician rated scale. The initial 14 items are used for screening for catatonia. It has a high reliability. These 14 items of the BFCRS is known as Bush Francis Catatonia Screening Instrument (BFCSI). According to the BFCSI, a diagnosis of catatonia is made when a patient has two or more features for more than 24 h. For assessing the severity of catatonia all the 23 items were rated on a 4 point scale (0–3). Additionally, the diagnosis of affective and psychotic disorders was made as per ICD-10 criteria (World Health Organization, 1992) following a detailed semi-structured evaluation supervised by the consultant psychiatrist of the treating team. For this study, BFCRS was applied

to initial 10 patients by 2 psychiatrists. Inter-rater reliability for the scale was evaluated in the initial 10 patients and it was found to be high (alpha value of 0.97) and Pearson's correlation coefficient of 0.95 ($p < 0.001$).

2.1. Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences, version 14 (SPSS-14). Cluster analysis, discriminant analysis, receiver operating curve (ROC) analysis, sensitivity, specificity, positive predictive value and negative predictive values were calculated to define the threshold for symptoms/signs required to make a diagnosis of schizophrenia. Principal component analysis was carried out to extract main factors derived from the BFCSI. Optimal number of factors was determined based on the Kaiser-Guttman Rule (Jolliffe, 2002). Factors with Eigen value of more than one were included initially. A loading of ≥ 0.4 was considered as significant to render the extracted factors meaningful and interpretable. When the variable had a loading of more than 0.40 on two or more factors, it was assigned to the factor with higher loading.

3. Results

3.1. Sociodemographic profile

The study included 201 patients. The mean age of the study sample was 35.9 years (SD=15.8; range 9–86), with male constituting about three-fifth of the study-sample. More than half of the participants were married, employed, Hindu by religion, came from nuclear families and rural backgrounds (Table 1).

3.2. Clinical profile

Psychotic disorders ($N=80$; 40%) were the most common diagnoses in the inpatients studied, with schizophrenia ($N=67$; 33%)

Table 1
Socio-demographic and clinical profile of the study sample.

Variables	N (%)
Gender: male/females	121 (60.2%)/80 (39.8%)
Age in years	35.9(SD= 15.8)
Education: above matric	130 (64.7%)
Family: nuclear/ non-nuclear	125 (62.2%)/76 (37.8%)
Locality: urban/rural	98 (48.7%)/103 (51.3%)
Marital status: married/non-married	120 (59.7%)/81 (40.3%)
Religion: hindu/ non-hindus	136 (67.7%)/65 (32.3%)
Occupation: unemployed	75 (37.3%)
Clinical diagnosis	
Schizophrenia	67 (33.3%)
Paranoid schizophrenia	38 (18.9%)
Undifferentiated schizophrenia	24 (12%)
Catatonic schizophrenia	5 (2.5%)
Other psychoses (psychosis unspecified, PDD, schizoaffective, schizotypal, ATP)	13 (6.5%)
BPAD	47 (23.5%)
BPAD mania	18 (9%)
BPAD depression	21 (10.5%)
BPAD mixed	8 (4%)
RDD/MDD	56 (27.9%)
Obsessive compulsive disorders (OCD)	09 (4.5%)
Anxiety disorders other than OCD	09 (4.5%)
Other diagnoses (F 10.24, CDD)	2 (1%)

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