

The frequency of catatonic syndrome in an acute psychiatric ward

Rozália Takács^{1,2}, Márton Asztalos^{2,3}, Gabor S. Ungvari⁴,
Anna Z. Antosik-Wójcińska⁵, Gábor Gazdag^{6,7}

¹ Tóth Ilona Medical Service, Psychiatric Outpatient Service, Csikó sétány 9.,
1213 Budapest, Hungary

² School of Doctoral Studies, Semmelweis University, Budapest, Hungary

³ Department of Psychiatry, Aalborg University Hospital, Aalborg, Denmark

⁴ University of Notre Dame Australia/Graylands Hospital, Perth, Australia

⁵ Department of Affective Disorders, Institute of Psychiatry and Neurology, Warsaw, Poland

⁶ 1st Department of Psychiatry and Psychiatric Rehabilitation,
Jahn Ferenc Hospital, Budapest, Hungary

⁷ Department of Psychiatry and Psychotherapy, Semmelweis University Medical School,
Budapest, Hungary

Summary

Aim. The aim of this prospective study was to determine the prevalence of the catatonic syndrome in a cohort of patients admitted to acute psychiatric units in Hungary.

Method. Patients admitted to the acute inpatient unit of the Center of Psychiatry and Addiction Medicine, Szent István and Szent László Hospitals in a 4-month period were screened for catatonic signs and symptoms. Catatonic signs/symptoms were scored according to both the DSM-5 diagnostic criteria and the *Bush–Francis Catatonia Rating Scale* (BFCRS). Clinical diagnoses were established using the *Structured Clinical Interview for DSM-IV Disorders* (SCID), while cognitive performance was estimated with the Clock Drawing Test and the *Mini-Mental State Examination* (MMSE).

Results. During the study period, 342 patients were admitted to the above-mentioned acute inpatient units. The prevalence figures for the catatonic syndrome were 8.55% and 5.02% according to the BFCRS and the DSM-5, respectively.

Conclusions. The prevalence of catatonic syndrome in an acute inpatient setting is within the broad range of figures reported in the literature. The difference between the standardized assessment (BFCRS) and routine clinical judgment (DSM-5) is noteworthy and suggests that a significant minority of catatonic patients might not be identified in clinical practice.

As acute catatonia can be effectively treated, and early treatment could prevent potentially life-threatening complications, recognition of catatonic symptoms is vitally important.

Key words: catatonia, prevalence, DSM-5, *Bush–Francis Catatonia Rating Scale*

Introduction

The concept, clinical features, and nosological status of catatonia, which can be broadly defined as a syndrome characterized by a variety of behavioral, autonomic, and psychomotor abnormalities [1], has undergone a number of changes since it was first described [2]. Kahlbaum posited catatonia as a distinct disease entity, but a review of his 26 cases clearly shows that he described a syndrome [3]. The ubiquitous nature of catatonic signs and symptoms, or the catatonic syndrome, had already been widely accepted before the turn of the twentieth century [4, 5].

Persistent catatonic syndromes with poor prognosis arising in the context of psychoses were included in Kraepelin's nosological system as a putative subtype of dementia praecox (schizophrenia) [6]. Glossing over Kraepelin's nuanced description of catatonic schizophrenia, mainstream psychiatry erroneously equated catatonia with schizophrenia in the subsequent decades [7, 8]. Starting from the 1970s, catatonia as a syndrome was increasingly re-discovered, appearing in conjunction with affective disorders [9], and a host of neurological, medical [10], and drug/substance abuse-related conditions [11]. The association of catatonia with medical and psychiatric conditions other than schizophrenia was reflected in ICD-10 (1992) [12] and DSM-IV [13] (where 'catatonia' and 'catatonic syndrome' are used interchangeably. Also, for the sake of brevity, the term 'catatonic symptoms' refers to 'catatonic signs and symptoms').

DSM-5 [14] takes these conceptual changes into account by broadening the concept of catatonia. A 'catatonia specifier' has been created, referring to catatonic syndromes associated with any psychiatric disorders including neurodevelopmental, psychotic, bipolar, and depressive disorders. In addition, a semi-independent category, 'Unspecified Catatonia', has been established with a view to exploring the possibility of catatonia as a distinct diagnostic category ('idiopathic catatonia') [15], returning to Kahlbaum's original ideas. The category of 'Catatonia due to a Medical Condition' was retained from DSM-IV.

Despite the recent upsurge in the interest in catatonia, it is still under-recognized in clinical practice. For instance, clinicians identified catatonia in 2% of a sample, compared with 18% diagnosed by members of a research team in the same sample [16].

Data on the prevalence of catatonia vary widely depending on the characteristics of the study design, measurement tools and patient population [17]. However, there is a consensus that the prevalence of catatonia in acute psychiatric patients is between

7 [18] and 17% [19]. The highest prevalence of catatonia (15–17%) was found in patients referred to a psychiatric intensive care unit [20]. Stuivega and Morrens [21] reported a prevalence of 63.1%, but this is an outlier compared to the rest of the literature. A possible explanation for this extremely high rate is that patients in the most acute phase of their illness in a psychiatric intensive care unit were included and assessed immediately after admission.

With notable exceptions [22, 23], most experts opine that catatonia most frequently appears in conjunction with affective disorders diagnosed according to modern diagnostic criteria [1, 24, 25]. The reliable detection of catatonia poses a challenge to researchers and clinicians alike because the diagnostic criteria and assessment tools are still not universally agreed upon [26]. *The Bush–Francis Catatonia Rating Scale* (BFCRS) is used most frequently in research [18]. DSM-5 lists 12 catatonic symptoms, 3 or more of which must be present to diagnose catatonia [14]. Stuivenga and Morrens [21] diagnosed the same 130 acutely ill psychiatric patients according to the BFCRS, DSM-IV and DSM-5 immediately after admission, and reported prevalence rates of 63%, 25% and 17%, respectively. This wide variation underlines the importance of clear, unified diagnostic criteria for catatonia.

There are two aspects of catatonic syndrome that have received scant attention in the literature. Neither the subjective experiences of catatonic patients, nor their cognitive performance have been studied in a systematic manner.

Despite of the relatively high frequency of catatonic symptoms and signs, there is a paucity of publications on catatonia in the Eastern European literature. For instance, apart from the papers by the authors of the current study, only 3 articles have been published by Hungarian authors in the last 15 years (a description of 3 cases of catatonia treated with aripiprazole [27], a review on the overlap of catatonia and neuroleptic malignant syndrome [28], and on movement disorders in psychiatric disorders [29]).

The aim of this prospective study was to determine the prevalence and symptomatology (including the cognitive profile) of catatonic syndrome in patients referred to the acute psychiatric ward of a general hospital in Budapest, Hungary. The cognitive performance of a geriatric subset of the current sample has been reported elsewhere [30].

Material and method

Catatonic signs and symptoms were scored according to both the DSM-5 diagnostic criteria and *the Bush–Francis Catatonia Rating Scale* (BFCRS). Clinical diagnoses were established using *the Structured Clinical Interview for DSM-IV Disorders* (SCID), the Clock Drawing Test and *the Mini-Mental State Examination* (MMSE).

As part of the comprehensive psychiatric assessment on admission, all patients admitted to the Center of Psychiatry and Addiction Medicine (CPAM), Szent István and Szent László Hospitals from 1 April 2015 to 31 July 2015 were screened for catatonic symptoms. The CPAM has 293 beds, including 64 acute adult psychiatric beds, 88 for addiction medicine and 141 for psychiatric rehabilitation. The CPAM covers a catchment area of approximately 330,000 people. *The Bush–Francis Catatonia Screening Instrument* (BFCSI) was used to assess catatonic symptoms. If two or more catatonic symptoms were scored on the BFCSI, the severity of catatonia was rated with the BFCRS.

The BFCRS is a 23-item rating scale that provides operationalized definitions of catatonic symptoms. The BFCSI consists of the first 14 items of the BFCRS and is used as a screening instrument. Catatonic symptoms observed over the 24-hour period preceding the examination are rated from 0 to 3. The sum score on the BFCRS ranges from 2 to 60 (some catatonic features do not co-occur and exclude each other).

Catatonia was independently and simultaneously scored according to both the DSM-5 diagnostic criteria (RT) and the BFCRS (MA) by two raters. Inter-rater reliability between the two raters was assessed using both sets of criteria on the first 30 patients, yielding an excellent kappa value of 0.9 for inter-rater reliability.

The principal author made the clinical diagnoses using the validated Hungarian versions of *the Structured Clinical Interview for DSM-IV Disorders* (SCID I-II) [31, 32]. Basic cognitive functions were assessed using the Clock Drawing Test [33] and *the Mini Mental State Examination* (MMSE) [34].

The study protocol was approved by the Research Ethics Committee of the Szent István and Szent László Hospitals. All participants gave written informed consent.

Statistical methods

Descriptive data were calculated as means and standard deviations or percentages, as appropriate.

Results

During the study period, 342 patients were admitted to the CPAM. Four patients were discharged before the evaluation; thus 338 patients were included in the study. The mean age of the sample was 53.02 ± 5.8 years and 29% of patients were aged over 65. In the study sample, there was a slight predominance of women (51.5% vs. 48.5%). The prevalence figures for catatonia were 8.55% and 5.02% according to the BFCRS and DSM-5, respectively. The mean age of the catatonic patients was 57.6 ± 3.2

years; 41.4% were men. The mean score on the BFCRS was 8.5 +/- 2. The diagnostic distribution in the catatonic group is presented in Table 1.

Table 1. **Diagnostic distribution of patients presenting with catatonic syndrome**

Diagnosis	Number of patients
Schizophrenia spectrum disorder	8 (27.5%)
Affective disorder	5 (17.2%)
Major neurocognitive disorder combined with a medical condition	4 (13.8%)
Catatonia due to a medical condition	3 (10.3%)
Major neurocognitive disorder combined with an affective disorder	3 (10.3%)
Psychoactive substance withdrawal syndrome	2 (6.8%)
Personality disorders	2 (6.8%)
Major neurocognitive disorder	1 (3.4%)
Alcohol withdrawal syndrome	1 (3.4%)
Down syndrome	1 (3.4%)

The prevalence of catatonic symptoms according to the BFCRS was as follows: immobility/stupor and staring – 48.3%; excitement and passive obedience (German: Mitgehen) – 38% each; mutism, mannerisms, rigidity, and negativism – 31.1% each; catalepsy and perseveration – 27.6% each; verbigeration – 20.7%; automatic obedience – 17.2%; grimacing, withdrawn behavior, impulsivity, and grasp reflex – 13.8% each; waxy flexibility, muscle resistance (German: Gegenhalten) and ambitendency – 10.3% each; and vegetative disturbance – 6.9% (Figure 1).

The mean values of the MMSE and the CDS were 18.8 +/- 2.1 and 5.6 +/- 1.5 points, respectively. Eight patients with catatonia (27%) were diagnosed with major cognitive disorder; the corresponding figure was 17% in the whole sample.

Discussion

In this study, the prevalence of catatonia (8.55% according to the BFCRS) in consecutively screened psychiatric inpatients was within the range of 2.7–17% reported in the literature [35]. Schizophrenia spectrum disorders were most frequently associated with catatonia.

As expected, catatonia was diagnosed less frequently according to the DSM-5 than the BFCRS criteria, confirming the superiority of a comprehensive, systematic, and standardized assessment over routine clinical interview. In addition, DSM-5 covers significantly fewer catatonic symptoms than the BFCRS. Symptoms that are absent

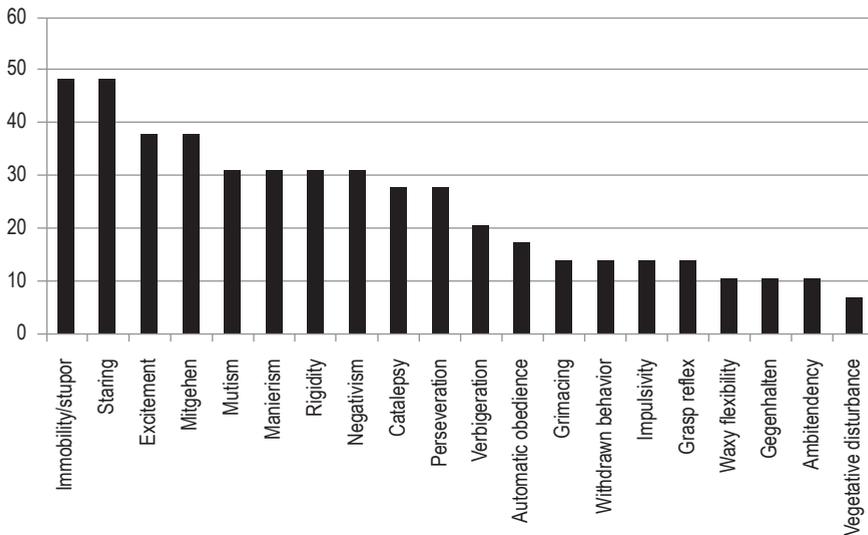


Figure 1. The prevalence of catatonic symptoms according to the BFCRS (%)

from DSM-5 (including staring, Mitgehen, perseveration, verbigeration, automatic obedience, withdrawn behavior, impulsivity, grasp reflex, Gegenhalten, and ambitendency) were found in 10–48% of patients in this study, indicating the need for an evidence-based consensus regarding the symptomatology of catatonia. These symptoms were found to have high specificity and sensitivity [23]. As symptoms such as rigidity, staring, automatic obedience, and withdrawal have been reported with high frequency in this and other studies [36, 37], their absence from the DSM-5 diagnostic criteria suggests that a revision of these criteria is warranted.

In accordance with most of the literature, the retarded type of catatonia [23] dominated our sample. One possible explanation for this finding could be that catatonic agitation is difficult to differentiate from other types of restlessness and is therefore diagnosed less frequently.

In clinical practice, the use of standardized catatonia questionnaires is recommended to improve the recognition of catatonia. As acute catatonia can be effectively treated [38] and early treatment could prevent potentially life-threatening complications such as thromboembolism, pneumonia and dehydration, early recognition of catatonic symptoms is vital [1].

Catatonia due to a medical condition, frequently referred to as ‘organic catatonia’ [39], was present in 24 (14%) of our catatonic patients. Catatonic symptoms in such cases occur in the context of a variety of medical and neurological diseases such as hyperparathyroidism [40], diabetic ketoacidosis [41], hepatic dysfunction [42], and Wilson’s disease [43], to name just a few. As the treatment of ‘organic catatonia’

needs a thorough organic work-up and subsequently requires the management of the underlying medical or neurological condition, its early recognition is paramount in 'acute' psychiatric settings.

Major neurocognitive disorder was diagnosed in 27% of the patients with catatonia while the corresponding figure was minimally lower in the total sample. Because of the diagnostic heterogeneity of the sample, no conclusion on the cognitive aspect of catatonia could be drawn from the results of this study.

Limitations of the study

The main limitation of this study is its cross-sectional design and the relatively small sample size. Important management and background variables such as marital status, education level, occupation, recent stressful life events, psychiatric and family history, and the therapeutic atmosphere of the admission ward were not recorded.

Conclusions

1. In line with previous findings, the frequency of catatonic syndrome was 8.55% among consecutively screened patients acutely admitted to the psychiatric unit of a general hospital.
2. Catatonia was most frequently associated with schizophrenia spectrum disorders in this sample.
3. Catatonia was more often diagnosed using the BFCRS, a standardized catatonia rating scale, than the DSM-5 diagnostic criteria in routine clinical assessment.
4. The retarded type of catatonia dominated the current sample.
5. Catatonia associated with a medical condition ('organic catatonia') was diagnosed in 14% of the whole catatonic cohort.

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Address: Gábor Gazdag
1st Department of Psychiatry and Psychiatric Rehabilitation
Jahn Ferenc Hospital
Hungary, 1204 Budapest, Kövesút 1.
e-mail: gazdag@lamb.hu