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# Prevalence and symptomatology of catatonia in elderly patients referred to a consultation-liaison psychiatry service

## Abstract

**Objectives:** To determine the prevalence and clinical correlations of catatonia in patients aged over 65 years who are referred to a consultation-liaison service within a regional area of Australia. Additionally, to examine if the use of standardised screening tools is likely to change the rate of diagnosis of catatonia within the consultation-liaison service. **Methods:** One hundred and eight referrals from general hospital wards were assessed using the Bush-Francis Catatonia Screening Instrument (BFCSI) and associated examination; each consented patient was screened for catatonic symptoms. If two or more signs were present on the BFCSI, then severity was rated using the Bush-Francis Catatonia Rating Scale. These clinical characteristics were compared with their socio-demographic and medical data. **Results:** Prevalence of catatonia was 5.5%. The most common symptoms appeared to be rigidity, posturing and immobility (67% of cases), and were elicited through routine psychiatric examination. **Conclusions:** Routine psychiatric history and examination are likely sufficient to elicit catatonic signs in a consultation-liaison setting. Standardised screening examination may be more suited for conducting research or for use when examining for catatonia in psychiatric inpatient settings.

## Disciplines

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# Prevalence and Symptomatology of Catatonia in Elderly Patients Referred to a Consultation-Liaison Psychiatry Service

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## **Abstract**

*Objective:* To determine the prevalence and clinical correlations of catatonia in patients over 65 years referred to a Consultation-Liaison service for a regional area of Australia. Additionally, it examined if the use of standardised screening tools is likely to change rate of diagnosis of catatonia in the Consultation-Liaison service.

*Method:* One hundred and eight referrals from general hospital wards were assessed using the Bush-Francis Catatonia Screening Instrument (BFCSI) and associated examination, each consented patient was screened for catatonic symptoms. If two or more signs were present on the BFCSI, then severity was rated using the Bush-Francis Catatonia Rating Scale (BF CRS). These clinical characteristics were compared with their socio-demographic and medical data.

*Results:* Prevalence of catatonia was 5.5%. Most common symptoms appeared to be rigidity, posturing, and immobility (67% of cases) and were elicited through routine psychiatric examination.

*Conclusions:* Routine psychiatric history and examination are likely sufficient to elicit catatonic signs in a Consultation-Liaison setting. Standardised screening examination may be more suited for conducting research or for use when examining for catatonia in psychiatric inpatient settings.

**Keywords:** Catatonia, Consult-Liaison Psychiatry, Psychosomatic Medicine

## **Introduction**

Catatonia is a reversible syndrome characterized by an assortment of motor, behavioural and autonomic abnormalities, which occur in the context of psychiatric, neurological and general medical conditions, or secondary to effects from medications or drugs of abuse (1, 2).

Catatonia has been recognized in psychiatric settings for some time and despite falling rates of diagnosis in the latter half of the 20<sup>th</sup> century, is now generally accepted to be more common in psychiatric inpatient settings than previously thought (3). However, it is not well researched in the general medical population, despite many putative risk factors for catatonia being prevalent in this group. Prevalence figures of 1.6%, 1.82% and 1.97% were found in three previous clinical studies studying adult populations referred to Consultation-Liaison services (4-6). In the over-65 age group, significantly increased prevalence rates of catatonia have been reported, with one recent retrospective Spanish study finding a rate of 8.9% (7). The authors of this study hypothesised that increased numbers of vascular risk factors, presence of structural brain lesions and accrual of cognitive impairments contributed to the higher rate in the elderly.

This high rate of catatonia, if accurate, would merit practice changes in Consultation-Liaison setting to routinely screen for catatonia with a standardised measure. Thus, the aims of the present study were to determine the frequency, symptomatology and clinical correlations of catatonia in patients over 65 years old referred to our Consultation-Liaison service, and to determine if the use of a routine standardised screening tool was indicated.

## **Materials and Methods**

Participants were sourced from a regional Consultation-Liaison service covering general medical, surgical and geriatric beds across six closely-located hospitals of varying size (20-550 beds). All individuals over the age of 65 who were referred to Consultation-Liaison Psychiatry Services over

a six-month period in 2014 were approached to be participants during psychiatric assessment taking place in response to the referral. Informed consent was obtained from the participant where possible, with carer consent obtained in those unable to consent themselves. Ethics approval for this study was granted from the local ethics committee (Ethics approval: HE13/544).

108 participants (54 male, 54 female) were enrolled in the study from 169 approached – 45 declined or were unable to give informed consent, while 12 were unable to be recruited due to discharge from hospital before consent could be obtained.

All patients who consented to the study were screened for signs of catatonia using the Bush Francis Catatonia Screening Instrument (BFCSI) and its associated examination, which assesses 14 signs seen in the catatonic syndrome: excitement, immobility/stupor, mutism, staring gaze, posturing/catalepsy, grimacing, echophenomena, stereotypies, mannerisms, verbigeration, rigidity, negativism, waxy flexibility and withdrawal. The participants needed to score at least two on the BFCSI to be considered a positive result (8). If the patient were considered to have catatonia, then the Bush Francis Catatonia Rating Scale (BFCRS) was used to assess the severity of catatonia. The BFCRS includes the 14 signs from the BFCSI plus nine other signs (impulsivity, automatic obedience, passive obedience, Gegenhalten, ambitendency, grasp reflex, perseveration, combativeness and autonomic abnormality), and has been demonstrated as a reliable tool in the recognition of catatonia and its response to treatment in the psychiatric setting (8, 9).

In addition to the results of the catatonia rating scales, clinical information was collected including socio-demographic data, past medical and psychiatric history, current medications, as well as current investigation results (including imaging, EEG and pathology) and medical diagnosis at time of discharge. Examination findings from the BFCSI and BFCRS, when positive, were recorded.

## **Results**

The average age of participants was 75 years old (range 65- 94). 35% of participants had no previous psychiatric history and 92% had at least one vascular risk factor. Six participants were positive on the BFCSI, giving a prevalence of 5.5%.

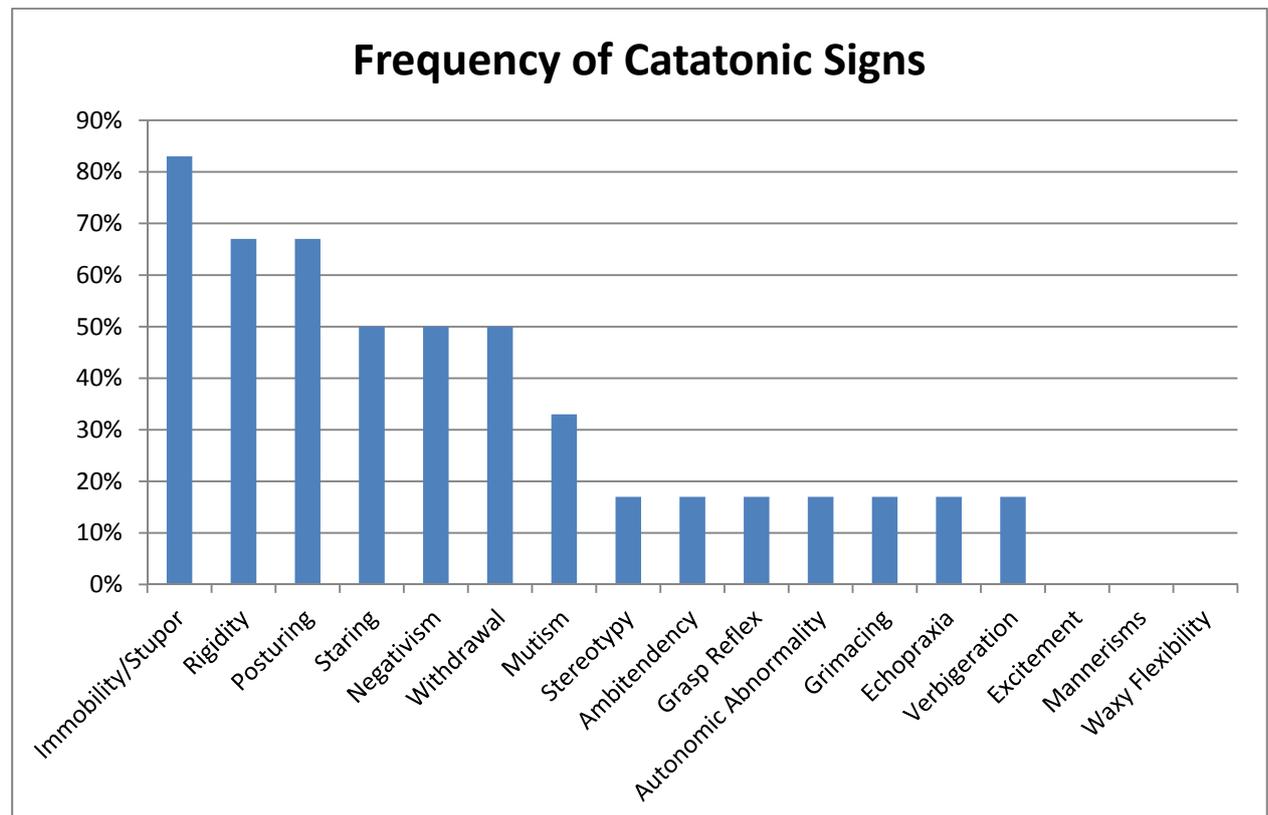
The six positive results consisted of two males and four females – clinical details are in Table 1. They ranged in age from 68 to 90, with a mean age of 77. All patients were seen by the Consultation- Liaison Service within two weeks of presentation to hospital (mean five days). The number of symptoms on the BFCSI varied between three and eight, with an average of five symptoms. The severity score found on the BFCRS had a range of 14 to 26, with an average of 20. It was found that five patients had immobility/stupor (83%), four patients had rigidity (67%), and four had posturing (67%). Three patients had staring (50%), three had negativism (50%), three had withdrawal (50%) and two had mutism (33%). Symptoms which only appeared once out of the six patients were stereotypy, ambitendency, grasp reflex, autonomic abnormality, grimacing, echopraxia, and verbigeration (17%). None of the participants displayed excitement, mannerisms or waxy flexibility at the time of examination (Figure 1).

**Table 1. Clinical characteristics of catatonic patients**

Patient	Age	Sex	Psychiatric History	Vascular Risk Factors	Medical Reason for admission	Medications	BFCSI Score	BFCRS Score
1	75	M	Nil	Hypertension	Progressive supranuclear palsy with associated dementia	Aspirin Pregabalin Levodopa Mirtazapine Valproate Quetiapine Clonazepam	3 (posturing, immobility/stupor, staring. Rigidity excluded due to Parkinsonian symptoms)	12
2	68	M	Nil	Hypertension, Diabetes	HSV encephalitis, L middle cerebral artery stroke	Amlodipine Perindopril Metformin Insulin	4 (posturing, stereotypy, rigidity, negativism)	14

3	69	F	Schizophrenia	Diabetes	Lower limb cellulitis, delirium	Paliperidone Metformin Gliclazide	7 (immobility/stupor, mutism, rigidity, withdrawal, ambitendency, grasp reflex, autonomic abnormality)	15
4	90	F	Depression, vascular dementia	Hypertension, dyslipidaemia	Postural hypotension, falls, constipation, urinary tract infection, delirium	Dabigatran Bisoprolol Sertraline Vitamin D	8 (immobility/stupor, posturing, grimacing, echopraxia, verbigeration, rigidity, negativism, withdrawal)	26
5	78	F	Depression, recurrent delirium	Hypertension, Diabetes	Recurrent urinary tract infection, delirium	Duloxetine Olanzapine	5 (immobility/stupor, staring, posturing, rigidity, negativism)	15
6	80	F	Schizophrenia, dementia	Hypertension, dyslipidaemia	Stroke	Risperidone Metoprolol Warfarin	5 (immobility/stupor, mutism, staring, rigidity, withdrawal)	14

**Figure 1 – Frequency of Catatonic Signs in those scoring 2 or more on Bush-Francis Catatonia Screening Instrument**



## **Discussion**

This observational study of catatonia in a sample of elderly patients referred to the Consultation-Liaison service from hospitals in a regional health service revealed six-month prevalence of catatonia of 5.5%. The most common catatonic symptoms seen in Figure 1 reflect the most common seen in the study from Jaimes-Albernoz et al; they found 100% of catatonic patients had immobility/stupor and staring, 90% had rigidity, 80% had mutism and withdrawal, and 70% had negativism and posturing, amongst other symptoms (7). Similarly, a recent study from Wilson et al found the most common symptoms elicited on the BFCSI were staring, immobility/stupor, and mutism (found in more than half of cases). In the same study, posturing and negativism occurred in slightly less than half of the participants (10).

Therefore, this study has similar results to research performed in general hospital populations and while the literature is limited, the findings of relative prevalence of different catatonic symptoms are similar. While the use of the BFCSI has utility in listing and defining catatonic signs, giving a threshold for diagnosis and later, with the BFCRS, monitoring response to treatment, we would argue that the use of the BFCSI/BFCRS-specific examination (which includes tests for echo phenomena and automatic obedience amongst other symptoms) to identify subtle signs of catatonia did not add to the rate of diagnosis – from the six most common signs observed in our study (rigidity, posturing, immobility, staring, negativism, withdrawal), four could be observed without physical contact with the patient (staring, withdrawal, immobility and posturing) and the other two could be found on Abnormal and Involuntary Movement examination (rigidity, negativism) (11). The relative absence of echo phenomena and automatic obedience mean that there is a low likelihood of specific examinations for these signs uncovering otherwise undiscovered catatonic individuals. This conclusion is similar to that stated by Wilson et al, who concluded that the BFSCI/BFCRS was most useful in more severe cases of catatonia (10).

Strengths of this study include its prospective nature (ie not a retrospective audit of practice) and standardised objective approach, which allows for future study replications to produce comparable findings. Limitations include the potential bias inherent from the requirement for consent (required for local ethics approval), which may have altered the distribution of patient demographics in the overall observable population, as well as providing a possible overestimate of the true prevalence rates (which would be 3.6% if all non-consenting participants were assumed not to have catatonia – a figure that is still higher than that seen in the under-65 age group). Participants were also only recruited from individuals who had been referred to the Consultation-Liaison service – while this result is potentially generalisable to other Consultation-Liaison services, it cannot be used as an estimate of the true prevalence of catatonia in the general hospital population, a figure that can only be determined through a study involving routine screening of all admissions.

Many catatonic participants in this study had diagnoses of delirium (Table 1). Delirious patients can often display excitement, immobility, mutism, staring, posturing, stereotypy, mannerisms, negativism and withdrawal, with some estimates suggesting that 12.7-30.2% of patients with delirium have catatonic disorder (8, 12). Overlapping catatonia and delirium lead to conflicts in clinical guidelines, as the treatment of choice for catatonia is benzodiazepines. However, there is no evidence for their efficacy in delirium not due to alcohol or benzodiazepine withdrawal (13). Additionally, some antipsychotics, which have been traditionally used in delirium, may worsen catatonia and progress to neuroleptic malignant syndrome (14).

Future prospective studies with larger sample sizes could allow for analysis to determine whether any clinical characteristics act as risk factors for developing catatonia, expanding on previous research (15). In addition, a comparison study comparing inter-rater reliability of routine psychiatric examination and use of the BFCSI/BFCRS would help to conclusively determine whether a standardised examination is needed in this setting.

## **Conclusion**

This study indicates that catatonia is a condition that needs to be considered in the Consultation-Liaison population. Use of a catatonia screening tool is useful in this population, although the BFCSI-specific examination is unlikely to diagnose more cases than can be found through psychiatric history and examination.

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