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EDITORIAL

Catatonia: A deep dive into its unfathomable depths

Peter Phiri, Gayathri Delanerolle, Oliver Hope, Tharangini Murugaiyan, Geoffrey Dimba, Shanaya Rathod, Zukiswa Zingela

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Abstract

This editorial addresses catatonia, a complex neuropsychiatric syndrome characterised by a spectrum of psychomotor disturbances. The editorial seeks to clarify the ambiguous aspects of catatonia, integrating recent research findings, including global studies and diagnostic advancements. It discusses catatonia's clinical manifestations, prevalence, and associated psychiatric and medical conditions, with particular emphasis on its frequent co-occurrence with schizophrenia and mood disorders. The prevalence of catatonia, which varies across psychiatric populations, is illustrated by a significant study conducted in Nelson Mandela Bay, South Africa. This study provides valuable insights into the effectiveness of the Bush-Francis Screening Instrument compared to the Diagnostic and Statistical Manual 5 criteria in diagnosing catatonia. The editorial evaluates treatment approaches, primarily focusing on benzodiazepines and electroconvulsive therapy, and discusses emerging therapeutic strategies. It underscores the importance of robust diagnostic frameworks and early intervention in managing catatonia, as recommended by the latest evidence-based consensus guideline. Furthermore, it suggests future research directions, particularly in exploring the neurobiological and genetic factors of catatonia, to enhance our understanding and improve treatment outcomes. This editorial succinctly aims to demystify catatonia and provide valuable insights for clinicians and researchers in mental health care.

Key Words: Catatonia; Schizophrenia; Neuropsychiatry; Benzodiazepines; Electroconvulsive therapy; Bush-Francis screening instrument; Diagnosis

Core Tip: This editorial illuminates the complex nature of catatonia, emphasising its varied psychomotor symptoms. It highlights challenges in diagnosis, noting the effectiveness of the Bush-Francis screening instrument over the Diagnostic and Statistical Manual 5 criteria, and discusses the syndrome's prevalence and associations with disorders like schizophrenia and mood disorders. Furthermore, it critically examines mainstay treatments such as benzodiazepines and electroconvulsive therapy and advocates for strong diagnostic criteria and prompt intervention. It calls for further research into catatonia's neurobiological and genetic aspects, aiming to advance mental health care outcomes.

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INTRODUCTION

Catatonia, a complex and multifaceted neuropsychiatric condition, manifests through a range of psychomotor abnormalities from hypoactivity to hyperactivity. Its deep entanglement with various psychiatric and medical disorders not only underscores its clinical importance but also complicates its comprehension and treatment. This editorial delves into the diverse aspects of catatonia, encompassing its clinical manifestations, prevalence, distinctive characteristics, and evolving therapeutic approaches. The aim is to demystify catatonia's complexities and offer a clearer understanding of this intriguing condition. By synthesizing the latest research and clinical insights, this review strives to present a thorough and nuanced view of catatonia, ultimately enriching our knowledge and treatment strategies in mental health care.

PRESENTATION

Catatonia exhibits a spectrum of psychomotor abnormalities, encompassing hyperactivity states to hypo-activity manifestations. The classical portrayal of catatonia encompasses catalepsy, waxy flexibility, and stupor, alongside other symptoms like mutism, negativism, and echophenomena[1]. Catatonia has been historically correlated with schizophrenia, and was classed as a subtype of schizophrenia, however catatonic symptoms are also seen in bipolar disorder, major depressive disorder[2], and a range of neurological conditions, both acquired, like encephalitis, and congenital, like autism spectrum disorder[3], as well as other systemic conditions, most frequently autoimmune and inflammatory diseases. Withdrawal syndromes from multiple classes of psychoactive medications have also been associated with catatonia, including benzodiazepines, a mainstay of the treatment of catatonia, and other gamma-aminobutyric acid (GABA) agonists.

PREVALENCE

The prevalence of catatonia portrays a varied landscape, with estimates ranging between 7% to 38% among psychiatric populations, with certain subgroups, showing particularly increased prevalence rates in those with mood disorders or psychosis, learning differences, learning disabilities and cognitive impairment[4,5].

Within the African context, Zingela *et al*'s notable study conducted in Nelson Mandela Bay, South Africa, unveiled a prevalence rate of 18.3% within an acute mental health unit[6]. The authors argued that a wide-ranging prevalence rates, from less than 10% to just above 60%, accentuated the crucial role of effective diagnostic tools in ascertaining accurate prevalence rates.

CHARACTERISTICS

Although, the etiological underpinnings of catatonia remain elusive, it is often associated with a myriad of psychiatric and medical conditions. While no definitive causative process has been identified, potential contributory factors include genetic predispositions, changes in regional activity of areas of the brain, especially those to do with movement initiation

and perception of movement, significant life changes, and certain medical conditions like autoimmune diseases, stroke, encephalitis, delirium, and metabolic abnormalities[2,7].

In schizophrenia, catatonia - which represents itself through complicated disturbances in movement and psychomotor behaviour, is one of six classified types of abnormal motor functions. It envelops a range of motor behaviours including decreased, increased, and abnormal movements, disturbances of volition, and autonomic instability. The intertwined relationship between schizophrenia, mood disorders, other mental disorders and catatonia unveils a layer of complexity, further enriching the clinical tableau of catatonia[8]. The neurobiological framework of catatonia is hypothesised to be rooted in the dysfunction of GABA and glutamate neurotransmitter systems[8,9]. A characteristic pattern is that of hypo and hyperactivity in regions of the brain including the premotor cortex, orbitofrontal cortex and supplementary motor cortex[10]. Differing levels of electrical stimulation to these areas have been shown to disrupt the formation of motor impulses, or the perception of motor function, leading to a paralysis without distress, further correlating the pattern with catatonia[11].

DIAGNOSIS

The diagnosis of catatonia entails a meticulous physical examination, predominantly assessing for waxy flexibility, catalepsy and other hallmark signs of catatonia. The Bush-Francis Catatonia Rating Scale (BFCRS) a 23 items scale rated on a Likert scale of 0-3, and serves as a vital tool for diagnosing catatonia, involving observations of patient behaviour during normal conversation, aggressive head scratching to check for imitation, and several other diagnostic maneuvers [12], as examples, Sienaert *et al*[13] identified seven rating scales in assessing catatonia in clinical settings, namely the Modified Rogers Catatonia Scale, the Rogers Catatonia Scale, the Northoff Catatonia Rating Scale (NCRS), the Braunig Catatonia Rating Scale (BCRS), the Kanner Scale and of course, the Bush Francis Catatonia Rating Scale. Of these, the BFCRS, NCRS and BCRS were identified for their reliability in varied populations[13]. Zingela *et al*[6,14] utilised three diagnostic instruments, namely the Bush Francis Screening Instrument (BFCSI), the BFCRS, and the Diagnostic and Statistical Manual 5 (DSM-5), unearthing the superior efficacy of the BFCSI in identifying catatonia cases compared to the DSM-5, which missed nearly 64% of cases.

TREATMENT

The treatment paradigm for catatonia primarily revolves around addressing the underlying conditions whether associated with mental, physical or other disorders like delirium. Benzodiazepines, particularly lorazepam, emerge as the mainstay of catatonia treatment, administered through intravenous injections, however, caution must be exercised on patients presenting with delirium, it is noteworthy that even in cases of delirium, catatonia responds well to Lorazepam [1,15]. Electroconvulsive therapy (ECT) serves as an alternative, especially when benzodiazepines prove ineffective, with studies reporting an effectiveness range of 80%-100% in different catatonia cases[1]. A recent systematic review by Xiao *et al*[16] concluded that ECT, evidence from 13 systematic reviews and one meta-analysis on ECT, 12 case reports on repetitive transcranial magnetic stimulation and seven studies of cases using transient direct current stimulation demonstrated statistically significant improvements in patients after treatment[16].

EVIDENCE-BASED CONSENSUS GUIDELINES

The British Association for Psychopharmacology has developed an evidence-based consensus guideline on the management of catatonia[17] based on existing systematic reviews and primary literature. This comprehensive guidance provides coverage on the diagnosis, aetiology, clinical features, and epidemiology of catatonia. It offers detailed recommendations for clinical assessments, including history, physical examination, and various investigations (Table 1). The treatment section encompasses benzodiazepines, ECT, other pharmacological and neuromodulatory therapies, addressing specific needs for diverse patient groups such as children, adolescents, older adults, women in the perinatal period, individuals with autism spectrum disorder, and those with certain medical conditions.

RESEARCH

The enigmatic nature of catatonia necessitates a concerted research endeavour to explain its neurobiological, genetic, and environmental underpinnings. Rogers *et al*[17] also emphasises that clinical trials in this area are scarce, and most recommendations are based on small observational studies, case series, and reports, highlighting the need for more randomised controlled trials and prospective cohort studies. Moreover, evolving treatment modalities like N-methyl-D-aspartate receptor antagonists warrant further exploration to enhance the therapeutic arsenal against catatonia[16]. Xiao *et al*[16] highlighted that although ECT is recommended first line treatment the emerging field of non-invasive brain stimulation (NIBS) can be an alternative option. However, more methodological robust randomised controlled trials in NIBS are warranted.

Table 1 British Association of Psychopharmacology evidence-based consensus guidelines for the management of catatonia: Summary of key recommendations

Recommendation category	Details
General approach and first-line treatment	Emphasised use of GABA-ergic pharmacotherapies as first-line treatment; followed by recommendation for management of non-response, and considering underlying conditions, and potential complications
Other therapies	Use of ECT, evolving treatment modalities like N-methyl-D-aspartate receptor antagonists, dopamine precursors, agonists and reuptake inhibitors, dopamine receptor antagonists and partial agonists, anticonvulsants, anticholinergic agents, miscellaneous treatments; alternatives to ECT include repetitive transcranial magnetic stimulation and transcranial direct-current stimulation
Subtypes of catatonia and related conditions	Specific recommendations for periodic catatonia, malignant catatonia, neuroleptic malignant syndrome, and medication-induced catatonia
Special groups and situations	Considerations for children and adolescents, older adults, the perinatal period (including the safety of lorazepam and use of ECT), individuals with autism spectrum disorder, and those with certain medical conditions
Research priorities	Emphasises the need for more randomised controlled trials and prospective cohort studies to strengthen evidence base for management of catatonia

GABA: Gamma-aminobutyric acid; ECT: Electroconvulsive therapy.

CONCLUSION

The nuanced understanding of catatonia's prevalence and its varied presentation, especially in acute mental health settings, requires a holistic approach towards its diagnosis and management. The study conducted in Nelson Mandela Bay serves as an excellent model for utilizing rigorous diagnostic criteria to reveal the true prevalence of catatonia. Applying accurate diagnoses then enables developing specialized treatments targeting the condition. Research on novel treatment modalities is warranted.

FOOTNOTES

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