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Prevalence of mental disorders according to DSM-5 in older adults living in the community: a cross-sectional study

Running title: Mental disorders in older adults

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Abstract

Introduction: Population aging in Brazil has important implications for public health, including an increased prevalence of mental disorders. Few Brazilian studies have assessed these conditions in community-dwelling older adults using DSM-5 criteria.

Objective: To determine the prevalence of mental disorders in older adults according to DSM-5 diagnostic criteria.

Methods: A cross-sectional study was conducted with 267 older adults living in the catchment area of a Primary Health Care Unit in São Paulo State. Structured clinical evaluations based on DSM-5 were conducted by trained psychiatrists. Frequencies were calculated, and logistic regression analyses examined associations with sex, age, and education. **Results:** The prevalence of any current mental disorder was 74.2%, with 46.8% presenting two or more

diagnoses. The most frequent disorders were generalized anxiety disorder (17.6%), depressive disorders (13.5%), and neurocognitive disorders (34.0%). Female sex was associated with greater odds of generalized anxiety disorder (OR=2.3; 95% CI: 1.12–4.74; p=0.032) and marginally with major depression (OR=2.02; 95% CI: 0.93–4.42; p=0.077). Older age was associated with both mild (OR=1.06; 95% CI: 1.02–1.11; p=0.005) and major neurocognitive disorders (OR=1.06; 95% CI: 1.00–1.12; p=0.037), whereas lower education was associated with major neurocognitive disorder (OR=0.75; 95% CI: 0.59–0.95; p=0.019).

Conclusions: The prevalence of mental disorders in community-dwelling older adults was high, particularly for anxiety, depression, and neurocognitive disorders. These findings highlight the need for screening and mental health strategies targeting this population, especially in primary care settings.

Keywords: Older adults, Mental disorders, Epidemiology, DSM-5, Community.

Introduction

Population aging is a global demographic trend with profound implications for public health. It is currently estimated that 1.1 billion individuals worldwide are aged 60 years or older. In Brazil alone, this group comprises approximately 30 million people, representing nearly 15% of the national population.[1,2] This demographic shift significantly influences health policy and planning, given the strong association between aging and increased risk of chronic illnesses, greater utilization of healthcare services, and heightened demand for long-term care.[3,4]

The prevalence of mental disorders among community-dwelling older adults is generally lower compared with younger age groups. Epidemiological studies have described an inverted U-shaped pattern, with a decline in the oldest age groups.[5] However, some investigations identified a contrasting pattern, with rising prevalence among the oldest-old.[6] Despite this lower prevalence, mental disorders remain among the leading contributors to reduced quality of life and greater economic burden in older adults.[7]

Depressive and anxiety disorders are the most prevalent mental health conditions among older adults. Recent studies report prevalence rates of up to 38% for depressive disorders[8] and up to 25% for anxiety disorders.[9] However,

systematic reviews have emphasized substantial variability in these estimates, which limits the comparability of findings across studies. Furthermore, most investigations have focused on the most common diagnoses, resulting in limited data regarding less frequent disorders in community-dwelling older adults.[10]

The heterogeneity of findings reported in the literature is largely attributable to methodological differences. The use of different diagnostic criteria, changes in classification systems, study designs, the inclusion or exclusion of specific diagnostic categories, and the diagnostic time frame (e.g.: past month, past year, lifetime) all contribute to variability in prevalence estimates among epidemiological studies of older adults. Sampling strategies also play a significant role, including whether specific age ranges are represented and whether individuals with cognitive impairment are included. In addition, intrinsic characteristics of the studied populations, including cultural context and sociodemographic factors, may also contribute to these differences [9,11,12]

A methodologically relevant consideration is that most epidemiological studies on mental disorders in older adults deliberately exclude neurocognitive disorders from overall prevalence estimates, addressing them in separate investigations due to their distinct clinical presentations and etiological pathways. Although neurocognitive and mental disorders may share certain risk and protective factors, they follow markedly different epidemiological trajectories and pathophysiological mechanisms. While conditions such as depression and anxiety often display an inverted U-shaped pattern across later life, with declining prevalence in the oldest age groups,[5] neurocognitive disorders show a progressive and pronounced increase with advancing age.[13] Furthermore, their associations with key sociodemographic variables often diverge from those observed in psychiatric conditions.

Since the publication of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) in 2013, few studies have investigated the prevalence of mental disorders among community-dwelling older adults. Therefore, the objective of this study was to assess the prevalence of mental disorders in older adults living within the catchment area of a Family Health Primary Care Unit in a medium-sized municipality in the countryside of São Paulo

State, Brazil, using psychiatric clinical interviews based on DSM-5 diagnostic criteria.

Method

This cross-sectional study was conducted within the catchment area of a Family Health Primary Care Unit in the city of São Carlos over a 12-month period, from March 2016 to February 2017. Located in the interior of São Paulo State, São Carlos had 28,696 residents aged 60 years or older according to the 2010 Brazilian national census, accounting for 12.92% of the total population. The region is characterized by low average levels of education and income.

Within this catchment area, 317 individuals aged 60 years or older were registered as residents in the month preceding the start of the study. All older adults living in this area were considered eligible. Exclusion criteria included: failure to locate the older adult at home after three attempts; inability to communicate verbally; hearing or visual impairments that compromised the understanding of the interview; and refusal to participate.

Of the eligible older adults, 32 could not be assessed because they were not found at home after three attempts, 16 refused to participate in the diagnostic interview, and 2 were bedridden and unable to understand the evaluation. The final sample comprised 267 older adults. Mental disorders diagnoses were established through a detailed clinical interview conducted by three psychiatrists. The interview was based on the DSM-5 diagnostic examination guide published by the American Psychiatric Association (2013), which provides a structured framework for diagnostic investigation and includes screening questions for disorders listed in the DSM-5.[14] All three psychiatrists (LRL, NMS, RMP) had extensive clinical experience and were supervisors of psychiatry residents at a university hospital. Before and throughout data collection, the interviewers met regularly to discuss cases with diagnostic uncertainty to ensure diagnostic consistency. Cognitive screening followed a standardized protocol using the Montreal Cognitive Assessment (MoCA) or the MoCA-Basic[15,16] could be administered by the psychiatrists during the evaluation to support the assessment of cognitive status and the diagnosis of neurocognitive disorders. However, cut-off scores were not used to determine the final diagnostic decision; instead, the

instruments served as complementary clinical tools. Among the 267 participants, cognitive screening was feasible in 190 individuals: 104 were assessed using the standard MoCA and 76 using the MoCA-Basic.

The study sample was assessed during home visits, and interviews were conducted in an appropriate setting. Whenever possible and when deemed necessary, an informant (family member or caregiver) was also interviewed. Participants diagnosed with mental disorder were referred to specialized healthcare services. This study was approved by the Research Ethics Committee of the Federal University of São Carlos (CAAE protocol: 48602515.5.0000.5504) and conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from all participants with preserved decision-making capacity. In cases of severe cognitive impairment, consent was obtained from legal guardians, and assent was sought from the participant whenever possible.

Statistical analysis

Descriptive analyses of sociodemographic and clinical variables were performed, using measures of central tendency and dispersion (mean and standard deviation) for continuous variables, and absolute and relative frequencies (%) for categorical variables. Subsequently, binary or multinomial logistic regression analyses were conducted to investigate the association between the presence of psychiatric diagnoses and the independent variables sex, age (in years), and education (in years of schooling). For this step, only diagnoses with at least 30 cases were considered. To ensure the reliability of the estimated coefficients, a minimum of 10 events (cases with the outcome present) per independent variable was required for inclusion in the model. Results were expressed as odds ratios (OR) with 95% confidence intervals (95% CI). Analyses were performed using R and SPSS version 23.0.

Results

The sample comprised 58.3% women (n = 158), and most participants were retired (70.5%, n = 191). The mean age was 70.6 years (SD = ±7.81), and the average educational attainment was 3.1 years of schooling (SD = ±2.97).

Prevalence of mental disorders

The prevalence of any current mental disorder was 74.2% (n = 198), and 46.8% (n = 125) met criteria for two or more mental disorders. Only 23.6% (n = 63) of older adults had never experienced a mental disorder throughout their lifetime. No participant met criteria for substance use disorders (except tobacco and alcohol), agoraphobia, or eating disorders. When excluding neurocognitive disorders (NCDs), the prevalence of any mental disorder was 53.2% (n = 142), with 33.0% of participants presenting one diagnosis (n=88), and 20.2% (n=54) having two or more concurrent psychiatric diagnoses. Among the 91 individuals diagnosed with a NCD, 45.1% (n = 41) also met criteria for at least one additional mental disorder, indicating a substantial degree of comorbidity within this subgroup. Table 1 presents the prevalence rates of current mental disorders in the sample by category and diagnosis.

Table 1. Current prevalence of mental disorders by category and diagnosis (N = 267).

Mental Disorder	N	%
Anxiety disorders		
Generalized anxiety disorder	47	17.6%
Specific phobia	25	9.4%
Social phobia	6	2.2%
Panic disorder	2	0.7%
Mood disorders		
Depressive disorder	36	13.5%
Current major depressive episode	27	10.1%
Persistent depressive disorder	9	3.4%
Previous major depressive episode	42	15.7%
Lifetime major depressive episode	64	24.3%
Bipolar disorder	5	1.8%
Neurocognitive disorders		
Major neurocognitive disorder	30	11.2%
Mild neurocognitive disorder	61	22.8%
Substance use disorders		
Current tobacco use	24	9.0%
Former tobacco use	15	5.6%
Current alcohol use	7	2.6%
Former alcohol use	12	4.5%
Sleep disorders	41	15.6%
Psychotic disorders		
Schizophrenia	5	1.9%
Other psychoses	3	1.1%
Trauma and stress-related disorders	6	2.2%

Somatic symptom disorder	1	0.4%
Obsessive-compulsive disorder	1	0.4%
Dissociative disorder	1	0.4%
Intellectual disability	3	1.1%

Associations with sex, age, and education

As previously noted, regression analyses were conducted only for current disorders with a prevalence of more than 30 individuals. In the logistic regression analysis for generalized anxiety disorder (GAD), female sex was associated with a higher likelihood of diagnosis (OR = 2.3; 95% CI: 1.12–4.74; p = 0.032). Age and education were not significantly associated with GAD. In the logistic regression analysis for depressive disorders (i.e., current major depressive episode and persistent depressive disorder), female sex showed a higher likelihood of diagnosis (OR = 2.02; 95% CI: 0.93–4.42; p = 0.077), although this association did not reach statistical significance. Neither age (OR = 1.01; 95% CI: 0.96–1.06) nor education (OR = 0.99; 95% CI: 0.86–1.13) was significantly associated with depressive disorders.

For the diagnosis of NCDs, a multinomial logistic regression was performed, using the absence of NCD as the reference category. The analysis indicated that age was significantly associated with both mild NCD (OR = 1.06; 95% CI: 1.02–1.11; p = 0.005) and major NCD (OR = 1.06; 95% CI: 1.00–1.12; p = 0.037), compared with the group without NCD. Education was inversely associated with major NCD (OR = 0.75; 95% CI: 0.59–0.95; p = 0.019), but not with mild NCD. Sex was not significantly associated with either condition.

In the logistic regression analysis for sleep disorders, none of the predictor variables (sex, age, and education) showed a statistically significant association.

Discussion

The findings of this study indicate a high frequency of mental disorders in this population, with over 70% of older adults meeting criteria for at least one current diagnosis and nearly half presenting with comorbid conditions. The most frequent psychiatric conditions were anxiety, depression, and NCDs.

The overall prevalence of any mental disorder was high compared with international epidemiological studies, which typically report rates ranging from 20.9% to 50% among older adults.[9,17] Similarly, Brazilian studies have also

reported lower prevalence rates compared to our findings.[18,19] It is important to note, however, that the present study included NCDs in the diagnostic assessment, whereas these are frequently excluded from large-scale epidemiological surveys. When NCDs are excluded from our analysis, the prevalence of any mental disorder decreases to 53.2%, which is more consistent with findings from both national and international studies. The sample also had a low mean educational level (3.1 years), which may represent a risk factor for the higher prevalence of mental disorders observed.[20] Mental disorders in older adults are strongly associated with reduced quality of life, and functional impairment,[21] further highlighting the need for early detection and comprehensive management strategies.

The high rate of comorbidity observed in this study suggests a clinically complex profile with important implications for both clinical practice and public health. Comorbid conditions in older adults are also associated with increased symptom burden, poorer prognosis, and higher utilization of healthcare services.[22] This overlap also has methodological implications, as disorder-specific prevalence estimates may be inflated by individuals meeting criteria for multiple diagnoses simultaneously.[10,17] These findings underscore the need for integrated care strategies and comprehensive screening approaches capable of identifying and managing co-occurring conditions in older populations.[23,24] Moreover, our findings indicate a high level of comorbidity between NCDs and other mental disorders, which may carry important clinical implications. Behavioral and psychological symptoms may mimic or precede major neurocognitive disorder.[25] This diagnostic overlap can lead to delayed or inaccurate identification of neurocognitive disorders and may influence treatment decisions, particularly in primary care settings.[26,27] These findings underscore the importance of comprehensive clinical assessments that integrate both cognitive and affective domains.

Similarly to our findings, previous studies have reported higher prevalence of anxiety disorders, followed by mood disorders, particularly major depression.[9,28,29] Among anxiety disorders, GAD appears to be the most prevalent,[30,31] which is consistent with our findings. Two aspects deserve attention when evaluating anxiety in older adults: first, subclinical anxiety

symptoms are highly prevalent,[32] which may contribute to considerable variability in prevalence estimates across studies; and second, the clinical presentation of anxiety symptoms may change over the lifespan, complicating the use of standard diagnostic criteria in late life.[30]

Regarding mood disorders, major depression was the most prevalent condition, with a current prevalence of 10.1%. Overall, prevalence rates of affective disorders vary widely across studies depending on methodology and population characteristics, ranging from 2.6%[17] to 17,1%.[29] Our study also showed that nearly one-quarter of participants had experienced at least one major depressive episode during their lifetime. These rates are higher than those reported in other populations.[9] However, most studies exclude older adults with cognitive decline, which may lead to underestimation of depression prevalence, as well as potential recall bias. Bipolar disorder consistently shows low prevalence in epidemiological studies of older adults, in part due to diagnostic challenges that require comprehensive clinical assessment. A meta-analysis reported a prevalence of 0.53%,[10] which is lower than rates found in adult populations. In our study, prevalence was more consistent with rates observed in general adult samples.[33]

In DSM-5, the diagnostic criteria for dementia were reformulated, although the overall impact on the diagnosis of NCDs was relatively small.[34] In this study, diagnoses of NCDs were established through clinical psychiatric interviews. It is worth noting that the psychiatrists conducting the assessments could also have used cognitive screening tools, such as the MoCA, to support clinical decision-making. The prevalence of major NCD observed in this study was consistent with previous reports,[35] as was the prevalence of mild NCD.[36] As with other disorders, prevalence estimates for NCDs vary considerably across studies, largely due to differences in the diagnostic criteria and the populations characteristics.

Regarding other disorders, the high prevalence of sleep disturbances observed in this study warrants attention, although it may be underestimated compared to specialized investigations in older populations, which report rates of up to 50%, particularly for conditions such as obstructive sleep apnea.[37,38] One possible explanation for the lower prevalence found in our study is the limited sensitivity of a general psychiatric interview to detect more specific sleep

problems, some of which may require complementary assessments. Additionally, older adults tend to minimize such symptoms. Another relevant finding was nicotine use disorder, identified in nearly 10% of participants. Although lower than rates typically reported in younger adults,[39] this is consistent with evidence indicating a decline in prevalence with advancing age.[40]

In this study, associations were examined with only three sociodemographic variables due to the sample size. As expected, the presence of depression or anxiety disorders was more frequently associated with female sex, with an approximate 2:1 ratio. These findings are consistent with previous studies.[28,29] Similarly, the results for NCDs were in line with the literature, showing a direct association with older age and lower educational attainment.[41,42]

Low educational attainment is a well-established risk factor for major NCD, as it has been associated with reduced cognitive reserve and greater vulnerability to neuropathological processes.[43] In our study, lower education was significantly associated with the diagnosis of major NCD, consistent with findings from both Brazilian and international cohorts.[35,44] Although no statistically significant association was observed between education and affective or anxiety disorders in our sample, previous studies suggest that low education may still influence the clinical expression and course of these conditions, potentially by limiting health literacy, coping strategies, or access to mental health care.[45] In the Brazilian context, where educational disparities are marked, understanding the nuanced role of schooling in mental health outcomes among older adults remains essential for designing equitable prevention and care strategies.

Among the limitations of this study, the cross-sectional design should be noted, as it precludes establishing causal relationships between sociodemographic variables and the presence of mental disorders. In addition, the sample consisted only of older adults residing in a single catchment area of the Primary Health Care Unit, which may limit the generalizability of the findings to populations with different socioeconomic or cultural characteristics. Despite the census-based design, a small proportion of eligible individuals could not be assessed because they were not found at home or declined participation. Even though this loss was modest, the possibility of selection bias cannot be ruled out, as frailer, more socially isolated, or more cognitively impaired individuals may

have been underrepresented, potentially affecting prevalence estimates. The modest sample size also restricted the analyses, preventing the examination of disorders with low prevalence and allowing associations to be tested only for sex, age, and education. Although clinical diagnoses were made by psychiatrists using a structured guide for the assessment of mental disorders, the absence of certain standardized instruments specifically designed for the assessment of depression and sleep disorders, as well as the unavailability of a validated version of the SCID-5 at the time of data collection, may have limited diagnostic sensitivity and reduced the comparability of findings with other international studies. Their omission could lead to under or overestimation of certain conditions, particularly anxiety, depression, and sleep disorders. Nonetheless, an important strength of this study was the use of in-home clinical evaluations, which increased representativeness by enabling the inclusion of older adults with mobility limitations and likely enhanced diagnostic accuracy compared with studies relying on screening tools or remote assessments.

From a public health perspective, the high prevalence of mental disorders identified in this community-based sample of older adults highlights the urgent need to integrate mental health screening and management into primary care services. Given the scarcity of specialized geriatric mental health resources, especially in low-resource settings, primary care represents a strategic point of access for early identification and intervention. Training primary care professionals to recognize common psychiatric conditions and cognitive impairment in older adults, implementing brief standardized screening tools, and establishing referral pathways to specialized services are essential steps to reduce the mental health treatment gap in this population. In addition, considering the growing aging population in Brazil and globally, these findings reinforce the importance of developing age-appropriate mental health policies that address both the clinical complexity and the social vulnerabilities commonly observed in older adults.

Conclusions

Our findings indicate a high prevalence of mental disorders among community-dwelling older adults, particularly anxiety, depression, and

neurocognitive disorders. Among the associated sociodemographic factors, female sex was related to anxiety and depressive disorders, while advancing age and lower educational attainment were significantly associated only with major NCD. These findings underscore the importance of tailored screening and intervention strategies for this population, especially in primary care settings.

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