

The Increasing Predominance of Emergency Hospitalizations for Neurotic and Stress-Related Disorders in Brazil (2015-2024)

Review began 09/15/2026

Review ended 10/09/2026

Published 10/20/2026

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DOI: 10.7759/cureus.118267

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Abstract

Objective

Neurotic, stress-related, and somatoform disorders are important contributors to psychiatric morbidity and healthcare utilisation. This study aimed to characterise the epidemiological profile and temporal trends of hospitalisations for neurotic, stress-related, and somatoform disorders in Brazil between 2015 and 2024.

Methods

This retrospective ecological time-series study analysed hospitalisations recorded in the Brazilian Unified Health System for which the primary diagnosis corresponded to ICD-10 codes F40-F48. Data were stratified by sex, age group, geographic region, and type of admission. Temporal trends were assessed using linear regression, and group differences were evaluated using non-parametric tests, with statistical significance set at $p < 0.05$.

Results

A total of 29,908 hospitalisations were recorded during the study period. The annual number of hospitalisations increased by 94.0%, from 2,263 cases in 2015 to 4,391 cases in 2024. Emergency admissions accounted for 84.7% ($n = 25,332$) of all hospitalisations and increased by 151.7%, from 1,574 cases in 2015 to 3,962 cases in 2024, whereas elective admissions decreased by 37.7%. Overall hospitalisations showed a significant upward temporal trend ($\beta = 203.2$ admissions/year; $R^2 = 0.689$; $p = 0.003$). The most pronounced increases were observed among females ($\beta = 168.9$ admissions/year; $p < 0.001$) and individuals aged 20-29 years ($\beta = 54.3$ admissions/year; $p = 0.002$), with significant upward trends also observed in most geographic regions ($p < 0.01$).

Conclusions

Hospitalisations for neurotic, stress-related, and somatoform disorders increased substantially in Brazil between 2015 and 2024, primarily driven by the marked rise in emergency admissions, particularly among females and young adults. These findings highlight the need to strengthen outpatient and community-based mental healthcare, improve early identification and management of these disorders, and reduce potentially avoidable reliance on hospital-based and crisis-oriented care.

Categories: Psychiatry, Public Health

Keywords: emergency service, epidemiology, hospitalization, mental health services, neurotic disorders

Introduction

Mental disorders are among the leading contributors to nonfatal disease burden worldwide. In 2019, mental disorders accounted for approximately 14.6% of all years lived with disability (YLDs), with a greater age-standardized burden observed among females [1]. Within this broad diagnostic spectrum, neurotic, stress-related, and somatoform disorders, classified under ICD-10 codes F40-F48, comprise phobic and other anxiety disorders, obsessive-compulsive disorder, reactions to severe stress and adjustment disorders, dissociative and conversion disorders, and somatoform disorders. These conditions represent an important public health concern because of their high prevalence, recurrent or persistent clinical course, substantial functional impairment, frequent somatic manifestations, and considerable gaps in access to effective treatment. Evidence from 21 countries showed that only 27.6% of individuals with a 12-month anxiety disorder received any form of treatment, whereas only 9.8% received care considered potentially adequate [2]. In Brazil, longitudinal population-based evidence has demonstrated a substantial incidence of anxiety disorders among young adults, with female sex identified as an important risk factor [3]. Moreover,

How to cite this article

Dos Santos Terceiro L L, Da Rocha Sady L M, Rodrigues Alves S, et al. (October 20, 2026) The Increasing Predominance of Emergency Hospitalizations for Neurotic and Stress-Related Disorders in Brazil (2015-2024). Cureus 18(10): e118267. DOI 10.7759/cureus.118267

socioeconomic and geographic inequalities have been associated with significant disparities in access to mental healthcare and service utilization [4].

Mental healthcare in Brazil has undergone substantial restructuring following the Psychiatric Reform, particularly after the enactment of Law No. 10,216/2001 and the establishment of the Psychosocial Care Network (Rede de Atenção Psicossocial (RAPS)) through Ordinance No. 3,088/2011 [5,6]. This model emphasizes community-based and outpatient care and seeks to reduce unnecessary psychiatric hospitalization, reserving inpatient treatment for situations in which community and extra-hospital resources are insufficient to ensure adequate clinical management. The expansion of Psychosocial Care Centers (Centros de Atenção Psicossocial (CAPS)) has been associated with increased availability of community-based mental health services and reductions in psychiatric hospitalizations [7]. Nevertheless, important regional inequalities persist. Although estimated CAPS coverage increased from 71% to 87% between 2013 and 2019, the availability and distribution of services remained heterogeneous across Brazilian states [8].

Within this context, the occurrence of emergency hospitalizations for F40-F48 disorders may provide an indirect indicator of difficulties in accessing timely and continuous outpatient care or limitations in community-based crisis management. Although hospitalization is clinically necessary in selected cases, several disorders within this diagnostic group can often be managed in primary care or specialized outpatient settings when appropriately recognized and treated. Therefore, a high or increasing proportion of emergency admissions may reflect, at least in part, delayed access to care, inadequate continuity of treatment, or insufficient availability of community-based mental health services [2,7,8].

The COVID-19 pandemic introduced an additional challenge by increasing the burden of anxiety- and stress-related conditions while simultaneously disrupting the delivery of routine mental healthcare services. Globally, the prevalence of anxiety disorders was estimated to have increased by approximately 25.6% in 2020 [9]. In Brazil, during the first six months of the pandemic, the number of outpatient mental health consultations was 28% lower than expected, accompanied by reductions in group-based activities and psychiatric hospitalizations but an increase in emergency mental health consultations [10]. Similarly, interrupted time-series analyses have demonstrated an abrupt decline in hospitalizations for mental and behavioral disorders following the onset of the pandemic, suggesting that changes in healthcare utilization should not be interpreted as direct evidence of changes in the underlying burden of mental illness [11].

A recent nationwide study covering the period from 2012 to 2023 reported an overall decline in psychiatric hospitalization rates in Brazil but identified a distinct pattern for neurotic, stress-related, and somatoform disorders, characterized by a predominance among females and an upward, although statistically nonsignificant, inflection after 2021 [12]. However, that analysis examined psychiatric hospitalizations within broader ICD-10 Chapter V categories and did not specifically investigate the temporal distribution of hospitalizations for F40-F48 disorders according to type of admission, detailed age groups, sex, and geographic region through 2024.

Therefore, the present study aimed to characterize the epidemiological profile and temporal trends of hospitalizations for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48) in Brazil between 2015 and 2024, according to sex, age group, geographic region, and type of admission.

Materials And Methods

This ecological, retrospective, analytical time-series study was based on nationwide secondary data from Brazil. The study population comprised all hospitalizations financed by the Brazilian Unified Health System (Sistema Único de Saúde (SUS)) in which the primary diagnosis was classified as a neurotic, stress-related, or somatoform disorder, corresponding to ICD-10 codes F40-F48 [13]. The study period extended from January 1, 2015, to December 31, 2024.

Data were obtained from the Hospital Information System of the Brazilian Unified Health System (SIH/SUS), available through the TABNET platform of the Department of Informatics of the Unified Health System (DATASUS) [14]. Absolute hospitalization frequencies were extracted and stratified according to sex (male and female), age group, region of residence (North, Northeast, Southeast, South, and Central-West), and type of admission (elective or emergency).

Crude hospitalization rates per 100,000 inhabitants were calculated using annual population estimates from the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística (IBGE)) [15], as made available through DATASUS. To assess sex-related disparities, rate ratios (RRs) and their corresponding 95% CIs were calculated, using males as the reference group.

The epidemiological profile was described using absolute and relative frequencies and other appropriate descriptive measures. Temporal trends in annual hospitalization counts and rates were evaluated using simple linear regression models. For each model, the slope coefficient (β), coefficient of determination (R^2), and corresponding p-value were estimated. Positive and negative β coefficients were interpreted as

increasing and decreasing temporal trends, respectively.

The distribution of the data was assessed before inferential analyses. Comparisons among three or more independent groups were performed using the Kruskal-Wallis test, followed by Dunn's post hoc test when appropriate. Differences between emergency and elective admissions were assessed using the paired Wilcoxon signed-rank test. Associations between categorical variables were evaluated using Pearson's chi-square test. All statistical tests were two-sided, and statistical significance was defined as $p < 0.05$.

Data extraction, organization, and tabulation were performed using Microsoft Excel. Statistical analyses were conducted using R software (version 4.5.2) [16] and JASP (version 0.95.0.0) [17].

Because this study used exclusively publicly available, aggregated, and anonymized secondary data, ethical review and informed consent were not required, in accordance with Resolution No. 466/2012 of the Brazilian National Health Council [18].

Results

Between 2015 and 2024, Brazil recorded 29,908 hospitalizations through the Unified Health System (SUS) for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48). Table 1 presents the sociodemographic distribution of hospitalizations and demonstrates a marked predominance of emergency admissions, which accounted for 84.7% ($n = 25,332$) of all hospitalizations. The paired Wilcoxon test ($V = 0$; $N = 100$ paired observations (5 regions $\times$ 10 years $\times$ 2 sexes)) confirmed this asymmetry, with emergency hospitalization rates consistently and significantly higher than elective rates throughout the study period ($p < 0.001$; $r \approx 0.86$). Females accounted for the majority of emergency admissions ($n = 16,579$; 87.1%), while individuals aged 15-19 years had the highest proportion of emergency admissions within their age group ($n = 2,745$; 89.4%). Regional disparities were also evident. The Kruskal-Wallis test demonstrated substantial heterogeneity across regions ($df = 4$; $H = 36.71$; $p < 0.001$; $\eta^2 = 0.17$), indicating significant geographic variation in hospitalization rates. The Central-West region exhibited the most pronounced predominance of emergency admissions, which accounted for 96.1% ($n = 4,206$) of all hospitalizations in the region.

Variable	Total (n)	Emergency (n)	Emergency (%)	Elective (n)	Elective (%)
Total	29,908	25,332	84.7	4,576	15.3
Sex					
Female	19,027	16,579	87.1	2,448	12.9
Male	10,881	8,753	80.4	2,128	19.6
Region of residence					
North	984	872	88.6	112	11.4
Northeast	4,572	3,974	86.9	598	13.1
Central-West	4,376	4,206	96.1	170	3.9
Southeast	13,171	10,690	81.2	2,481	18.8
South	6,805	5,590	82.1	1,215	17.9
Age group (years)					
0-9	837	615	73.5	222	26.5
10-14	1,547	1,374	88.8	173	11.2
15-19	3,071	2,745	89.4	326	10.6
20-29	6,569	5,694	86.7	875	13.3
30-39	5,976	5,030	84.2	946	15.8
40-49	5,222	4,345	83.2	877	16.8
50-59	3,566	2,947	82.6	619	17.4
60-69	1,954	1,566	80.1	388	19.9
≥70	1,158	1,008	87	150	13

TABLE 1: Profile of hospitalizations for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48) according to type of admission and sociodemographic variables. Brazil, 2015-2024.

Source: Prepared by the authors based on data from the SUS Hospital Information System (SIH/SUS), using Microsoft Excel.

Age unknown or not reported: n = 8.

ICD: International Classification of Diseases.

The increase in hospitalization burden over the study period is illustrated in Figure 1. The total number of hospitalizations increased by 94.0%, from 2,263 in 2015 to 4,391 in 2024. Emergency admissions increased from 1,574 to 3,962 (+151.7%), whereas elective admissions declined by 37.7%. Thus, the overall increase in hospitalizations was driven predominantly by emergency admissions, despite a temporary reduction during 2020-2021. Elective hospitalizations peaked in 2016 (n = 811) and subsequently declined to their lowest level in 2021 (n = 269), ending the study period 37.7% below the 2015 baseline. Accordingly, the proportion of emergency admissions increased from 69.6% (n = 1,574) in 2015 to 90.2% (n = 3,962) in 2024.

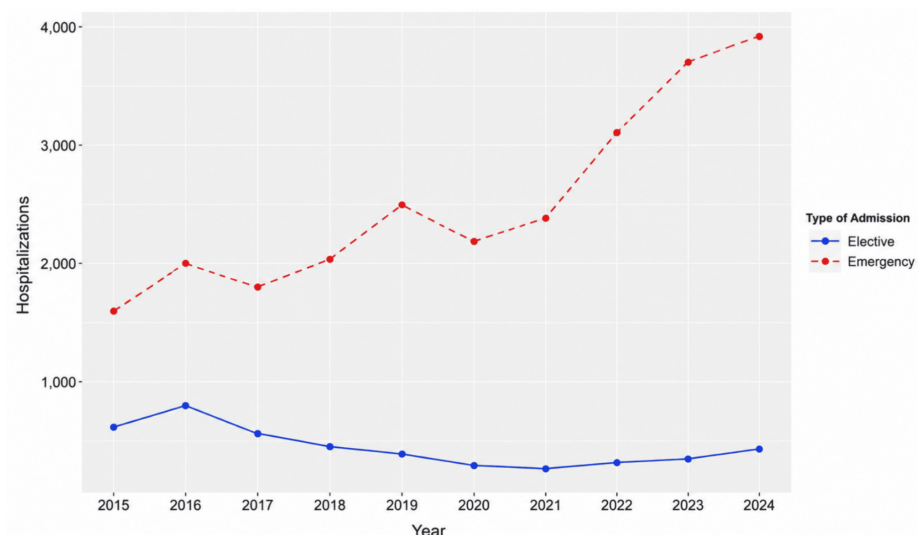


FIGURE 1: Temporal trends in hospitalizations for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48) in the Brazilian Unified Health System, according to type of admission. Brazil, 2015-2024.

Source: Prepared by the authors based on data from the SUS Hospital Information System (SIH/SUS). Figure generated using JASP (version 0.95.0.0).

ICD: International Classification of Diseases.

Linear regression analyses (Table 2) demonstrated statistically significant temporal trends in 15 of the 18 investigated strata, comprising 14 upward trends and one downward trend (elective admissions). No statistically significant trends were observed among males, individuals aged 0-9 years, or residents of the South region. The largest slope coefficients were observed for emergency admissions ($\beta = 248.2$ admissions/year) and females ($\beta = 168.9$ admissions/year), while individuals aged 20-29 years exhibited the largest increase among age groups ($\beta = 54.3$ admissions/year).

Variable	Cases 2015 (n)	Cases 2024 (n)	Change (%)	β (admissions/year)	R²	F (1, 8)	p-value
Type of admission							
Emergency	1,574	3,962	151.7	248.2	0.853	46.42	<0.001
Elective	689	429	-37.7	-45	0.584	11.23	0.01
Sex							
Female	1,280	2,936	129.4	168.9	0.801	32.2	<0.001
Male	983	1,455	48	34.3	0.29	3.27	0.108
Region of residence							
North	57	261	357.9	18.9	0.675	16.62	0.004
Northeast	360	735	104.2	39.7	0.72	20.57	0.002
Central-West	197	604	206.6	58.4	0.908	78.96	<0.001
Southeast	1,076	1,935	79.8	77.4	0.665	15.88	0.004
South	573	856	49.4	8.8	0.022	0.18	0.686
Age group (years)							
0-9	108	86	-20.4	-2.6	0.055	0.47	0.513
10-14	77	243	215.6	19.3	0.879	58.12	<0.05
15-19	169	468	176.9	28.7	0.654	15.12	<0.05
20-29	434	1,013	133.4	54.3	0.706	19.21	0.002
30-39	493	877	77.9	31	0.531	9.06	<0.05
40-49	439	746	69.9	31	0.747	23.62	<0.05
50-59	318	488	53.5	19.4	0.577	10.91	<0.05
60-69	129	264	104.7	11.1	0.687	17.56	<0.05
≥70	96	206	114.6	10.6	0.679	16.92	<0.05

TABLE 2: Temporal trend analysis of hospitalizations for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48), according to epidemiological variables. Brazil, 2015-2024.

Source: Prepared by the authors based on data from the SUS Hospital Information System (SIH/SUS), using Microsoft Excel.

β: Linear regression slope coefficient (representing the average annual increase or decrease in hospitalizations); R²: Coefficient of determination (goodness of fit of the linear model); ICD: International Classification of Diseases.

p-values < 0.05 indicate a statistically significant temporal trend.

Over the study period, the number of hospitalizations among females increased by 129.4%, particularly after 2022, whereas the increase among males was more modest (+48.0%). By 2024, females accounted for 66.9% (n = 2,936) of all hospitalizations.

RR analyses with 95% CIs indicated that the excess hospitalization risk among females was primarily associated with emergency admissions. Females had significantly higher risks of emergency hospitalization across most adult age groups (15–69 years) in the Northeast, Southeast, South, and Central-West regions. The largest disparities were observed among individuals aged 30–39 years in the Central-West region (RR = 3.43; 95% CI, 2.93–4.01) and those aged 15–19 years in the Southeast region (RR = 2.56; 95% CI, 2.25–2.92).

In contrast, elective admissions showed greater heterogeneity, including age- and region-specific differences in the relative risk between sexes. The reported RRs indicated a lower relative risk among females compared with males among individuals aged 30–39 years (RR = 0.30; 95% CI, 0.21–0.42) and 60–69 years (RR = 0.22; 95% CI, 0.12–0.40) in the Northeast region, as well as among those aged 40–49 years in the South region (RR

= 0.59; 95% CI, 0.44-0.80). Female excess risk for elective admissions was concentrated primarily in the Southeast region, suggesting regional and sex-specific differences in patterns of access to planned versus crisis-oriented mental healthcare.

Regional trends are presented in Figure 2. The North region experienced the largest relative increase in hospitalizations (+357.9%), followed by the Central-West (+206.6%) and Northeast (+104.2%) regions. The Southeast region showed an increase of 79.8%, whereas the South exhibited a more modest increase (+49.4%), despite an isolated peak of 1,025 hospitalizations in 2016. Overall, 71 of 138 chi-square tests (χ^2 ; $df = 24-32$, depending on the stratum) yielded $p < 0.05$, corresponding to 51.4% of the comparisons. No adjustment for multiple comparisons, such as the Bonferroni correction, was applied. These findings indicate substantial variation in age-specific hospitalization patterns across Brazilian regions and provide evidence against a homogeneous hospitalization profile nationwide.

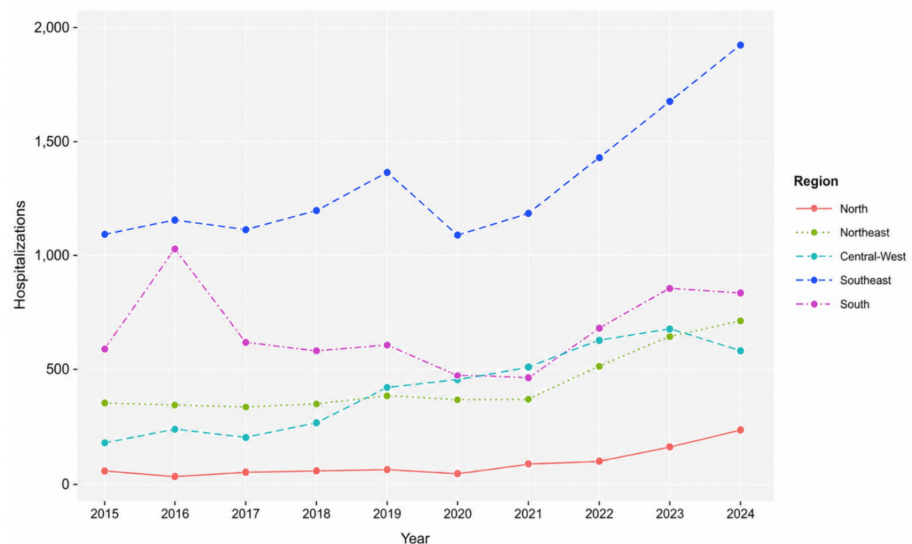


FIGURE 2: Temporal trends in hospitalizations for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48) in the Brazilian Unified Health System, according to macroregion of residence. Brazil, 2015-2024.

Source: Prepared by the authors based on data from the SUS Hospital Information System (SIH/SUS). Figure generated using JASP (version 0.95.0.0).

The temporal distribution of the hospitalization burden by age group is shown in Figure 3. Individuals aged 20-29 and 30-39 years accounted for the largest absolute hospitalization burdens, with emergency admissions representing 86.7% ($n = 5,694$) and 84.2% ($n = 5,030$), respectively, of hospitalizations in these age groups. Both groups demonstrated accelerated growth after 2022. Individuals aged 10-14 years and those aged >50 years maintained consistently high hospitalization levels over the study period, whereas children aged 0-9 years had the lowest and most stable hospitalization counts.

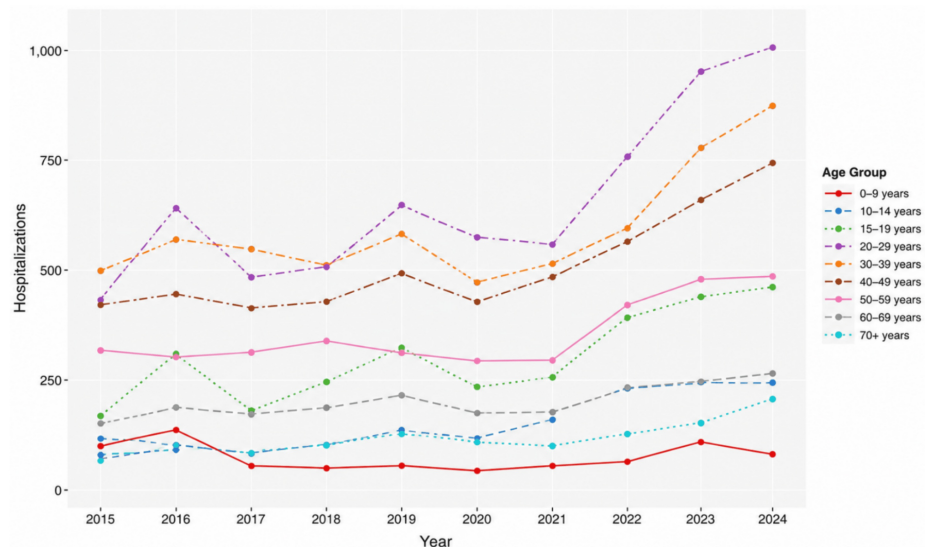


FIGURE 3: Temporal trends in hospitalizations for neurotic, stress-related, and somatoform disorders (ICD-10 codes F40-F48) in the Brazilian Unified Health System, according to age group. Brazil, 2015-2024.

Source: Prepared by the authors based on data from the SUS Hospital Information System (SIH/SUS). Figure generated using JASP (version 0.95.0.0).

ICD: International Classification of Diseases.

Linear regression models demonstrated a statistically significant upward temporal trend in the total number of hospitalizations nationwide ($\beta = 203.2$ admissions/year; $R^2 = 0.689$; $p = 0.003$). This increase was attributable to the significant rise in emergency admissions, whereas elective hospitalizations showed a significant decline ($\beta = -45.0$ admissions/year; $p = 0.010$).

When stratified by sex, a statistically significant temporal increase was observed among females ($\beta = 168.9$ admissions/year; $R^2 = 0.801$; $p < 0.001$), whereas no significant trend was identified among males ($p = 0.108$). By age group, the most pronounced increases were observed among adolescents and young adults, particularly those aged 20-29 years ($\beta = 54.3$ admissions/year; $p = 0.002$), followed by individuals aged 30-39 and 40-49 years ($\beta = 31.0$ admissions/year for both; $p < 0.05$). Significant upward trends were also observed among individuals aged 10-14, 15-19, and ≥ 50 years.

Geographically, significant upward trends were observed in the Central-West ($R^2 = 0.908$; $p < 0.001$), Southeast ($p = 0.004$), North ($p = 0.004$), and Northeast ($p = 0.002$) regions. In contrast, the South was the only Brazilian region without evidence of a statistically significant temporal increase over the study period ($p = 0.686$).

Discussion

This nationwide analysis identified a substantial shift in the pattern of hospital care for neurotic, stress-related, and somatoform disorders in Brazil. Between 2015 and 2024, the number of hospitalizations increased by 94.0%, from 2,263 to 4,391 cases. This increase was driven predominantly by the marked growth in emergency admissions, whereas elective admissions declined progressively over the study period. This pattern contrasts with the broader reduction in psychiatric hospitalizations reported in Brazil following the expansion of community-based mental healthcare [7,12]. Yano KM et al. previously reported a predominance of females among hospitalizations for F40-F48 disorders and an upward, although statistically nonsignificant, trend after 2021 [12]. By extending the observation period through 2024 and distinguishing between emergency and elective admissions, the present study demonstrates that the recent increase in hospital utilization for these disorders was concentrated primarily in emergency care.

The decline in elective admissions may partly reflect the transition from hospital-centered care toward community- and outpatient-based mental healthcare promoted by the Brazilian Psychiatric Reform [5-7]. Evidence suggests that the expansion of Psychosocial Care Centers (CAPS) increased the availability of community-based mental health services and contributed to reductions in psychiatric hospitalizations [7].

However, the simultaneous and disproportionate increase in emergency admissions suggests that the reduction in planned inpatient care may not have been fully accompanied by timely, continuous, and accessible outpatient management. International evidence indicates that only a minority of individuals with anxiety disorders receive adequate treatment [2], while studies from Brazil have documented persistent socioeconomic and regional inequalities in access to mental healthcare, as well as substantial variation in CAPS coverage [4,8]. Consequently, the increasing reliance on emergency hospitalization may reflect delayed recognition, treatment discontinuity, barriers to specialized care, or limitations in community-based crisis management. Nevertheless, alternative explanations, including changes in referral practices, hospital capacity, service availability, and diagnostic coding, cannot be excluded.

The temporary reduction in hospitalizations observed during 2020 and 2021 should be interpreted in the context of the substantial disruption to healthcare delivery caused by the COVID-19 pandemic rather than as evidence of a true reduction in psychiatric morbidity. During the first six months of the pandemic, Brazil recorded approximately 28.0% fewer outpatient mental health appointments and 33.0% fewer psychiatric hospitalizations than expected, despite a 36.0% increase in emergency mental health consultations [10]. An interrupted time-series analysis similarly identified an abrupt decline in hospitalizations for mental and behavioral disorders following the onset of the pandemic [11]. Comparable reductions in psychiatric emergency visits for F40-F48 disorders were reported in Sweden during both pandemic waves [19]. In contrast, visits for anxiety- and stress-related disorders increased by 188.0% between 2018 and 2020 at a major psychiatric ED in Shanghai [20]. These divergent findings indicate that the effects of the pandemic on psychiatric healthcare utilization were likely influenced by local restrictions, healthcare organization, service availability, and patterns of help-seeking.

The acceleration in hospitalizations observed in Brazil after 2022 is consistent with the possibility of accumulated unmet mental healthcare needs combined with a sustained increase in the burden of anxiety- and stress-related conditions. The COVID-19 pandemic was associated with an estimated 25.6% global increase in the prevalence of anxiety disorders in 2020 [9]. Studies from other settings have similarly described an initial reduction in mental health-related hospital utilization followed by a subsequent increase. In France, mental health-related hospitalizations and emergency visits eventually exceeded expected levels, particularly among adolescent girls [21]. Likewise, a study from the United States reported a 6.7% increase in the proportion of young people presenting to emergency services for mental health-related conditions during the second year of the pandemic, with a substantially greater increase of 22.1% among adolescent girls [22]. Although the present ecological analysis cannot establish the causes of the post-2022 increase, the observed pattern is compatible with delayed access to care, persistent psychosocial consequences of the pandemic, and the progression or exacerbation of disorders that may not have been adequately identified or treated during periods of restricted access [9-11,21,22].

Females accounted for the largest share of the observed increase and exhibited higher risks of emergency hospitalization across most adult age groups. This finding is consistent with the greater global burden of mental disorders among females [1] and with Brazilian longitudinal evidence identifying female sex as an important risk factor for incident anxiety disorders among young adults [3]. A previous nationwide analysis also reported a predominance of females among hospitalizations for F40-F48 disorders [12]. Internationally, females accounted for 64.6% of emergency visits for F40-F48 disorders in Shanghai [20], while post-pandemic increases in acute mental healthcare utilization were particularly pronounced among adolescent girls in France and the United States [21,22]. The substantial variation in female-to-male rate ratios across age groups and geographic regions suggests that the observed disparity is unlikely to be explained by a single mechanism. Rather, it may reflect a combination of differences in underlying morbidity, symptom recognition, help-seeking behavior, healthcare utilization, and pathways of access to emergency services [1-3,20,23,24].

Adolescents and young adults represented another population of particular concern. The high proportion of emergency admissions among individuals aged 15-19 years and the steepest temporal increase among those aged 20-29 years are consistent with the early onset of many common mental disorders. A national study involving more than 71,000 Brazilian adolescents estimated a 17.1% prevalence of common mental disorders [24]. In addition, findings from the 100 Million Brazilian Cohort identified interpersonal violence as the strongest predictor of psychiatric hospitalization among low-income young people, while low household educational attainment, unemployment, and household crowding were also associated with an increased risk of hospitalization [23]. International evidence likewise demonstrates disproportionate growth in emergency mental healthcare utilization among adolescents and young people, particularly following the COVID-19 pandemic [21,22]. Together, these findings reinforce the importance of early identification and timely intervention through schools, primary healthcare services, and programs specifically designed to meet the needs of adolescents and young adults [21-24].

The higher relative risk of elective hospitalization among males in selected age groups and regions does not contradict the overall predominance of females among emergency admissions. Men may be less likely to seek professional help for mental health concerns because of stigma, reduced recognition of psychological symptoms, and gender-related norms surrounding help-seeking behavior. Consequently, men who eventually access planned hospital care may represent a more selected clinical population, potentially characterized by different referral pathways, longer periods without treatment, or greater clinical

complexity. Therefore, sex-specific differences in elective hospitalization should be interpreted primarily as indicators of healthcare utilization patterns rather than direct measures of the population prevalence or clinical severity of F40-F48 disorders [25].

Substantial geographic heterogeneity was also observed. The North region experienced the largest relative increase in hospitalizations (+357.9%), whereas the Central-West region demonstrated both a sustained upward trend and the highest proportion of emergency admissions (96.1%; $n = 4,206$). Regional inequalities in access to mental healthcare have been documented in Brazil [4], and considerable differences in CAPS coverage persist across federative units despite the nationwide expansion of the network [8]. Although CAPS implementation has been associated with reductions in psychiatric hospitalizations, its effectiveness depends on local service availability, integration with primary healthcare, workforce capacity, and the organization of referral and counter-referral pathways [7,8]. Differences in geographic accessibility, hospital capacity, socioeconomic vulnerability, and administrative coding practices may therefore have contributed to the regional patterns identified in this study [4,7,8]. The pronounced relative increase observed in the North should also be interpreted in light of its comparatively low baseline number of hospitalizations. Conversely, the absence of a statistically significant temporal trend in the South should not be interpreted as evidence of a lower burden, particularly given its higher baseline volume and the isolated peak observed in 2016.

From a health-system perspective, these findings support strengthening the early detection and longitudinal management of F40-F48 disorders within primary healthcare and the Psychosocial Care Network (RAPS). Greater integration among primary care services, CAPS, EDs, and hospital services may improve continuity of care and potentially reduce avoidable crisis-oriented admissions [2,6-8]. Prevention and intervention strategies should prioritize adolescents, young adults, and females while also addressing barriers that may limit men's engagement with mental healthcare [21-25]. Regional planning should account for local service capacity, geographic accessibility, and referral pathways. Furthermore, emergency and elective admissions should be monitored separately, as they represent distinct patterns of healthcare access and utilization.

This study has limitations inherent to ecological analyses based on secondary administrative data. The SIH/SUS database includes only hospitalizations financed by SUS and records hospital admission authorizations rather than unique individuals; therefore, repeated hospitalizations involving the same patient could not be identified. Diagnostic validity is also dependent on the accuracy and completeness of administrative coding. In addition, the database does not provide detailed information on clinical severity, psychiatric or medical comorbidities, treatment history, duration of illness, socioeconomic characteristics, or outpatient service utilization. These limitations preclude causal inference and restrict the interpretation of the observed associations. Changes in hospital admission practices, referral patterns, healthcare availability, and diagnostic coding over time may also have influenced the temporal trends identified.

Despite these limitations, the use of nationwide data over a 10-year period enabled the identification of important temporal, demographic, and geographic patterns in hospitalizations for neurotic, stress-related, and somatoform disorders in Brazil. The findings indicate a substantial increase in hospital utilization for these conditions, driven predominantly by emergency admissions and disproportionately affecting females and younger populations. These results underscore the need to strengthen accessible, continuous, and regionally responsive mental healthcare in Brazil, with particular emphasis on early identification, longitudinal management, and the prevention of potentially avoidable psychiatric crises.

Conclusions

Hospitalizations for neurotic, stress-related, and somatoform disorders increased substantially in Brazil between 2015 and 2024, with this growth driven exclusively by emergency admissions and accompanied by a progressive decline in elective hospitalizations. The temporary reduction observed during 2020-2021 was followed by a marked post-pandemic increase, suggesting a combination of disrupted access, accumulated demand, and persistent mental health needs. Women experienced the greatest increase and consistently presented higher risks of emergency hospitalization across most adult age groups and regions. Adolescents and young adults also emerged as particularly vulnerable populations, while the higher risk of elective hospitalization among men in selected strata suggests sex-specific differences in pathways of access to planned and crisis-oriented care. Substantial regional heterogeneity was identified, with the largest relative increases in the North and Central-West regions and no significant temporal trend in the South.

These findings indicate an increasing reliance on emergency services for conditions that may often be managed through timely, continuous, and community-based care. Strengthening early identification in primary care, expanding access to specialized outpatient treatment, improving coordination across the Psychosocial Care Network, and enhancing community-based crisis management may help reduce avoidable emergency hospitalizations. Policies should prioritize adolescents, young adults, and women while addressing barriers to mental healthcare among men. Regional planning should also account for differences in service availability, referral pathways, and population vulnerability. Continued monitoring of emergency and elective admissions as distinct indicators is essential for evaluating mental health policies and guiding the equitable allocation of resources within the Brazilian Unified Health System.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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