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Migraine and mood disorders in Brazil before and after the COVID-19 pandemic: an ecological study with narrative review

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Introduction

Migraine affects approximately 1 in 10 people worldwide and is among the leading causes of disability. Its bidirectional association with mood disorders (MDs) is robust: 50-60% of patients present anxiety and/or depression (ICHD-3, 2018, A12.3 and A12.8). The COVID-19 pandemic imposed psychosocial stress, isolation, and disruption of care, factors recognized as being associated with worsening of migraine and increased depressive and anxiety symptoms. Investigating how these two groups of conditions behaved in Brazil in the pre- and post-pandemic period is relevant for healthcare planning.

Objective

To evaluate the variation in the number of migraine and mood disorder cases in the Brazilian population aged 15 to 69 years between the pre-pandemic (2016–2019) and post-pandemic (2022-2025) periods, exploring the regional correlation between both.

Methods

An ecological, descriptive, and analytical epidemiological study using secondary data aggregated by year, age group, and region. Periods 2016-2019 and 2022-2025 are compared. Percentage variations and the Pearson correlation between the increase in MDs and migraine across the five regions were calculated. This is complemented by a narrative literature review on the impact of the pandemic on these conditions.

Results

MDs increased by 28.1% (195,781 250,745) and migraine by 7.6% (25,383 27,315). The increase in migraine was concentrated in individuals over 40 (40-49: +16.8%; 50-59: +17.3%; 60-69: +18.6%), with a decline among adolescents (15-19: -7.7%). Regionally, MDs rose in all regions; North (+54.9%), Southeast (+41.3%), Northeast (+41.1%); migraine increased mainly in the North (+101.4%) and Central-West (+37.7%), remained stable in the Southeast, and declined in the South (-12.4%). The correlation was positive, but moderate and non-significant (r=0.52; p=0.37). The literature corroborates, in Kuwait, >50% of patients experienced worsening of migraine during the pandemic, with anxiety/depression in 79.5% and chronification in 10.3%; affective symptoms were independent predictors of worsening (OR 1.56). Post-COVID patients with migraine had higher rates of anxiety (20.6 vs. 7.4%) and depression (20.6 vs. 10.3%) than controls. In the Brazilian ELSA-Brasil cohort, however, symptoms did not increase globally, suggesting population heterogeneity.

Conclusion

In the post-pandemic period, Brazil recorded an increase in both migraine and MDs, more pronounced for MDs (+28.1%) and geographically concentrated in the North region. Although the regional correlation was only moderate and non-significant (r=0.52; p=0.37), limited by the ecological design and the small number of regions, the convergence of trends and the consistency of the literature support the hypothesis of interaction between psychological distress and migraine. These findings reinforce the need for systematic screening of affective comorbidities in migraine patients and for integrated health policies, with special attention to the most vulnerable regions in contexts of health crises.

Keywords:
Migraine
COVID-19
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