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1077 – Breast cancer mortality trends and sociodemographic inequalities in Brazil, 1996–2024: a nationwide joinpoint analysis

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Introduction/Justification: Breast cancer (BC) is the leading cause of cancer-related mortality among Brazilian women. Despite national screening efforts, profound socioeconomic disparities heavily influence mortality outcomes. This study aims to analyze the temporal trend, sociodemographic profile, and regional burden of BC mortality in Brazil over a 28-year period.

Methods: An ecological, retrospective, descriptive-analytical study following STROBE guidelines was conducted using Brazilian Mortality Information System (SIM/DataSUS) data. Female breast cancer (ICD-10: C50) deaths recorded from 1996 to 2024 were analyzed. Frequencies were calculated for regions, age, race, and education level. Temporal trends were evaluated using Joinpoint regression to estimate Annual Percent Change (APC). Exempt from CEP approval (CNS 510/2016).

Results: Between 1996 and 2024, Brazil registered 384,251 BC deaths, reflecting a mortality increase of approximately 195% over the study period. Joinpoint analysis demonstrated a continuous, significant upward mortality trend (APC=3.92%; $p<0.05$) without inflection points. The burden concentrated in the Southeast ($n=200,364$; 52.1%), Northeast (20.2%), and South (17.9%). Peak mortality occurred at 50–59 years (23.6%), alongside substantial premature mortality at 40–49 years (16.8%). While most deaths involved White women (58.8%), Black and Brown populations also faced a high burden (32.8%). Striking educational disparities were observed: mortality was highest among women with 4–11 years of schooling, 37.9% ($n=145,410$), whereas those with ≥ 12 years comprised only 11.9% ($n=45,614$).

Conclusion: Breast cancer mortality in Brazil has shown continuous growth over nearly three decades and reflects significant sociodemographic inequalities. The high mortality among women with a lower educational attainment and the substantial proportion of premature deaths highlight persistent barriers to early detection and timely treatment. The higher mortality burden observed in the Southeast region may be partially explained by more efficient reporting systems and lower reporting rates compared to other regions. These findings reinforce the need for targeted public health strategies focusing on vulnerable populations and improving cancer surveillance systems to reduce mortality trends.

Ethics: Public data.

Keywords: breast neoplasms; healthcare disparities; mortality; Epidemiology; public health.