

## **IMPACT OF THE IMPLEMENTATION OF MAMMOGRAPHY EXAMINATION ON THE BREAST CANCER MORTALITY RATE IN BRAZIL (2010 - 2021): A TEMPORAL ANALYSIS.**

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**Introduction:** Malignant breast neoplasms have a high incidence and are important causes of morbidity and mortality in the female population. Thus, to ensure early screening and treatment, in 2014, the Ministry of Health established, through the Unified Health System, the guarantee of free mammography examinations for Brazilian women in all age groups, with the age group from 50 to 69 years being the priority, following the WHO recommendation. Therefore, it is essential to analyze the effective impact of early screening of this disease. **Objective:** To analyze the temporal trend and projections of mortality due to malignant breast neoplasm in Brazil between 2010 and 2021. **Methods:** This is a cross-sectional, observational and retrospective study, which used secondary data from the Department of Information Technology of the Unified Health System (DATASUS) on mortality due to Malignant Breast Neoplasm and Outpatient Production of mammography exams. The number of deaths was used to calculate the mortality rate. The collected data were separated into tables in Excel®. For modeling and forecasting, the ARIMA (AutoRegressive Integrated Moving Average) model was used, which is suitable for non-stationary time series. **Results:** In the period from 2010 to 2021, 190,344 deaths were recorded in Brazil. The year with the highest number was 2021, with 18,361 (9.64%) deaths, and the year with the lowest number was 2010, with 12,853 (6.75%). Regarding education, the largest number of deaths were associated with those who lacked formal education or had incomplete elementary school (1 to 7 years), with 75,302 (39.56%) and the youngest were found with no education - 15,265 (8%) - and had completed secondary or higher education (12 years or more) - 24,072 (12.64%). The temporal analysis demonstrated an increasing trend until 2019, when it began to decline until the end of 2020, demonstrating a growing trend again. The forecast test demonstrated monthly values and trends below or following the pattern recorded over the years presented in the time series of the real rate. **Conclusion:** The introduction of mammography in the SUS aimed to reduce mortality from breast cancer by performing early diagnosis. However, there was a notable increase in mortality or its stabilization over the years, which can be explained by greater effectiveness in diagnosing breast cancer with the use of the exam, reducing underreporting of the disease. Furthermore,

an inverse relationship was observed between education level and the number of deaths from breast cancer, reflecting the notable impact of the socioeconomic conditions of patients and the prognosis of the disease.

**Keywords:** Breast neoplasm; mammography; mortality