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### ACCEPTED MANUSCRIPT

# Socioeconomic changes in Brazil impacted breast cancer indexes at the beginning of the 21st century?

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#### **Highlights**

- Income inequality and socioeconomic development are associated with breast cancer mortality.
- The increase of HDI reflects the improvement of life expectancy, quality of live and education.
- Mortality is influenced by reproductive patterns, exposure to hormones, infectious etiologies.
- It is essential to improve living conditions, early diagnosis and treatment of breast cancer.

#### **Abstract**

**Objectives**: To analyze the relationship between Socioeconomic development, income inequality and breast cancer mortality in Brazil. **Setting**: Ecological study. **Participants**: Brazilian Women Primary and secondary outcome measures: Age-standardized Hospital admission rates and mortality due to breast cancer in Brazilian Women's were analyzed. Deaths due to breast cancer were obtained from Department of Informatics of the Unified Health System. Human Development Index (HDI) and Gini Index were obtained from the United Nations Development Program. The gross domestic product was obtained from the World Bank. The period was between 2010 and 2014. The annual percentage change (APC) and average annual percentage change (AAPC) were estimated. Linear regression adjusted for income per capita was performed. **Results**: There was a significant increase of 14.5% in breast cancer mortality (AAPC, 3%; 95% CI, 2 to 3%), an increase of 21.4% in the hospital admission rate (AAPC, 5%; 95% CI, 1 to 10%), a 4.6% decrease in the Gini index (AAPC, -0.09; 95% CI, 0.10 to -1.0%), and a 5.4% increase in the HDI (AAPC, 6%; 95% CI, 6 to 7%). Besides, the increase of 0.01 in the HDI is related to an increase of 1.4 deaths per

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