

# AB014. The disease burden, risk factors and temporal trends in breast cancer in low- and middle-income countries: a global study

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**Background:** Breast cancer poses a significant threat to women's health and places a burden on healthcare systems worldwide. However, low- and middle-income countries (LMICs) often have insufficient breast cancer prevention, treatment, and understanding of risk factors. This study aims to investigate the disease burden, risk factors, and temporal trends of breast cancer specifically in LMICs.

**Methods:** From 1990 to 2019, this study extracted incidence, prevalence, disability-adjusted life years (DALYs) and breast cancer risk factors from the Global Burden of

Disease (GBD) databases for 204 countries or territories. Temporal trends were examined using joinpoint regression analysis.

**Results:** Among the income groups, the lower middle-income category had the highest DALYs value, with 1,787 years per 100,000 people. In the map analysis, 91% of African and Middle Eastern countries had age-standardized DALYs rates higher than the crude rate. LMICs countries collectively accounted for 74% of the global burden of DALYs lost due to breast cancer in 2019. Between 1990 and 2019, the prevalence of behavior-related risk factors for breast cancer increased by 47% in upper-middle income countries and 19% in low-income countries. However, it remained relatively consistent in lower-middle income countries. In lower-middle income countries, the risk associated with metabolic syndromes was higher compared to the risk associated with behavioral factors alone. For the recent past decade, breast cancer incidences increased significantly in lower-middle income countries [average annual percentage change (AAPC): 1.69, 95% confidence interval (CI): 1.51–1.87,  $P < 0.001$ ], upper-middle income countries (AAPC: 1.32, 95% CI: 1.12–1.48,  $P < 0.001$ ), and low-income countries (AAPC: 1.62, 95% CI: 1.57–1.68,  $P < 0.001$ ).

**Conclusions:** Breast cancer affects women globally, particularly in LMICs. This research shows how breast cancer in LMICs is aggravated by low resources and healthcare infrastructure. To successfully reduce breast cancer in these contexts, future studies must emphasize healthcare resource allocation.

**Keywords:** Breast cancer; low- and middle-income countries (LMICs); disease burden; risk factors; temporal trends

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## Footnote

*Conflicts of Interest:* All authors have completed the ICMJE uniform disclosure form (available at <https://jphe.amegroups.com/article/view/10.21037/jphe-2023-apru-ab014/coif>). The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all

aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). This study was approved by the Survey and Behavioural Research Ethics Committee, The Chinese University of Hong Kong (No. SBRE-22-0826) and individual consent for this retrospective analysis was waived.

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