

# Review of: "Effect of Ethnic Differences in Breast Cancer Presentation and Prognosis in Singapore"

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**Potential competing interests:** No potential competing interests to declare.

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**Title:**

"Effect of Ethnic Differences in Breast Cancer Presentation and Prognosis in Singapore"

**Summary:**

This study investigates the impact of ethnic differences on breast cancer presentation and prognosis in Singapore, particularly focusing on triple-negative breast cancer (TNBC). Using data from the Singapore Cancer Registry (SCR) and the Joint Breast Cancer Registry (JBCR), the study retrospectively analyzes breast cancer patients from 1960 to 2019.

**Background:**

Breast cancer is a predominant health concern in Singapore, representing the leading cancer among women. TNBC, though accounting for only 10-15% of all breast cancers, is notably aggressive and linked with poor prognosis. Given Singapore's multi-ethnic population comprising Malays, Chinese, and Indians, the study aims to elucidate the variations in incidence and prognosis of breast cancer among these ethnic groups.

**Methods:**

The study utilizes data from the SCR's 50th Monograph and the JBCR's Annual Report 2022. Ethnicity is categorized into Indian, Malay, and Chinese. Dependent variables include incidence, relative risk, median age at diagnosis, mortality, survival, and tumor characteristics. Additionally, survival analysis of 289 TNBC patients at Singapore General Hospital (SGH) was conducted.

**Results:**

Malay women, despite having the lowest age-standardized incidence rate (ASIR), exhibited the lowest overall survival (OS) and highest age-standardized mortality rate (ASMR). They were diagnosed at a younger median age (51.3 years) and had the highest rates of grade 3 tumors (56%) and advanced-stage tumors (42%). Among TNBC patients at SGH, Indians showed the poorest OS compared to Malays and Chinese.

**Conclusion:**

The study identifies significant ethnic disparities in breast cancer presentation, biology, and prognosis in Singapore, with Malay women predominantly experiencing poorer outcomes. Factors such as lifestyle, obesity, socioeconomic status, and genetic predispositions are potential contributors. The findings underscore the necessity for targeted interventions to ameliorate outcomes for ethnic minorities, reflecting the intricate nature of breast cancer disparities in Singapore.

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#### Detailed Review:

##### Introduction:

The introduction effectively contextualizes breast cancer as a critical health issue in Singapore, emphasizing its prevalence and the aggressive nature of TNBC. The rationale for focusing on ethnic differences is well-articulated, highlighting the lack of extensive research on this topic within the Singaporean context.

##### Methods:

The methodology is robust, leveraging comprehensive data sources such as the SCR and JBCR. The study's retrospective design is appropriate for analyzing long-term trends and outcomes. However, the exclusion of data from other races might limit the generalizability of the findings. Detailed descriptions of the independent and dependent variables, along with the statistical analysis techniques, ensure transparency and reproducibility.

##### Results:

The results section presents a clear and detailed account of the findings. The data on ASIR, median age at diagnosis, tumor characteristics, and survival rates are well-documented and supported by tables and figures. The distinction between the different ethnic groups' outcomes is thoroughly analyzed, providing valuable insights into the disparities.

##### Discussion:

The discussion aptly interprets the findings, linking them to existing literature and potential contributing factors. The identification of lifestyle, obesity, socioeconomic status, and genetic predispositions as influencers of disparities is well-founded. The emphasis on the need for targeted interventions aligns with the study's objectives and implications.

##### Conclusion:

The conclusion succinctly summarizes the key findings and their implications. It reiterates the necessity for targeted strategies to address the disparities and improve outcomes for ethnic minorities. The study's limitations, such as the exclusion of other races and potential confounders, are acknowledged, providing a balanced perspective.

##### Recommendations:

1. Inclusion of Other Races: Future studies could include data from other racial groups to enhance the generalizability of

the findings.

2. Longitudinal Studies: Conducting longitudinal studies could provide deeper insights into the progression and prognosis of breast cancer across different ethnicities.

3. Intervention Strategies: Developing and testing targeted intervention strategies to address the identified disparities would be beneficial.

4. Broader Socioeconomic Factors: Examining broader socioeconomic factors and their impact on breast cancer outcomes could offer a more comprehensive understanding.

#### Final Verdict:

This study is a significant contribution to understanding the ethnic disparities in breast cancer presentation and prognosis in Singapore. The methodology is sound, the results are well-presented, and the discussion is insightful. The study is recommended for publication with minor revisions as suggested.