

Female Breast Cancer Survival in North Carolina

By

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Introduction and Background

Female breast cancer is the most commonly diagnosed cancer in North Carolina. It also accounts for the largest number of cancer-related deaths among women. It is anticipated that 9,772 females in North Carolina will be diagnosed with and 1,391 females will die of cancer of the breast in 2015¹. The survival of all patients diagnosed with cancer in a given population is one of the most important measures of the overall effectiveness of the health-care system in the treatment and management of cancer². The North Carolina Central Cancer Registry (NC-CCR) is responsible for monitoring the cancer burden on the citizens of North Carolina. All health care providers are required by law to report all cancer cases diagnosed or treated in North Carolina to the CCR.

Specific Objectives of the Study

- i) To examine five years breast cancer relative survival among African-American and White women by stage categories.
- ii) To examine survival differences among African-American and White women.

Data and Methods

NC CCR female breast cancer Incidence data diagnosed from whites and African-American Women from 2006 through 2010 were used for the analysis. These cases were either in situ or malignant. Relative survival analysis was estimated using SEER* Stat, based on Ederer II method. Survival was based on presumed alive assumption³. Cancer Stages: localized, regional, distant and unknown at the time of diagnosis used for survival analysis. Declared or reported race or ethnicity of women grouped into two categories: white and African-American.

Variable definition

Stage at diagnosis

Stage at diagnosis was based on the NAACCR field: SEER summary stage 2000. It was defined by the following groups: 1) in situ; 2) localized; 3) Regional (all regional types); 4) Distant (Distant sites/nodes involved); 5) unknown (not applicable; unknown/unstaged, blanks).

Results

There were 33,564 breast cancer cases included in the study. Overall, there is a gradual decline in relative survival from year 1 (97.3%) to year 5 (92.9%) for all selected cases. The results by categories are presented as survival by the end of the 5-year period.

Figure 1. Overall survival: Female Breast Cancer 2006-2010

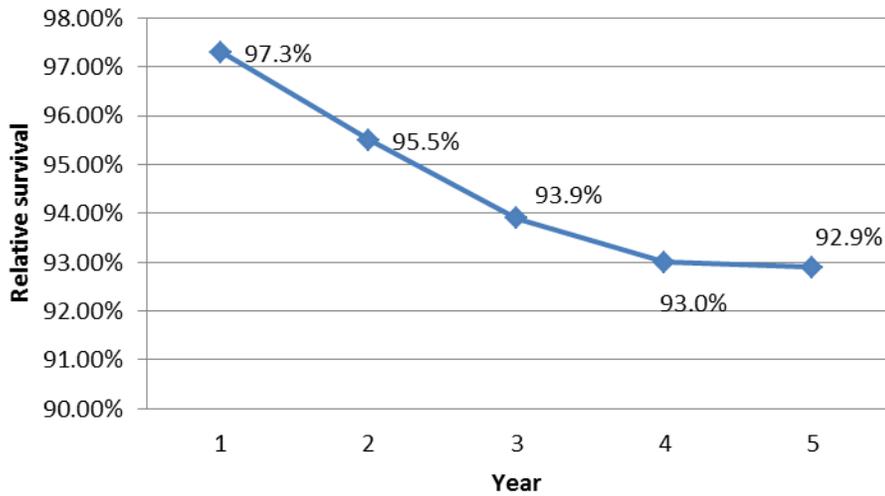
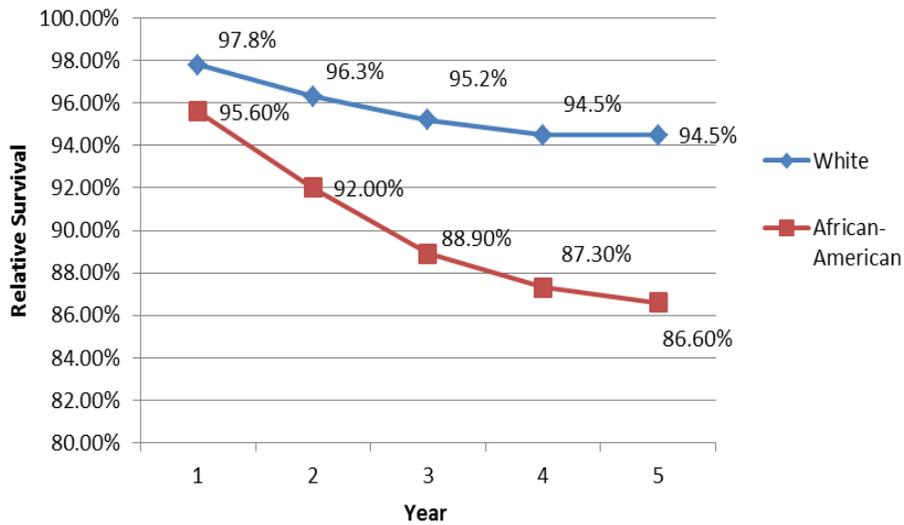
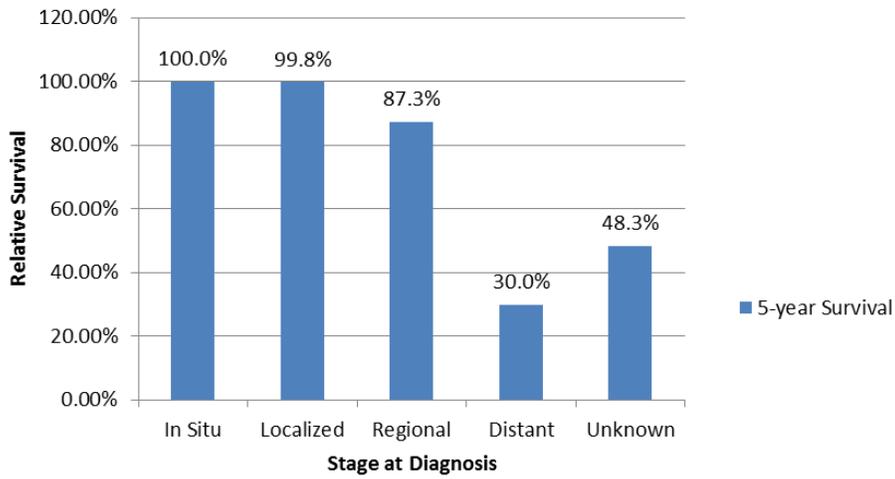


Figure 2. Relative Survival by Race: Female Breast Cancer 2006-2010



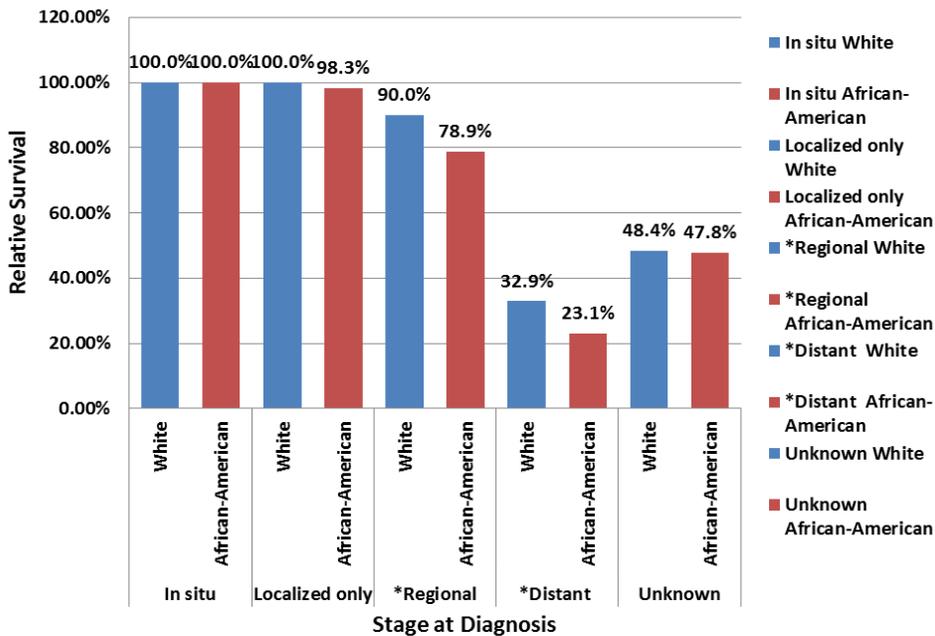
*Survival rates are higher among Whites for entire study period at $p < .05$ level.

Figure 3. 5-year Survival by Stage at Diagnosis: Female Breast Cancer 2006-2010



*Survival rates significantly differed across all stage categories at $p < .05$ level, except between in-situ and localized stages.

Figure 4. 5-year Survival by Race and Stage: Female Breast Cancer 2006-2010



* Survival rates significantly differed between races at $p < .05$ level.

Discussions

The analysis showed that stage at diagnosis is a major factor in breast cancer survival. However, racial disparity in cancer survival persisted among cases diagnosed in regional and distant stages. The results also suggest the need for increased preventive breast cancer screening for earlier diagnoses among underserved populations. Proper intervention may reduce the disparities in cancer survival.

References

1. <http://www.schs.state.nc.us/data/cancer.cfm>
<http://www.schs.state.nc.us/schs/CCR/proj15site.pdf>
2. Michel P Coleman, Cancer Survival: Global Surveillance with Stimulate Health Polcy and Improve Equity. Lancet 2014,383:564-73.
3. Surveillance Research Program, National Cancer Institute SEER*Stat software version SEER*Stat 8.1.5.

Acknowledgements

The authors would like to acknowledge the support from the North Carolina State Center for Health Statistics and the North Carolina Central Cancer Registry (NC CCR) for this study. The incidence data used in this study for survival analysis were collected

by the North Carolina Central Cancer Registry, which participates in the National Program of Cancer Registries (NPCR) of the Centers for Disease Control and Prevention (CDC). The NC CCR acknowledges the CDC for its financial support of this project under cooperative agreement. The contents of this report are the responsibility of the author and do not necessarily represent the views of the CDC.