

UNDERSTANDING THE CONSEQUENCES OF CO-EXISTING MEDICAL CONDITIONS AMONG WOMEN DIAGNOSED WITH BREAST CANCER IN MISSOURI

Commissioned by Women's Foundation with funding support from Missouri Foundation for Health. Kala Visvanathan MD, MHS and Avonne Connor PhD, MPH, Johns Hopkins Bloomberg School of Public Health

EXECUTIVE SUMMARY

Missouri has high rates of mortality from female breast cancer as well as other chronic diseases such as type 2 diabetes, cardiovascular disease, hypertension, and kidney disease. There is growing evidence that women with co-existing conditions – or comorbidities – at the time of their breast cancer diagnosis may have a worse prognosis.

These conditions in women with breast cancer may also explain the high mortality rates among vulnerable populations such as those with low household incomes, those living in rural/underserved areas, as well as African Americans and the elderly. Understanding how these conditions impact mortality rates can provide patients, providers and policymakers with valuable insights into how to improve the overall health of women with breast cancer and increase longevity.

To better understand how common co-existing medical conditions affect the mortality of women diagnosed with breast cancer at the population level in Missouri, the Women's Foundation commissioned a first-of-its-kind study, bringing together a team of experienced population-based scientists and clinicians from Johns Hopkins

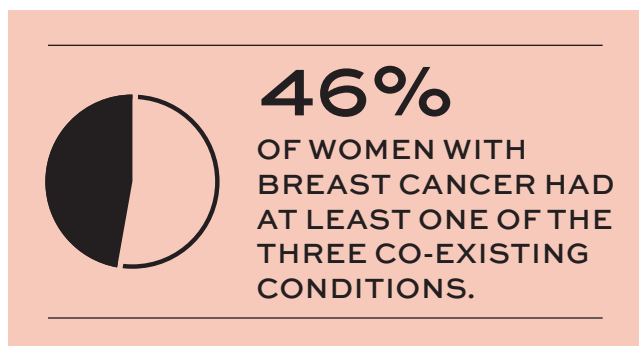
Bloomberg School of Public Health, Johns Hopkins School of Medicine, and the University of Missouri, which is home to the Missouri Cancer Registry and Research Center.

With a data set that included 36,581 Missouri women diagnosed with invasive breast cancer obtained from the cancer registry and hospital discharge data across the state, researchers identified the top three co-existing medical conditions: essential hypertension, cardiovascular diseases (CVD), and type 2 diabetes. A comorbidity “score” was also developed to look for differences in survival based on the number of co-existing conditions present at the time of diagnosis. This study benefited from a large sample and high-quality data representing the entire state over many years.

These results provide a window of opportunity for patients, providers, and policymakers to improve the overall health of women with breast cancer through closer monitoring and better management of their chronic diseases. They also send a strong message to cancer free women and their providers regarding the importance of maintaining good health throughout their lives.

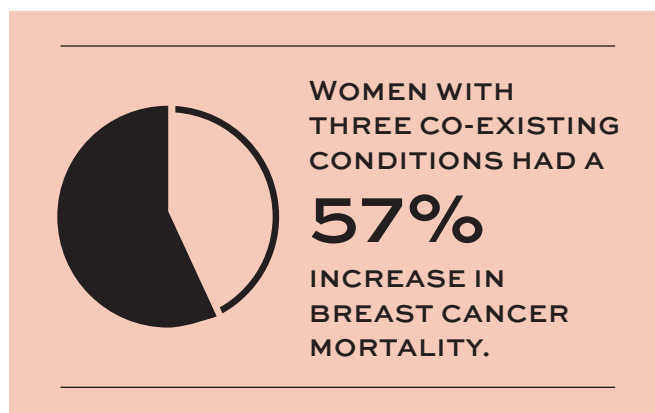
SOME KEY FINDINGS

- » The three most prevalent non-cancer conditions identified at the time of breast cancer diagnosis were type 2 diabetes, essential hypertension, and CVD. Notably, 46% of women with breast cancer had at least one of the three co-existing conditions. The prevalence of these conditions was higher among African American women with over half of them having at least one.



- » A higher percentage of women living in neighborhoods with >20% of the poverty level were burdened by 2 or more co-existing conditions (20.5%) compared to breast cancer patients living in neighborhoods with <5% of the national poverty level (11.1%).
- » There were differences in mortality based on the presence of co-existing conditions by age, race, and poverty. African American women with CVD had a two-fold risk of all-cause mortality.
- » Women living in large urban areas with all three co-existing conditions were more than three times more likely to die of any cause. Women with an increased poverty score also had higher mortality.
- » Researchers found an increase in breast cancer-specific mortality among women with co-existing conditions, supporting the hypothesis that these conditions may also contribute to disease progression of their

cancer. Specifically, women with two co-existing conditions had a 30% increase in breast cancer mortality and those with three co-existing conditions had a 57% increase in breast cancer mortality.



- » Researchers found that the number of hospitalizations was a strong predictor of survival among breast cancer survivors with co-existing conditions. Women with all three co-existing conditions were more than three times more likely to ever be hospitalized compared to women without the conditions. Breast cancer patients with five or more hospitalizations had over a 300% increase in risk of death compared to those without hospitalizations.



POLICY IMPLICATIONS

- » These results provide strong evidence that co-existing conditions such as CVD, diabetes and hypertension play a major role in the mortality of breast cancer patients in the state of Missouri.
- » Evaluation, treatment and monitoring of co-existing conditions at the time of breast cancer diagnosis has the potential to improve survival, particularly in vulnerable populations. This could have significant public health impact given the prevalence of breast cancer.
- » Frequency of hospitalizations may be a good indicator of the impact of co-existing conditions among breast cancer survivors.
- » The public health impact could be even greater through the implementation of approaches to reduce and control co-existing conditions in cancer free women so if they are diagnosed with breast cancer they are more likely to survive.



Funding for this project was provided by Missouri Foundation for Health. The Foundation is a resource for the region, working with communities and nonprofits to generate and accelerate positive changes in health. As a catalyst for change, the Foundation improves the health of Missourians through a combination of partnership, experience, knowledge, and funding.

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