Abstract 263: Correlates of Distance Traveled to Treatment Centers Among Breast Cancer Patients: The Role of Race/Ethnicity and Insurance Status

Diya Desai[1]
[1]Vanderbilt University

Abstract

Background: Black women and uninsured patients have a higher breast cancer mortality rate and are often diagnosed at more advanced stages. Prior research suggests transportation is a barrier to completing recommended treatment. This study examines whether race/ethnicity and insurance status are associated with the distance traveled to breast cancer diagnosis and treatment facilities. *Methods:* The study employed data from the National Cancer Database (NCDB) from 2013-2022 and included patients who were diagnosed with any stage of breast cancer at Commission on Cancer-certified centers in the United States. Patients with missing information on their racial/ethnic group, distance traveled, or insurance status were not included. Six ordinal categories of distance traveled (<5 miles, 5-9 miles, 10-24 miles, 25-49 miles, 50-99 miles, and >100 miles) were compared across racial/ethnic groups and insurance coverage groups. Z-tests were run to compare each proportion against the white patient group and privately insured patient group, and a chi squared test was run to determine if there was a correlation between insurance status and distance traveled and race/ethnicity status and distance traveled. *Results:* There was a significantly higher proportion of Black, Hispanic, and Asian American and Pacific Islander (AAPI) patients who traveled under 5 miles to their treatment compared to White patients. However, American Indian and Alaskan Native (AI/AN) patients had a greater proportion of patients that traveled over 100 miles to receive a diagnosis or treatment compared to White patients. Uninsured people were most correlated with shorter distance traveled to facilities, followed by Medicaid then Medicare patients. *Conclusion:* There is a correlation between race/ethnicity and distance traveled and between insurance status and distance traveled with racial and ethnic minority groups and uninsured patients being more correlated with traveling smaller distances. Racial and ethnic minority groups and uninsured patients may lack tools for extensive travel. Further research into how disparities stem from structural racism and shape access to health providers is necessary.

Introduction

A major factor affecting stage at diagnosis is travel time to a diagnosing facility.[1] Racial/ethnic minority groups and uninsured women may be less able to make long travels to health facilities because of lack of protective factors.[2] The majority of stage 1 breast cancers are diagnosed by screening mammograms and are caught early in tumor progression.[3] Low-income women and racial and ethnic minority women with breast cancer who rely on public transportation have difficulty making appointments and completing therapy.[5]

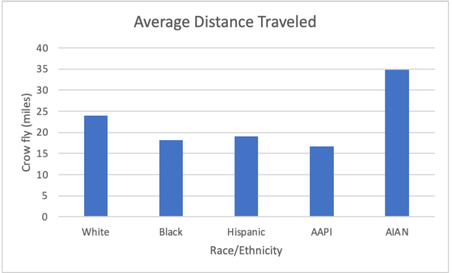
Methods and Materials

This paper utilized data from the National Cancer Database (NCDB). Racial designation was self-identified, and categories included White, Black, AI/AN, Asian or Pacific Islander, and other/unknown. Ethnicity was grouped as Hispanic or non-Hispanic.

This was a retrospective analysis looking at data collected from January 1, 2013, to December 31, 2022, examining all patients diagnosed with breast cancer older than eighteen years old (n=2,413,125). Exclusion criteria included participants who had a missing race or ethnicity, unknown distance traveled to the center, or missing insurance information. The Vanderbilt IRB board determined this study to be exempt from institutional review board approval. The NCDB uses a "crow fly" which means they use the straight-line distance between the zip code centroids to determine travel distance. Distance traveled is grouped into seven categories: less than 5 miles, 5-9 miles, 10-24 miles, 25-49 miles, 50-99 miles, greater than 100 miles, and unknown. Finally, insurance information is reported to a hospital by a patient and grouped into the categories not insured, privately insured, Medicaid, Medicare, government, and unknown.

All analysis was conducted on Microsoft Excel. Chi-squared test was used to determine the association between distance traveled and insurance status and distance traveled and race/ethnicity. Z-tests were used to compare white groups to other race/ethnicity groups and insured groups to other insurance statuses.

Results



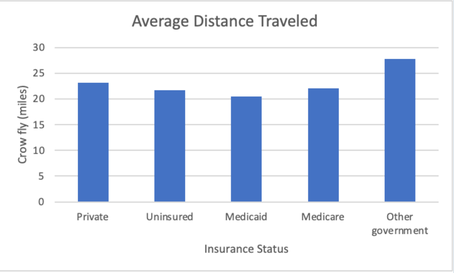


Figure 1 (left): average crow fly distance traveled to diagnosing/treatment facility for each race
Figure 2 (right): average crow fly distance traveled to diagnosing/treatment facility for each insurance status

Discussion/Conclusions

In this study of individuals diagnosed and receiving treatment for breast cancer in the NCDB, Black, Hispanic, and AAPI patients had lower proportions of patients who traveled long distances to receive care compared to White patients. This suggests that Black patients seek more support from nearby centers. AI/AN patients, however, were more likely to travel longer distances than even White patients. Patients covered by Medicare, Medicaid, and those who were uninsured were also less likely to travel longer distances compared to patients who were covered by other forms of government insurance and those who were privately insured. Government-insured patients were more likely to travel longer distances than even privately insured patients. These populations may not have protective factors against longer distances described by FCT and AHM and are therefore incapable of traveling longer distances. This study shows that racial and ethnic minorities and uninsured patients travel less far than privately insured, white patients but disparities still exist in mortality rates. Racial and ethnic minorities and uninsured patients may have higher mortality rates because of existing structural factors in shaping access, who can afford to live farther away from hospitals and urban areas, and how far someone travels to healthcare.

Contact

Diya Desai
Email: diya.desai@Vanderbilt.edu
Phone: (318)-834-6325

References

1. Conti, Benoit, et al. "Influence of Geographic Access and Socioeconomic Characteristics on Breast Cancer Outcomes: A Systematic Review." PloS One, vol. 17, no. 7, 2022, pp. e0271319–e0271319, https://doi.org/10.1371/journal.pone.0271319.
2. Henry, K.A., Boscoe, F.P., Johnson, C.J. et al. Breast Cancer Stage at Diagnosis: Is Travel Time Important?. J Community Health 36, 933–942 (2011). https://doi.org/10.1007/s10900-011-9392-4
3. Hoppe, Ethan J., et al. "Racial Disparities in Breast Cancer Persist despite Early Detection: Analysis of Treatment of Stage 1 Breast Cancer and Effect of Insurance Status on Disparities." Breast Cancer Research and Treatment, vol. 173, no. 3, 2019, pp. 597–602, https://doi.org/10.1007/s10549-018-5036-z.
4. Iqbal J, Ginsburg O, Rochon PA, Sun P, Narod SA. Differences in Breast Cancer Stage at Diagnosis and Cancer-Specific Survival by Race and Ethnicity in the United States. JAMA. 2015;313(2):165–173. doi:10.1001/jama.2014.17322
5. Lin, Y., Wimberly, M. C., Da Rosa, P., Hoover, J., & Athas, W. F. (2018). Geographic access to radiation therapy facilities and disparities of early-stage breast cancer treatment. Geospatial Health, 13(1). https://doi.org/10.4081/gh.2018.622

This presentation is the intellectual property of the author/presenter. Contact them for permission to reprint and/or distribute.

© Poster Template by Genigraphics® 1.800.790.4001 www.genigraphics.com