CORRESPONDENCE

Re: Race, Socioeconomic Status, and Breast Cancer Treatment and Survival

A recent report in the Journal (1) attempted to “disentangle the influence of race and socioeconomic status on breast cancer stage, treatment, and survival.” The complex constellation of racial and socioeconomic factors in chronic illness is not easily deconstructed, and I would argue that this study has not fully realized this goal.

The problem is that, in the Bradley et al. study, race and socioeconomic status (SES) were inextricably linked, much as they are in real life. That is, only 13% of the white women lived in census tracts with 13% or more in poverty, whereas 84% of African-American women lived in census tracts with 13% or more in poverty. Thus, race and SES were essentially the same variable: most poor women were African-American, and most women who were not poor were white. Therefore, an analysis with race as an independent variable and SES as a covariate is tantamount to looking at the effect of race while controlling for race. What does it mean to attribute certain outcomes, as Bradley et al. have done, to residing in census tracts with 13% or higher poverty, when almost 90% of those residents are African-American?

A few critical issues should be considered when defining income and SES. First, using federal guidelines for poverty level may obscure how SES affects health, given that federal guidelines place individuals at the most marginal levels of existence. That is, the income levels that are used to connote poverty are too strict. Many families who subsist on minimal levels of income may still not be classified as living in poverty. For example, the poverty level for a family of 2 in 2001 is $11,610 (2). Thus, a woman caring for a child at an income level of $12,000 will not be classified as living in poverty, despite the harsh circumstances of her financial situation. Second, the authors recognize that census tracts are also not ideal units for measuring poverty. Indeed, in 1990, in Brooklyn, New York, two particular census tracts had essentially identical per capita incomes. However, in one, whites earned only $3023 more than African-Americans did; in the other, they earned $11,257 more—and these census tracts are separated by only two house numbers (3). Third, defining SES for African-Americans can be a tricky enterprise. African-Americans have lower total assets, are more likely to live in segregated neighborhoods and to be the first generation with wealth in the family (4), and earn less than whites with the same education. And, in many cities, wealthy and poor African-American families often live together in the same neighborhood, if not on the same street. These conditions are largely non-existent in predominantly white neighborhoods. Thus, using typical factors of income and education may not be appropriate when comparing the two groups.

In the final analysis, we must question whether separating race and SES may, in many ways, be an artificial distinction. Although we may be able to control for SES as a discrete statistical variable, can we do it as a real life experience? That is, in the United States, centuries of structured inequalities based on race have created conditions in which African-Americans face a very different social reality (including economic status) than European-Americans. Then, how are we to understand the ramifications on health of “being poor” when “being poor” disproportionately means “being black”?

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REFERENCES


NOTE

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RESPONSE

We appreciate the comments of Dr. Kwate about our manuscript “Race, Socioeconomic Status, and Breast Cancer Treatment and Survival” (1). The complexities raised by Dr. Kwate regarding estimations that use both race and socioeconomic status (SES) are valid. As stated in our article (p. 495), “the fact remains that African-American women are more likely to have lower incomes than white women.” Undeniably, this disparity in SES between African-Americans and white Americans warrants further attention in the research and policy communities. However, the points raised by Dr. Kwate do not alter our study’s conclusions.

Although we agree with the gestalt of Dr. Kwate’s comments about the relationship between census tract data and SES, we take issue with the statement that “an analysis with race as an independent variable and SES as a covariate is tantamount to looking at the effect of race while controlling for race.” This assertion is weakened by the following conditions.

First, we included percent poverty in a census tract as a measure of SES, although fraught with imperfections (2), to capture the effects of living in a low-income area that might otherwise be absorbed by variables for Medicaid enrollment. In our study (1), the odds ratios for census tract residency did not reach statistical significance in the adjusted logistic regressions (Table 3, p. 494) that predicted cancer stage at diagnosis, receipt of radiation following breast-conserving surgery, receipt of surgery, and death. The only instance in which census tract residency was statistically significant was in the prediction of breast-conserving surgery versus mastectomy ($P = .049$). In a separate analysis (results not shown), we dropped census tract residency from our equations, and the odds ratios for all outcomes for African-American women remained virtually unchanged. Thus, the amount of variation explained by census...
tract residency was not absorbed by the variable for race.

Second, Medicaid, another measure we used for SES, is a means-tested program where enrollment criteria are assessed for each individual prior to enrollment. Although some racial variation in income and wealth may exist among Medicaid enrollees, this variation is likely to be smaller than the variation in income and wealth found in individual census tracts. In a separate analysis of women who were insured by Medicaid, we found that the only racial difference in outcomes was in the probability of death—African-American women were less likely to die within the 2-year study period than were white women (Table 1). Therefore, in a health-care system in which health insurance is provided to low-income persons, African-American women are statistically just as likely as white women to receive an early-stage breast cancer diagnosis, surgery, and follow-up radiation if breast-conserving surgery is provided. Alternatively, when the Medicaid-insured women were compared with women who were not insured by Medicaid, some of whom were likely to be uninsured or underinsured and thus would bias the results toward not finding a difference between the groups, adverse outcomes in diagnosis, treatment, and survival were present. Therefore, within a sample that was more homogeneous with respect to income, racial effects were not apparent; however, when such a sample was compared with the sample of women who were not insured by Medicaid, poor persons, regardless of their race, were more likely to have undesirable cancer outcomes.

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REFERENCES


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Table 1. Adjusted odds ratios (95% confidence intervals) for breast cancer stage at diagnosis, treatment, and death based on data from Michigan Medicaid, 1996–1997

<table>
<thead>
<tr>
<th>Variable</th>
<th>Late-stage cancer at diagnosis (N = 593)</th>
<th>Breast-conserving surgery (N = 500)*</th>
<th>Breast-conserving surgery with radiation (N = 247)</th>
<th>No surgery (N = 593)</th>
<th>Death (N = 593)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>African-American†</td>
<td>1.01 (.72 to 1.40)</td>
<td>.973</td>
<td>1.22 (.83 to 1.80)</td>
<td>.303</td>
<td>.69 (.41 to 1.17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.00 (.53 to 1.85)</td>
<td>989</td>
<td>.46 (.28 to .76)</td>
</tr>
</tbody>
</table>

*Reference group: women who had any surgery.
†Reference group: white women. Equations include variables for age at diagnosis, patient older than 65 years, cancer stage at diagnosis, and surgery type (in the equation predicting death only).