Albain et al. (1) recently reported that African American patients experience increased mortality from sex-specific cancers and suggested that “inherited genetic differences across races” may be to blame. The authors’ speculation about genetic differences, however, reaches far beyond the data while neglecting important alternative explanations for their results.

First, Albain et al. provide no information about how they measured the central variable: race. This omission makes it impossible to disentangle the many behavioral, environmental, or genetic influences on cancer mortality that may be associated with race (2). Moreover, Albain et al. analyze 35 trials from 1971 through 2001, which may have used different methods of measuring race. The comparisons between African American patients and white patients that Albain et al. present, therefore, are purely descriptive; they provide no basis for making causal inferences about why the reported disparities exist.

Second, Albain et al. present no evidence to support their conclusion that genetic differences, in interaction with tumor biology and hormonal factors, contribute to racial disparities in mortality. It would be interesting to test this hypothesis. But genetic inferences require genetic data, and Albain et al. present none.

Third, Albain et al. examine multiple cancer phenotypes but do not correct for multiple testing. There remains debate about the best methods for multiple-testing correction, but it is clear that some form of correction is required when clinical trials involve multiple endpoints (3). It is likely that some of the apparent racial disparities Albain et al. report would disappear if they included such corrections.

Fourth, although Albain et al. claim to control for socioeconomic status, their measurement of socioeconomic status is flawed. They do not have data on individual-level socioeconomic status, so instead they used US Census data on median income and education from the zip code in which patients lived (though not necessarily during the decennial census). Previous research demonstrates that such area-based adjustments for individual-level socioeconomic status do not work (4). Furthermore, we know that measures based on other geographic units (eg, census tracts) or on other indicators of material deprivation (eg, percent poverty) are better able to detect social gradients in health (5). Given these limitations, Albain et al. overstate the evidence that racial disparities are not attributable to socioeconomic inequalities.

Fifth, even an ideal measure of socioeconomic status could not exclude the possibility that disparities in cancer mortality are social in origin. Mounting evidence indicates that institutional and interpersonal racism shape human biology through pathways beyond socioeconomic status (6). Thus, within similar socioeconomic status levels, African American participants and white participants likely differ in a wide range of exposures related to sex-specific cancers, including reproductive history, residential segregation, access to food stores, availability of safe places for exercise, exposure to environmental toxins, experiences of racial discrimination, and other social stressors. In contrast to alleged genetic differences, these factors have been shown to contribute to disparities in cancer mortality between African American and white patients (7).

Albain et al. make a common error. They appear to find an association between a disease phenotype and an undefined race variable and argue that unmeasured genetic differences are the most likely causes. This conclusion is unfounded and runs the risk of diverting attention from potentially modifiable aspects of the social environment that may contribute substantially to racial inequalities in cancer mortality.

CLARENCE G. GRAVLEE
CONNIE J. MULLIGAN

References


