

## Evidence of acculturation's impact on dietary quality among non-Hispanic blacks

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Unhealthy eating is linked to adverse health outcomes such as obesity (1), coronary heart disease (2), and all-cause mortality (3). Estimating total diet quality and healthfulness is challenging in many epidemiologic studies of diet-disease associations. In fact, the assessment of diet quality entails applying data-driven dietary patterns (factor and cluster analysis) and non-data-driven indexes, including the Healthy Eating Index (HEI) and the Dietary Approaches to Stop Hypertension (DASH) diet. The latter methodology is popular in evaluating conformity to the recent Dietary Guidelines for Americans (4). As independent community agents, adults make food choices constrained by environmental, psychosocial, economic, and individual factors. Most notably, food choices depend on the evolving food supply, overreliance on foods consumed away from home, how foods are advertised or marketed, and differential prices between healthy and unhealthy foods (5). In recent studies, food cost was negatively associated with dietary quality, with lower-cost diets being more energy dense coupled with poorer nutrient adequacy (6). Macro- and community-level factors, including physical, legal, and policy factors that influence eating behaviors at the household and individual level were previously shown to differentially affect racial and ethnic minority populations (5).

Among individual factors, some adults may select foods on the basis of personal preferences, considering taste and palatability, whereas others may focus on convenience or personal beliefs with regard to health effects (7). These preferences influence diet quality through day-to-day food choices and can explain socioeconomic and racial disparities in dietary behaviors. In fact, diet quality is poorer among individuals with a lower educational level or household income (7). Poor socioeconomic status was also linked to elevated depressive symptoms, potentially reducing dietary quality (8).

In the context of health disparities, the focus has been on contrasting socioeconomic and racial strata with respect to behaviors, lifestyle factors, and health outcomes. Although the socioeconomic gradient is self-evident in evaluating the concomitant influence of wealth (income, occupation) and knowledge (education) on individuals' behaviors, the influence of race on those outcomes is more complex because it combines socioeconomic, genetic, psychosocial, environmental, and cultural influences into one construct that is often difficult to disentangle. Cultural differences

between racial and ethnic groups may manifest as food choices on the basis of group-level taste preferences and health beliefs.

The study by Brown et al. (9) in this issue of the Journal adds the new dimension of acculturation to the construct of race, by comparing foreign-born, non-Hispanic (NH) blacks with their US-born counterparts. The study uses extensive and recent nationally representative survey data on adults, and assembles 2 validated measures of dietary quality, namely the alternative HEI-2010 and the DASH indexes (9). The study hypothesizes that nativity and length of residence in the United States within a specific racial group are key factors to consider when evaluating disparities in overall diet quality and its health consequences. Although acculturation may act differently among racial/ethnic groups, the authors hypothesize that foreign-born NH blacks tend to preserve a good-quality diet over time. The rationale behind this hypothesis is that foreign-born adults learned at younger ages to prepare or consume healthier foods before moving to the United States and that their diet becomes worse in direct proportion to their duration of US residency. The authors showed that the alternative HEI-2010 and DASH were higher among foreign-born NH blacks than in their US-born counterparts. This mostly applied to the consumption of fruit, fruit juices, vegetables, whole grains, and omega-3 fatty acids. However, the duration of US residence was not an important factor to determine diet quality among foreign-born individuals within that racial/ethnic group.

Therefore, although it is possible that adopting the new US culture over time is key in influencing eating habits among foreign-born NH blacks, the data do not support the duration-of-residence hypothesis. Foreign-born status may confer protection against poor health behaviors if the country of origin has healthier dietary practices than in the United States. Other studies have noted the effect of foreign-born status on health. For example, data from the 1992–1995 Health Interview Survey showed that immigrants had better overall health than US-born individuals (10). These data also showed that the health benefits of immigrant status

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declined with increased duration of US residence (10), a finding not supported by Brown et al. (9). Nevertheless, Brown et al. have established that dietary quality may underlie one source of immigrant health advantage.

There are likely unmeasured differences, socioeconomic and otherwise, between foreign-born and US-born NH blacks unaccounted for in the study's multivariable models. The authors acknowledge that, unlike other groups such as Hispanics, foreign-born blacks are, on average, more educated and have higher incomes than their US-born counterparts (9). Although the association of nativity with diet quality was multivariable-adjusted with several socio-economic indicators such as education and income, other markers like literacy and educational quality may be incommensurate between foreign-born and US-born NH blacks, rendering this adjustment insufficient. This is partly due to segregation and institutionalized racism, which affects the quality of education in the United States among NH blacks, as acknowledged by the authors (9). Thus, health literacy rather than cultural food preferences may be a key factor explaining the associations between nativity and diet quality. Studies comparing health literacy, wealth, and socioeconomic and environmental measures between foreign-born and US-born NH blacks are still needed. Qualitative studies are also key in disentangling cultural from economic influences on food choices according to nativity and duration of residence. Another possible explanation is the "salmon bias," by which unhealthy migrants with poorer eating habits tend to go back to their country due to illness at a higher rate than healthier migrants (11). This tends to exaggerate cross-sectional disparities between foreign-born and US-born adults in health outcomes and behaviors. Ultimately, longitudinal studies are needed in which NH blacks are followed since arrival into the United States and compared with a US-born cohort over time.

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