Research Article

Greater Dietary Acculturation (Dietary Change) Is Associated With Poorer Current Self-Rated Health Among African Immigrant Adults

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ABSTRACT

Objective: Investigate the relationship between dietary acculturation and current self-rated health (SRH) among African immigrants, by country or region of origin.

Design: Cross-sectional, mixed-methods design using baseline data from longitudinal study of immigrants granted legal permanent residence May to November, 2003, and interviewed June, 2003 to June, 2004.

Setting: 2003 New Immigrant Survey.

Participants: African immigrants from a nationally representative sample (n = 763) averaged 34.7 years of age and 5.5 years' US residency; 56.6% were male, 54.1% were married, 26.1% were Ethiopian, and 22.5% were Nigerian.

Main Outcome Measure(s): Current SRH (dependent variable) was measured using 5-point Likert scale questions; dietary acculturation (independent variable) was assessed using a quantitative dietary change scale.

Analysis: Multivariate logistic regression tested the relationship of dietary acculturation with current SRH ($\alpha = .05$; $P < .05$ considered significant); exploratory qualitative subset dietary analysis (n = 60) examined food/beverages consumed pre-/post-migration.

Results: African immigrants reporting moderate dietary change since arrival in the US had higher odds of poorer SRH status than immigrants reporting low dietary change (odds ratio, 1.903; 95% confidence interval, 1.143–3.170; $P = .01$). Among most dietary change groups, there was an increase in fast food consumption and decrease in fruit and vegetable consumption.

Conclusions and Implications: Nutrition educators and public health practitioners should develop targeted nutrition education for African immigrants who are older, less educated, and at increased health risk.

Key Words: acculturation, emigrants and immigrants, African continental ancestry group, food habits, minority health (*J Nutr Educ Behav*. 2014;46:226-235.)

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INTRODUCTION

Diet is an important determinant of health.[1,2] Evidence suggests that increased dietary acculturation—the adoption of dietary patterns (usual food and beverage consumption)[1] of the host country, is associated with negative health outcomes among immigrants (eg, poor self-rated health, increased body mass index, and overweight/obesity).[3,4] Little is known about the relationship of dietary acculturation to health outcomes among African immigrant adults,[5-9] although over 2.8 million Sub-Saharan African immigrants lived in the US in 2011[10] and blacks in the US (including US- and Africa-born blacks) are disproportionately affected by diet-related chronic diseases.[11,12] Few studies have considered the influence of country or region of origin differences, duration of residence, age at immigration, pre-migration dietary patterns, self-rated health (SRH), or chronic disease diagnosis on observed relationships between dietary acculturation and health outcomes among African immigrants.[5,6] However, such factors have been shown to confound the association between acculturation and health outcomes.[13]

There is growing evidence that African immigrants are at increased risk for poor health outcomes.[4,13,14] Immigrants from Sub-Saharan Africa have the second highest rate of overweight/obesity among all immigrants and are more likely to report high

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levels of dietary change upon arrival to the US, compared with immigrants from Europe/Central Asia, Asia, and Middle East/North Africa.[4] Comparative studies of African Diaspora subgroups have also found that fat consumption, hypertension prevalence, obesity, and diabetes increase as one moves from West Africa to the Caribbean and to the US.[11,15] Many African immigrants are moving from their native country where traditional, agriculturally based, low-fat, high-fiber diets are usually consumed, to the US environment, where diet is usually high in fats, sugar, and refined and processed foods and low in fiber.[6,15] This study extends the literature regarding dietary acculturation and SRH among an understudied group, African immigrant adults.

For this article, immigration was conceptualized as a significant life event with potential ramifications on an immigrant's life course and acculturation process.[13] The primary objectives of this research were to investigate the potential association between dietary acculturation and current SRH among African immigrant adults and to describe changes in consumption of selected foods and beverages pre- and post-migration. The secondary research objectives were to determine whether secondary acculturation predictors, sociodemographic and prior health factors, were effect modifiers or confounders of this relationship; and to examine country or region of origin differences among African immigrant adults.

METHODS

Study Design and Data Source

Using a cross-sectional design, a secondary analysis was performed on baseline data from the current, publicly available dataset of the adult sample of the 2003 New Immigrant Survey (NIS-2003), a longitudinal study of a nationally representative sample of new legal immigrants to the US (overall 69% response rate for completed interviews).[16,17] The NIS is a collaborative project of RAND, Princeton, New York, and Yale Universities; data are maintained by Princeton University's Office of Population Research Data Archive. New Immigrant Survey data are available for use in 2 forms: a free, downloadable de-identified, public use dataset and a restricted-use contractual dataset that includes individual characteristics reported in NIS (eg, unmodified country of origin, geographic location in the US, and health conditions data) and requires additional permissions and fees for access.[18] The NIS-2003 dataset contains quantitative and qualitative data and consists of several sub-files that correspond to sections of the survey questionnaires. Multiple sub-files from the NIS-2003 adult sample dataset were linked based on respondent's study identification and merged into 1 dataset for use in the current study. These files included Section A–Demographics, Section C–Employment, Section D–Health, Section E–Health and life insurance, Section F–Health care utilization and daily activities, Section J–Social variables, and Section K–Migration history (Please see Supplemental Table for a complete listing and description of sub-files).

Participants

The NIS-2003 adult sample is composed of immigrants at least 18 years of age, who were granted lawful permanent residence (LPR) during May to November, 2003 (n = 8,573).[16] The NIS-2003 sampling frame (based on administrative records compiled by the US Citizenship and Immigration Services) was stratified by immigrant visa categories (employment principals, diversity principals, spouses of US citizens, and other immigrants), with employment and diversity principal categories oversampled.[16,17] Details on the sample design and recruitment have been published elsewhere.[17] The NIS is one of the few national studies that follows immigrants over time and also contains a relatively large population from Africa. In this study, only data for immigrant adults born in the Sub-Saharan region of Africa were used (n = 763). The NIS-2003 staff interviewed respondents by phone or in person and in the language of choice, from June, 2003 through June, 2004. This study was deemed exempt by the University of Maryland, Baltimore's Institutional Review Board.

Instruments and Measures

For the current study, all variables were extracted from the NIS-2003 adult sample dataset (see the Supplemental Table for a summary of variables and corresponding NIS-2003 sub-files and survey items). The NIS-2003 instruments are available online.[19]

Dependent (outcome) variable. The outcome variable, current SRH, was measured quantitatively, using a 5-point Likert scale question: "Would you say your health is… 1 = excellent, 2 = very good, 3 = good, 4 = fair, or 5 = poor?"[19] and was recoded as low = 0 and high = 1, where a code of "low" indicated a response of "good/fair/poor" and reflected poorer health status, and a code of "high" indicated a response of "excellent/very good" and reflected better health status. This SRH dichotomization was based on the distribution of responses (only 28 [3.7%] of African immigrants reported fair/poor SRH) and previous evidence that good, fair, and poor SRH categories have higher mortality than the excellent category.[20]

Independent (exposure) variable. The primary acculturation predictor and key exposure variable, dietary acculturation, was measured quantitatively, using a dietary change scale created for NIS-2003 that captured pre-/post-migration changes in diet:

> Using a scale from 1 to 10, where 10 indicates exactly the same and 1 means completely different, how would you compare the similarity in the diet in the food you now normally eat in the United States with the food you normally ate in your home country?[19]

Similar to previous research, low dietary change was defined as a rating between 7 and 10 on the dietary change scale.[4] Moderate dietary change was defined as a rating of 5 or 6, and high dietary change was defined as a rating between 1 and 4.[4]

Additional quantitative and qualitative dietary change items were used to enhance understanding of