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Acculturation and dietary intake pattern among Jamaican immigrants in the US☆

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ABSTRACT

Information on dietary intakes of Jamaican immigrants in the United States is sparse. Understanding factors that influence diet is important since diet is associated with chronic diseases. This study examined the association between acculturation, socio-cultural factors, and dietary pattern among Jamaican immigrants in Florida. Jamaican persons 25–64 years who resided in two South Florida counties were recruited for participation. A health questionnaire that assessed acculturation, dietary pattern, and risk factors for cardiovascular disease was administered to participants. Generalized Estimating Equations were used to determine associations. Acculturation score was not significantly associated with dietary intake pattern ($\beta = -0.02$ $p = 0.07$). Age at migration was positively associated with traditional dietary pattern ($\beta = 0.02$ $p < 0.01$). Persons with 12 or fewer years of education ($\beta = -0.55$ $p < 0.001$), divorced ($\beta = -0.26$ $p = 0.001$), or engaged in less physical activity ($\beta = -0.07$ $p = 0.01$) were more likely to adhere to a traditional diet. Although acculturation was not a statistically significant predictor of dietary intake, findings show the role of demographic and lifestyle characteristics in understanding factors associated with dietary patterns among Jamaicans. Findings point to the need to measure traditional dietary intakes among Jamaicans and other immigrant groups. Accurate assessment of disease risk among immigrant groups will lead to more accurate diet-disease risk assessment and development of effective intervention programs.

1. Introduction

Few studies have examined the influence of acculturation on dietary intakes among black Caribbean immigrants to the United States, though previous studies have documented this association in other immigrant groups (Dekker et al., 2011; FB et al., 2000; Keys, 1980; Maki, 2004; Voutilainen et al., 2001). In addition, some validated and widely used food frequency questionnaires used to assess usual intake do not include traditional foods consumed by immigrants, precluding the ability to examine influences on dietary intakes in these populations (Block et al., 1986; Fraser, 1999; Willett, 1998). Prior findings, many of which were conducted among Hispanic-origin groups, show increasing prevalence of diet-related chronic diseases such as cardiovascular disease, hypertension and diabetes with increased time spent in the United States (Wilks et al., 1998, 1999; Forrester et al., 1998).

Western dietary pattern has been found to play a role in the increased prevalence of chronic conditions observed among immigrant populations. The Western diet consists of processed foods, is high in fat and simple carbohydrates, and is high in sugar. Studies have shown deleterious effects associated with changes in traditional dietary intakes to a more Western or acculturated diet among many immigrant subgroups (Oza-Frank et al., 2011; Perez-Escamilla, 2011; Sanou et al., 2014; Steffen et al., 2006). For example, evidence shows that Mexican-Americans who adhere to a Western diet have higher prevalence of

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cardiovascular risk factors such as obesity, hypertension, and impaired glucose tolerance (Denova-Gutiérrez et al., 2016; Rodríguez-Morán et al., 2009). It is also well established that traditional dietary patterns that are rich in fruits and vegetables, whole grains, low-fat dairy, and low in saturated fats are associated with lower prevalence of risk factors for chronic disease (Gardener et al., 2011; Shen and Takeuchi, 2001). The changes in dietary pattern and the observed increase in chronic disease risk factor prevalence underscore the importance of understanding the factors that contribute to changes in dietary intake pattern post migration.

A large body of literature demonstrates the pivotal role of acculturation in the development of cardiovascular risk factors among immigrant groups in the US (Abraido-Lanza et al., 2005; Diez-Roux et al., 2005; Koya and Egede, 2007; Mooteri et al., 2004; Rosenthal, 2014; Steffen et al., 2006). Overall, findings show lower rates of diet-related chronic conditions and risk factors compared to those who emigrate to the US, implicating post-migration changes in lifestyle behaviors (Forrester et al., 1998; Lizarzaburu and Palinkas, 2002). These findings have primarily been observed among Mexican immigrants, who have been the focus of acculturation and health studies. More recent studies conducted among other Hispanic populations, including Puerto Rican and Dominican subgroups, show consistent findings (Kershaw et al., 2016; Lin et al., 2003; Pérez-Escamilla and Putnik, 2007). Two known studies conducted among non-Hispanic Caribbean immigrants show mixed findings (Allen et al., 2014a; Ayala et al., 2008; Huffman et al., 2014). One study showed an association between lower acculturation and poor diet quality/less healthful intakes, while the other found that more acculturated persons had poorer dietary quality (Allen et al., 2014b; Huffman et al., 2014). The mixed findings likely reflect differences in quality and type of food intakes attributed to diverse regions or urbanicity within in the country of origin and varied measurement of acculturation.

Most studies of acculturation and health outcomes utilize temporal proxy measures such as length of time in the US and age of migration or language use (Celenk and Van de Vijver, 2011; Margarita, 2009; Thomson and Hoffman-Goetz, 2009). Though these measures have increased our understanding of how acculturation affects the health of immigrants, they fail to capture multiple dimensions of acculturation (Celenk and Van de Vijver, 2011; Margarita, 2009). The proximity of the Caribbean to the US mainland, and presence of ethnic enclaves along the Eastern seaboard make temporal measures impractical for some Caribbean immigrant groups. The use of language preference to capture acculturation is also limited to immigrants for whom English is not their primary language.

Our study sought to determine the influence of acculturation on dietary intake pattern among Jamaican immigrants, a growing immigrant population for whom little is known about diet-related chronic disease risk. In contrast to a Western diet, the traditional Jamaican diet consists of unprocessed foods, mixed dishes, root vegetables, spices and herbs, and a variety of meats and fish. Foods that are typically eaten include one pot meals that include meat and vegetables (e.g. stews and soups), yam, rice and peas, pumpkin, banana, porridges, codfish, and calaloo, a green leaf vegetable similar to spinach. We hypothesized that Jamaican immigrants who were less acculturated and who lived in a Jamaican enclave would be more likely to adhere to a traditional diet. Given the limitations associated with commonly used acculturation measures, we used a measure that captures multidimensional aspects of acculturation that excluded language use and dietary preference to examine associations with dietary intake pattern (i.e. traditional vs. acculturated diet).

2. Methods

2.1. Sample

The *Jamaicans Migrating to the United States* study (JAMUS) was a cross-sectional study conducted to examine associations between acculturation, dietary intake pattern, and risk factors for heart disease among Jamaican immigrants in South Florida, home to a large Jamaican population (Thompson and Byers, 1994). A two-staged cluster sampling design was used to select participants for the JAMUS study. First, we enumerated churches and community organizations in Palm Beach and Broward counties for potential recruitment into the JAMUS study. A total of 12 organizations and churches were contacted for recruitment, of which eight agreed to participate in the study.

We obtained membership lists from churches and organizations to select individuals for participation. A random sample of Jamaican immigrants ages 25–64 was obtained from the eight participating community organizations and churches. Individuals were eligible if they: 1) were born in Jamaica, 2) self-identified as black, 3) had no history of absence from the US for > 6 months, and 4) had lived in the US for at least one year. The overall response rate was 64%, similar to prior studies conducted among Jamaican immigrants (Sharma et al., 1999). The study was approved by the University of South Florida Institutional Review Board (protocol # 00002078).

2.2. Procedures

Potential participants were contacted by telephone and invited to participate in the study. Individuals who agreed to participate in the study were asked to complete an in-person interviewer-administered health questionnaire and 24-hour diet recall. After informed consent, interviews were conducted at a place of the participants choosing. A total of 91 persons, 45 of whom also completed a 24-hour recall for different study aim, consented to participate and completed the health questionnaire. Participants were asked demographic questions, including questions on risk factors for chronic illness, height, and weight, and completed an acculturation scale that was adapted from existing validated measures (Phinney, 1992; Tsai et al., 2000).

2.3. Measures

2.3.1. Acculturation

The acculturation scale was adapted from the abridged General Ethnicity Questionnaire (GEQ) and the Multigroup Ethnic Identity Measure (MEIM) (Phinney, 1992; Tsai et al., 2000). Questions were adapted to capture social and cultural dimensions of acculturation, including cultural values and norms that are most relevant to Jamaicans. The scale covered social and cultural characteristics (e.g. socialization with other Jamaicans, traditional values, celebrations, upbringing) that assessed a person's attitude toward cultural patterns of the host country and the level of social contact with persons from one's own ethnic group. These dimensions were chosen in order to distinguish different levels of acculturation among this English-speaking population, as most proxy measures are hypothesized to be ineffective in this population. Participants were asked to respond on a scale of 1 (strongly disagree) to 4 (strongly agree) to demonstrate their agreement with the questions. The acculturation scale was scored according to the standard scoring used for Likert response options. A score was calculated for both social and cultural dimensions of acculturation, by summing the responses over items assessing each dimension.

2.3.2. Dietary intake pattern

The outcome, dietary intake pattern, was defined as traditional or acculturated. Traditional and acculturated dietary intake pattern was measured by the frequency of consumption of traditional vs. acculturated or Western foods. Study participants were asked to indicate on average how many days each week they ate foods they considered to be traditional Jamaican foods. This question was used to classify persons as having a more or less traditional (i.e. traditional vs. acculturated) eating pattern and has been found to clearly distinguish these eating patterns in a previous study (Sharma et al., 1999). Foods reported as