

Diet-Related Health Disparities in African Americans

Jessie A. Satia[†]

Department of Nutrition and Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

ABSTRACT

Disparities in health and disease between various population subgroups, such as racial and ethnic groups, are a major focus of public health research but also pose considerable challenges. Diet is a key contributor to disparities in many chronic diseases and conditions. Therefore, in order to understand and address racial and ethnic health disparities, it is important to characterize the dietary patterns of the populations of interest. African Americans are at higher risk for many diet-related chronic disease conditions, such as obesity, type II diabetes, cardiovascular disease, and many cancers relative to other racial/ethnic groups in the United States. In this report, I describe the diet-related chronic disease profiles of African Americans, characterize their dietary patterns and food preferences, identify demographic, psychosocial, environmental, and cultural factors that may affect their dietary choices, and propose strategies for improving the dietary and health profiles of African Americans. (*J Community Nutrition* 8(1): 24~30, 2006)

KEY WORDS: African Americans · chronic disease · diet · disparities · interventions.

Introduction

This report addresses the following topic areas:

- Current demographic, social, and economic profiles of African Americans.
- Current diet-related chronic disease profiles of African Americans.
- Dietary patterns and dietary preferences of African Americans.
- Demographic, psychosocial, environmental, and cultural factors affecting dietary choices in African Americans.
- Strategies for improving the dietary and health profiles of African Americans.

Demographic, Social, and Economic Profiles of African Americans

For the purposes of this report, the term “African American” refers to people having origins in any of the Black

race groups of Africa, including persons born in the continent of Africa, the Caribbean Islands, and the West Indies. Also, the terms “African American” and “Black” are used interchangeably. “White” and “non-Hispanic White” are also used interchangeably.

African Americans comprised 12.9% (36 million persons) of the non-institutionalized United States (U.S.) population according to 2002 Current Population Survey (McKinnon, 2003). Of these, 12.3% self-identify as Black only and the other 0.6% self-identify as Black plus at least one other race. In terms of geographic distribution, African Americans were concentrated in the southern part of the U.S. (55%). Similar proportions of U.S. blacks lived in the Northeast and Midwest (18%) and 9% lived in the West (Fig. 1).

The African American population was younger than the non-Hispanic White population; for example, 33% of all African Americans were under age 18 years compared to 23% of non-Hispanic Whites, and only 8% of African Americans were 65 years and older compared to 14% of non-Hispanic Whites. African Americans were less likely to be married than non-Hispanic Whites, African American families were larger than non-Hispanic White families, and fewer African American families were married-couple families; for example while only 48% of African American families were married-couple families, the corresponding number for non-Hispanic

[†]Corresponding author: Jessie A. Satia, Department of Nutrition and Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27599, USA
Tel: (919) 843-3641, Fax: (919) 966-7216
E-mail: jsatia@unc.edu

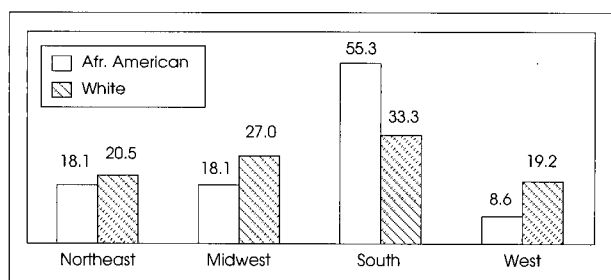


Fig. 1. Region of residence by race: 2002 (Percent of population). Source: U.S. Census Bureau.

Whites was 82%.

Fewer African Americans (79%) had earned at least a high school diploma compared to non-Hispanic Whites (89%). Also, more African American women than African American men aged 25 years and older had earned at least a bachelor's degree. African Americans accounted for about one quarter of the U.S. population living in poverty in the year 2001, but more than half (52%) of all African American married-couple families had annual incomes of \$50,000 or more. As a group, African Americans participated in the labor force at a lower rate than non-Hispanic Whites; however, the rate for African American women was slightly higher than that for non-Hispanic White women (62% and 60% respectively). Similar proportions of African American and non-Hispanic White men were employed in technical, sales, and administrative support jobs (McKinnon 2003).

Diet-related Chronic Disease Profiles of African Americans

In general, African Americans bear a disproportionate burden of disease, injury, death, and disability for many health conditions. In particular, compared to other racial/ethnic groups, African Americans tend to have higher incidence, morbidity, and mortality rates for many diet-related chronic diseases and conditions, including cardiovascular disease, hypertension, cancer, Type II diabetes, and obesity. For example, African Americans develop hypertension at an earlier age, tend to have more severe high blood pressure, and are less likely to receive treatment (Hollar et al. 2004). The prevalence of diabetes is 70% higher among African Americans than Whites, and the age-adjusted diabetes death rate for African Americans was more than twice that for Whites in the year 2001 (Egede, Dagogo-Jack 2005).

Among the ten leading causes of death among African

Americans in 2002, the top three were diet-related: heart disease, cancer, stroke, and diabetes (Centers for Disease Control 2004). Although the top three causes and seven of the 10 leading causes of death are the same for African Americans and Whites, the risk factors and incidence, morbidity, and mortality rates for these diseases and injuries often are greater among African Americans than Whites. For illustrative purposes, we briefly discuss the profiles and related disparities for cancer, obesity, and other chronic disease risk factors among African Americans (compared to Whites).

1. Cancer

Cancer is the second leading cause of death for African Americans (American Cancer Society 2005). The mortality rate from cancer among African American males is 1.4 times higher than that among White males; for African American females it is 1.2 times higher (Ward et al. 2004). African American women are more likely to die of breast cancer than women of any U.S. racial or ethnic group (Ghafoor et al. 2005).

Cancer incidence rates are also generally higher for African Americans than for Whites and other racial/ethnic groups. For example, for U.S. males, the 2005 estimated age-standardized incidence rates for colon and rectal cancers are 72.9/100,000 (African Americans), Whites (63.1/100,000), Asians and Pacific Islanders (56.3/100,000), Hispanics-Latinos (49.6/100,000), and American Indians/Alaska Natives (38.3/100,000) (Jemal et al. 2005). Similarly, between 1997 and 2001, the mortality rate for colon/rectum cancer for African American females was 24.5 per 100,000 compared to 17.1 per 100,000 for White females, 10.8 per 100,000 for Asians and Pacific Islanders, 11.6 per 100,000 for Hispanics/Latinos, and 11.7 per 100,000 for American Indians/Alaska Natives (Edwards et al. 2005). The age-adjusted incidence rates (per 100,000 persons) for African American females for other cancers were 13.0 for pancreatic and 9.0 for stomach cancers. Among males, the age-adjusted incidence rates (per 100,000) for selected cancers were 251.3 for prostate, 108.2 for lung/bronchus, 68.3 for colon/rectal, and 16.3 for stomach cancers (Edwards et al. 2005).

2. Obesity

In the U.S., overweight, defined as a body mass index (kilogram/meter squared) of 25 or more, and obesity, defined as a body mass index of 30 or more, occurs with higher frequency in racial/ethnic minority populations such as African Americans compared to White Americans. For the years

1999 – 2000, 39.9% of African Americans were classified as obese, compared to 28.7% of Whites (Flegal et al. 2002). Based on data from the National Health and Examination Survey (NHANES), 61% of African American men and 78% of African American women were identified as overweight, while 28.8% of men and 50.8% of women were obese (Hedley et al. 2004). Available data indicate that cultural factors related to dietary choices, physical activity, and acceptance of excess weight among African Americans and other racial/ethnic groups may play a role in interfering with weight loss efforts (Kumanyika et al. 1992).

3. Other chronic disease risk factors

A number of behavioral characteristics related to diet, such as physical activity, smoking, cancer screening, and dietary supplement use among African Americans might place them at increased risk for chronic diseases and increase health disparities with other minority groups. Data from the 1994 – 2004 Behavioral Risk Factor Surveillance System (BRFSS) indicate that 33.8% of African American adults reported no leisure-time physical activity, with African American women more likely than men to be physically inactive (33.9% versus 27.0%, respectively) (Centers for Disease Control 2005). In 1997, 32.1% of African American men and 22.8% of women reported that they were current smokers (Bolen et al. 2000). This prevalence of smoking is considerably higher than the Healthy People 2010 goal of 12%. According to the 1997 BRFSS, the median percentage of adults 50 years and older who reported having had a sigmoidoscopy (colon/rectal cancer screening test) within the previous 5 years was 28.2% for African Americans (range: 10.9 – 38.3%), 30.4% for Whites (range: 15.6 – 49.1%), and 22.4% for Hispanics (range: 18.1 – 40.7%) (Bolen et al. 2000). Based on 2002 BRFSS, only 38% of African American respondents in the U.S. state of North Carolina reported current use of multivitamins, compared to 51% of Whites (North Carolina Center for Health Statistics 2001).

Dietary Patterns of African Americans

In general, research suggests that African Americans tend to have dietary behaviors that may predispose them to chronic diseases: diets high in fat, particularly saturated fat; low in fruits, vegetables, and whole grains; and high in salt. Below, we briefly discuss published data on the intakes of

total energy, macronutrients, micronutrients, and food groups in African Americans. We also examine diet-related behaviors that may affect nutrient intake, specifically fast food restaurant eating and food nutrition label use.

1. Total energy, macronutrients, micronutrients and food groups

According to data from NHANES III conducted between 1988 and 1994 (Bialostosky et al. 2002), the mean energy intake among African Americans was 2,072kcal per day, compared to 2,015kcal per day for Whites. Total fat intake for African Americans was 82g per day on average and the percentage of energy from fat was 34.7%. Comparable numbers for Whites were 83g and 33.8% respectively. African Americans reported consuming only 13g of fiber per day, compared to 16g for Whites (Table 1).

Bialostosky and colleagues also reported that African Americans generally had lower intakes of most micronutrients (vitamins and minerals) than Whites (Bialostosky et al. 2002). Specifically, compared to Whites, African Americans reported lower intakes of vitamin E, folate, calcium, iron, sodium, and selenium; and higher intakes of beta-carotene and vitamin C. For example, African Americans had a mean beta-carotene intake of 2,075 μ g compared to 1,970 μ g for Whites (Table 2). Biomarker data (serum and plasma values) mirror dietary intakes. A study conducted among African American and Whites in California (Knutsen et al. 2001) found that African Americans had higher serum levels of beta-carotene but lower serum levels of vitamin E (data not shown). Also, using data from NHANES III, Ford reported that African Americans had statistically significantly lower intakes of vitamin E than Whites and also had the lowest

Table 1. Total energy and macronutrient intakes in African Americans and whites, NHANES III, 1988 – 1994¹⁾

| Nutrients | African Americans (n = 8,513) | | Whites (n = 10,634) | |
|----------------------|----------------------------------|-------------------|------------------------|------|
| | Mean | SEM ²⁾ | Mean | SEM |
| Total energy (kcal) | 2,072 | 17.3 | 2,150 | 18.4 |
| Total fat (g) | 82 | 0.9 | 83 | 1.1 |
| Total fat (kcal) | 34.7 | 0.17 | 33.8 | 0.21 |
| Saturated fat (g) | 28 | 0.3 | 28 | 0.4 |
| Trans-fatty acid (g) | 0.07 | 0.001 | 0.07 | 0.02 |
| Cholesterol (mg) | 298 | 4.9 | 259 | 4.3 |
| Fiber (g) | 13 | 0.1 | 16 | 0.2 |
| Alcohol (g) | 7 | 0.3 | 9 | 0.5 |

¹⁾Adapted from Bialostosky et al, 2002

²⁾SEM: standard error of the mean

concentrations of serum α -tocopherol (Ford 1999).

Data from a case-control study of colon cancer risk in North Carolina (Satia-Abouta et al. 2004) indicated somewhat lower consumption of fruits/fruit juices, vegetables, dairy foods, and alcoholic beverages by African Americans compared to Whites. For example, the mean weekly frequency of consumption of vegetables was 13.9 and 17.7 servings, respectively for African Americans and Whites. There were no appreciable differences in consumption of red meat, fats, oils, and sweets, and citrus fruits (Table 3).

In summary, except for a few nutrients such as dietary fiber and some vitamins, nutrient and food group intakes do not appear to differ substantially between African Americans and Whites, although African Americans had slightly lower intakes of many micronutrients.

2. Dietary behaviors

In addition to studying dietary intake, it is also important

Table 2. Micronutrient intakes in African Americans and whites, NHANES III, 1988 – 1994¹⁾

| Nutrients | African Americans (n = 8,513) | | Whites (n = 10,634) | |
|-----------------------------|----------------------------------|-------------------|------------------------|------|
| | Mean | SEM ²⁾ | Mean | SEM |
| Beta-carotene (μ g) | 2,072 | 51.6 | 1,970 | 45.3 |
| Vitamin C (mg) | 112 | 1.6 | 102 | 1.6 |
| Vitamin E (mg α -TE) | 8.5 | 0.13 | 9.3 | 0.22 |
| Folate (μ g) | 241 | 2.9 | 283 | 3.3 |
| Calcium (mg) | 709 | 7.8 | 833 | 12.4 |
| Iron (mg) | 13.8 | 0.11 | 15.6 | 0.18 |
| Sodium (mg) | 3,372 | 37.5 | 3,444 | 38.6 |
| Selenium (mg) | 111 | 1.1 | 114 | 1.3 |

¹⁾Adapted from Bialostosky et al, 2002

²⁾SEM: standard error of the mean

Table 3. Mean weekly frequency of consumption of various foods among African Americans and Whites, the North Carolina colon cancer study, 1996 – 2000¹⁾

| Nutrients | African Americans (n = 676) | Whites (n = 933) |
|-----------------------------|--------------------------------|---------------------|
| | Mean (SD) | Mean (SD) |
| Fruits and fruit juices | 8.99 (6.3) | 9.12 (7.2) |
| Vegetables | 13.89 (7.0) | 17.70 (8.1) |
| Cereals | 17.33 (7.4) | 16.23 (6.2) |
| Dairy | 7.49 (6.2) | 11.66 (8.8) |
| Red meat | 7.94 (4.8) | 7.15 (4.4) |
| Fats, oils, and sweets | 25.62 (14.5) | 25.08 (15.8) |
| Dark green leafy vegetables | 4.07 (2.9) | 3.89 (3.0) |
| Citrus fruits and juices | 3.45 (3.8) | 3.11 (3.8) |
| Alcoholic beverages | 1.66 (6.7) | 2.74 (5.8) |

¹⁾Adapted from Satia-Abouta et al, 2004

to understand the extent to which African Americans may engage in other dietary behaviors that may adversely affect their dietary profiles and increase their risk for chronic diseases.

1) Fast food restaurant eating

Studies in other population groups have found that eating at fast food restaurants is associated with less healthy diets (Guthrie et al. 2002; Haines et al. 1992). Therefore, it is valuable to examine the extent to which African Americans (and other minority groups) frequent fast food restaurants and the consequences of this behavior on dietary profiles. Satia and colleagues (Satia et al. 2004) conducted a study among 658 African Americans in North Carolina that assessed the prevalence of fast food restaurant eating and its associations with fruit/vegetables, total fat, and saturated fat consumption. Seventy-six percent reported fast food restaurant eating during the previous 3 months: 4% usually, 22% often, and 50% sometimes. Fast food restaurant eating frequency was positively associated with total fat and saturated fat intakes and fat-related dietary behaviors ($p < 0.0001$) and inversely associated with vegetable intake ($p < 0.05$). For example, mean daily fat intake was 39.0g for usually/often respondents and 28.3g for those reporting rare/never fast food restaurant eating. These findings suggest that fast food restaurant eating may be a contributor to poor dietary profiles in African Americans.

2) Nutrition label use

Another behavior that may have an effect on dietary intake is the use of food (nutrition) labels, as reading the “Nutrition Facts” labels on food packages may improve food choices and enable healthy dietary practices. In a study conducted among African Americans ($n = 658$) in North Carolina (Satia et al. 2005), participants were asked how often they read nutrition labels when purchasing packaged foods, and specifically about how often they looked for five types of dietary information on purchased food packages (serving size, calories, calories from fat, grams of fat, and cholesterol). Seventy-eight percent of respondents read nutrition labels when they purchased packaged foods: 25% usually, 21% often, and 32% sometimes. Persons who usually or often read nutrition labels reported higher fruit and vegetable consumption and lower fat intakes ($p < 0.001$). For example, respondents who usually/often read the “Nutrition Facts” label consumed a mean of 3.0 servings of fruits and vegetables

per day compared to 2.1 servings for those who rarely/never read labels ($p < 0.0001$). Similarly, mean total fat intake was 29.1g for respondents who usually/often read grams of fat information compared to 34.8g for those who rarely/never read this information. Nutrition label use was significantly associated with healthy dietary practices in this sample of African Americans, indicating that effective use of nutrition labels can be helpful in improving the diets of African Americans.

Demographic, Psychosocial, Environmental, and Cultural Factors Affecting diet among African American

In order to design effective nutrition education and intervention programs, it is important to identify various personal attributes and characteristics that may affect dietary intake and dietary behavior. These include demographic, psychosocial, environmental, and cultural factors.

1. Demographic characteristics

A number of demographic characteristics have been found to be associated with dietary intake among African Americans. Younger age has been shown to be associated with higher fat intake (Kayrooz et al. 1998), while older age is correlated with higher fruit and vegetable intakes (McClelland et al. 1998). McClelland and colleagues reported that male sex was associated with lower fruit and vegetable intakes among 737 adult members of 50 black churches from 10 rural counties in North Carolina (McClelland et al. 1998). Other characteristics that have been found to be associated with high fat intake include being employed (Kayrooz et al. 1998), lower education (Eyler et al. 2004), low income (Eyler et al. 2004), and current smoking (Kayrooz et al. 1998).

2. Psychosocial factors

There is increasing evidence that psychosocial factors may affect dietary intakes, and consequently chronic disease risk. Associations of dietary intake with various psychosocial factors have been studied in African American populations. High self-efficacy (defined as confidence in one's ability to do a certain behavior) is associated with higher fruit and vegetable and lower fat consumption (Campbell et al. 1998). Belief in a relationship between diet and disease is correlated with healthy dietary intakes, as is high self-rated health, knowledge of dietary recommendations, strong social

support (from family members and/or friends) and familiarity with nutritional guidelines, such as the U.S. food guide pyramid (Campbell et al. 1998; Satia JA, unpublished data).

3. Environmental factors

The environment in which we live can have an appreciable effect on diet. Environmental influences on what and how African Americans eat include the availability of healthy food choices (e.g., proximity to fast food restaurants), convenience of purchasing healthy foods (e.g., access to healthy shopping establishments), and costs of healthy foods (e.g., it is often less expensive to purchase unhealthy snack foods compared to fruits and vegetables). Learned behaviors (e.g., childhood dietary patterns) also influence current/adult behaviors. Finally, family members and peers can affect one's diet, for example, a person may choose to eat certain foods in order to "fit in" or so that they are not viewed as "different" (Eyler et al. 2004; Vitolins et al. 2002).

4. Cultural factors

It is widely acknowledged that cultural factors influence dietary preferences and behavior. Studies have shown that, in general, African Americans accept or are comfortable with larger body sizes (Rand, Kuldau 1990), which may limit the extent to which healthy eating efforts are sustained. African Americans may also feel less guilty about overeating and tend to consider eating a social experience. According to Cornely and colleagues, one reason why African Americans may have lower levels of physical activity is that they may perceive a greater health benefit from "getting enough rest" than from exercising (Cornely et al. 1963). On a positive note, they are less likely (relative to their White counterparts) to practice unhealthy dietary behaviors, such as over-exercising or purging. For example, in a recent study of 1,709 White, African American, and Latina women in which respondents reported their weight loss behaviors during the previous 30 days, including using diet pills, exercising, purging (vomiting, laxatives, diuretics), and dieting, Brietkopt and colleagues reported that African Americans were least likely to practice these behaviors compared with Whites and Latinas (Brietkopt, Berenson 2004).

Strategies for Improving the Dietary and Health Profiles of African Americans

Strategies to improve dietary intake can be targeted at the

individual (or micro-) level and at the societal (or macro-) level.

1. Individual or micro-level strategies

At the individual level, it is imperative that nutrition education and intervention programs to improve diet among African Americans be targeted specifically to the populations or population sub-groups of interest, taking into account factors such as demographic characteristics, psychosocial factors, environmental attributes, and literacy. In addition, these programs need to address cultural and other factors that affect food preferences among African Americans, such as an acknowledgement and discussion of body image issues. Importantly, these programs should be culturally adapted for African Americans, and the culturally salient features of the programs should be highlighted. Examples of such culturally appropriate features include adapting successful theoretical or behavioral frameworks for African Americans, providing information on healthy modifications of traditional African American meals, approaches to increase the palatability of "healthy" foods (to address the perception that "healthy" foods do not taste good), and hiring study staff that participants can identify with on a socio-cultural basis. Program delivery also plays a critical role in its success. It is important to identify innovative and novel venues for delivering nutrition education and intervention programs, such as churches, elementary and secondary schools, historically black colleges and universities, and the Internet. Finally, recruitment and retention of study participants is vital. Approaches that have been found to enhance recruitment of African Americans in research studies include identifying prospective participants through religious institutions, community networks, senior centers, and by door-to-door canvassing (Curry, Jackson 2003). Involving the participant's family and peer network into the program, incorporating social support as a program component, and hiring ethnically-matched study staff can bolster recruitment and enhance retention (Kumanyika et al. 1992).

2. Societal or macro-level strategies

A number of changes at the societal or policy level can be helpful in improving the diets and health of African Americans, as well as other racial/ethnic groups. These include increasing healthy food options in low-income neighborhoods, increasing healthy options in schools, and addressing other barriers to healthy behavior change, such as poverty,

lack of health insurance, and lack of access to medical care.

Conclusion

African Americans have high incidence, prevalence, and mortality from diet-related chronic diseases, often much higher than rates seen in other U.S. racial/ethnic groups. The elimination of these disparities is a major healthcare priority in the U.S. To effectively address these disparities, it is important to note that 1) blacks living in the U.S. are a diverse group, and 2) a myriad of factors, including demographic, environmental, lifestyle, cultural, and societal attributes affect the food preferences and dietary behaviors of African Americans. Therefore, research efforts aimed at reducing health disparities among African Americans should be versatile, multi-component, and multi-faceted, and must include adequate and representative numbers of the population of interest. Importantly, they should be adapted and/or tailored to the specific group(s) under study.

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