Published in final edited form as:

J Immigr Minor Health. 2015 April ; 17(2): 498–505. doi:10.1007/s10903-013-9956-8.

African American and Latino Low Income Families' Food Shopping Behaviors: Promoting Fruit and Vegetable Consumption and Use of Alternative Healthy Food Options

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Abstract

Introduction—Minority families often reside in neighborhoods with few supermarkets or alternative healthy food options (e.g., farmers markets, community gardens), making fresh produce difficult to obtain. This qualitative study identified factors influencing fruit and vegetable shopping and use of alternative healthy food options.

Methods—Forty-eight minority women with children completed interviews regarding food shopping habits and use of and attitudes toward alternative healthy food options. Interviews were subjected to thematic analysis.

Results—Produce shopping was motivated by costs and family preferences. For African American women, poor cooking skills restricted the variety of fruits and vegetables purchased. Latinas were receptive to alternative healthy food options, but did not use them because these sources were inconvenient. African American women were not receptive to them.

Conclusion—Improving cooking skills and perceptions of acceptable foods may be as important as increased access to promote greater consumption of fruits and vegetables.

Keywords

farmers markets; community gardens; African American; Latino; healthy food

Access to healthy food is a significant public health concern. Fruit and vegetable consumption falls well below recommendations in much of the US [1], particularly among African American, Latino, low educational attainment, and low income populations [2]. Evidence is increasing that variability in food access plays a prominent role in these disparities [3–4]. Many neighborhoods with large minority populations are classified as food deserts and lack full-service grocery stores, increasing the difficulty and expense of obtaining healthy foods [4–6]. This lack of access to fruits and vegetables and other healthy

foods can contribute to chronic diseases such as heart disease and diabetes or risk factors such as hypertension and obesity [7–9].

A variety of complex socioeconomic and cultural factors influence food purchasing and how people interact with their local food environment [10–17]. All people, including members of ethnic and racial minorities, have perceptions of particular stores and preferences for specialty foods based on personal experience and cultural significance. These perceptions influence the stores they patronize and foods they buy [11,15,17,18]. Such experiences and preferences extend to alternative sources of fresh fruits and vegetables such as farmers markets, community gardens, or roadside stands. Although such alternative healthy food options are advocated to enhance food environments and increase healthy food access more quickly than attracting new grocery stores [19], there has been little research on perceptions and preferences that could affect the use of these as sources of healthy foods.

This paper is an in-depth, qualitative study of factors influencing the consumption of fresh fruits and vegetables, food shopping habits, and attitudes towards alternative sources of fresh fruits and vegetables among two groups of minority women, African Americans and immigrant Latinas, in Forsyth County, North Carolina, where grocery store and alternative food source access is limited [5]. Forsyth County is a largely urban county with a 2010 population of 350,670 [20]. These two minority groups have distinct histories in Forsyth County. The African American community is well established, comprising 26% of the county population in 2010 [20]. Food sources (e.g., grocery stores, produce stands, and produce peddlers) have largely disappeared from traditionally African American neighborhoods in the last several decades [21,22]. In contrast, for Latinos, Forsyth County is classified as a new settlement area, with the percentage of the population that is Hispanic/Latino increasing from 0.8% in 1990 to 6.4% in 2000 and 11.9% in 2010 [20,23]. Latinos are concentrated in a number of different neighborhoods throughout the county, some of which are classified as food deserts [5]. Several tiendas and grocery stores catering to Latinos have recently opened in the county.

This study compares and contrasts these groups' shopping behaviors and attitudes toward aspects of food shopping, alternative sources of healthy food, and the food environment. Specifically, the study addresses three aims: (1) to identify factors influencing food shopping habits, (2) to evaluate attitudes toward shopping for fruits and vegetables at alternative healthy food options, and (3) to compare patterns of fruit and vegetable purchasing and attitudes toward alternative healthy food options between two minority groups. Then, focusing on how members of these groups perceive and interact with the food environment, the study suggests ways to address more effectively issues of food access and food environment disparities.

Methods

Recruitment and sampling

A purposive sample design was used to enroll African American and immigrant Latina women to develop a rich understanding of a construct (acquiring and using fruits and vegetables) across a broad range of economic and life experience conditions. By design,

approximately half received food assistance; half were aged 41 and older. Participants were recruited with the assistance of community organizations trusted by community women, including WIC clinics, health care facilities, neighborhood associations, and community development organizations.

Inclusion criteria were: resident of Forsyth County, age 21 years or older, mother of at least one co-resident minor child, and responsible for household food decisions. The Latina sample included women who self-identified as Latina/Hispanic, were immigrants from Latin America, and were Spanish-speaking. The African American women included those who self-identified as Black/African American, were native born, and spoke English. Participants received a \$20 gift card for participating.

Study procedures were approved by the Wake Forest Health Sciences Institutional Review Board. Signed informed consent was waived due to the research's low risk. Women were provided a written information sheet and an oral explanation; they gave oral consent.

Data collection

Each woman participated in one face-to-face, semi-structured, in-depth interview. Interviews with African American mothers were conducted by an African American interviewer. Those with Latinas were conducted in Spanish by a non-Hispanic interviewer fluent in Spanish. Interviews took 30 to 60 minutes and were conducted in the women's homes or in a community setting, based upon the woman's preference.

An interview guide was constructed in English and Spanish and included questions and probes on participants' shopping habits, preferred grocery stores, ideas about alternative healthy food options (farmers markets, community gardens, and roadside stands), and family activities. The guide was modified as new topics emerged. Forty-eight in-depth interviews were conducted and recorded. Interviewers kept field notes describing the interview context and providing an initial summary of the interview.

Data analysis

Interviews were transcribed; interviews in Spanish were translated and transcribed by a native English speaker fluent in Spanish and the translations checked by a native Spanish speaker fluent in English. A multi-stage inductive interpretive process was used to analyze the transcripts and identify key themes and patterns. The research team members individually read the transcripts to identify important themes and patterns, from which codes were developed to form a coding dictionary. Codes were applied to text segments; multiple team members reviewed the coding and reached consensus on points of disagreement. Initial codes were modified as necessary. Key quotations were identified as analysis progressed. Two themes were identified focused on factors influencing food shopping habits (Aim 1). Transcriptions were managed using ATLAS.ti version 6 (ATLAS.ti GmbH, Berlin).

Results

Characteristics of the 24 African American and 24 Latina participants are described in Table 1. The groups differed in education, marital status, and employment status.

Most participants reported shopping for groceries once a week or once every two weeks. Most shopped for groceries primarily at chain supermarkets or at superstores such as Walmart. Grocery shopping was often a family activity as part of a day devoted to errands. Some participants shopped for all of their groceries at one store; others went from store to store shopping for specific items.

Theme 1: Price, perceptions, and proximity

Shopping habits were motivated by price, perceptions of stores, and proximity. Several did their shopping at superstores outside of their neighborhood, even if they did not live in food deserts. Participants reported lower prices for most items at the superstores, as well as being able to buy foods in larger quantities. Many who shopped for food at these stores made non-food purchases at the same time, reducing the time and transportation costs of shopping.

Negative perceptions of nearby supermarkets also motivated participants to shop at supermarkets outside of their neighborhood. For example, some of the African American participants shopped at stores in the same chain, but in different neighborhoods because they believed that the store outside of the neighborhood had a better selection, lower prices, fresher produce, or better service.

See, that Food Lion–Northside [a predominantly White area]–don’t have the same price as the Food Lion at East Winston [a predominantly Black, low income area]. That’s the part I don’t really get, though, because it’s Food Lion.... It’s, like, a dollar more at this [East Winston] Food Lion.

[African American]

My mom lives off of XXXXX Street, and there’s a Food Lion on XXXXX Street. And occasionally I’ll go there if it’s something I just got to [have].... I don’t do my grocery shopping at that one...and it’s amazing because the two stores are different...because it’s in a Black area and this one [Union Cross] is in a White area. The one in the Black area...their choice of the leafy green lettuce was all withered, and it didn’t look good, so I didn’t buy it. So I end up having to go to the Union Cross one to get what I wanted.... And their selection of vegetables and fruits are different when you look at the two...like, if you want collard greens or greens, your best bet is to get them at the Black Food Lion.

[African American]

Participants shopped at specific stores farther from their neighborhoods for specialty foods. Some African American mothers patronized specific meat markets or butchers. Many of the Latina participants had specific *tiendas* or specialty grocers where they preferred to buy specific chiles, cheeses, or other items.

I will buy [my fruits and vegetables] at tiendas because they are cheaper there.... I buy limes, chiles, tomatoes, onions, garlic. Some fruits, mandarins, oranges, apples, too. Sometimes I will buy cabbage and lettuce.... They have a little bit of everything. Special chiles, cheese, milk, but I don’t buy milk there because it is very expensive.

[Latina]

Participants who did the majority of their shopping at the closest grocery store did so because it was convenient or because they lacked personal transportation and had no choice where to shop. This was particularly true for the African American participants; many did not own cars, and they had to rely on rides from other people or public transportation to do their grocery shopping. By shopping at the closest store, participants could spend less time riding the bus or feel like less of a burden to the person giving them a ride to the store. Shopping at their neighborhood grocery store was also less expensive for those participants who had to pay for a ride to the store.

I like [the Food Lion near my house]. It's all right. I don't have no choice but to like it, because it's right here.

[African American]

I'm having some trouble getting [to the store]. My mother usually takes me right now, so I don't want to let Mom take me here, take me there.... I really don't like to go shopping with her because she's such a picky person, and she gets on my nerve. So I'll tell her to take me one place and then take me back home.

[African American]

Theme 2: Convenience, cooking, and cost

Discussions of purchasing and consuming fresh fruits and vegetables centered around convenience, cooking skills, and food costs. Fruit and vegetable purchase varied among the participants. All reported purchasing a variety of fruits and vegetables, but some participants reported buying primarily fresh fruits and vegetables, while others bought primarily canned or frozen.

Purchasing canned or frozen fruits and vegetables predominated among African American participants. Most reported doing so because they considered canned or frozen more convenient. They thought fresh fruits and vegetables were a waste of money because the items did not last as long and might have to be thrown away.

[Frozen's] just easier to pop out the bag. Pop in the microwave.

[African American]

I don't [buy any vegetables that are not frozen]. It's more sensible for me because, one thing, because when my daughter's in school, there's no one here to eat. And on the weekend, mostly, we're eating at someone else's house.... So when I do buy items like grapes or fresh vegetables, they usually go bad.

[African American]

Canned or frozen vegetables were also more convenient for the African American participants because many had limited cooking skills and did not know how to prepare fresh vegetables. They preferred canned or frozen vegetables because they were quicker to prepare and therefore fit better with their lifestyles.

It's straight from the can, honey, because I can't do fresh vegetables. I don't know how to cook it.... I haven't gotten that good yet. What I have learned is, when I do buy the vegetables in the can, to pour the juice or the water from the can out and use my water or my fresh boiling water or something like that and not boil it in the water or juice that it came in.

[African American]

I would not know what to do with [fresh vegetables], but I call my sister and say, "How do I cook this?"

[African American]

Among women who preferred canned or frozen vegetables, one form was usually preferred over the other form because of a preferred taste or texture. Most participants were not willing to risk spending money on different types of vegetables or new cooking styles because experimentation would be too expensive.

I buy [string beans] in a can and I said, I'm going to try them frozen, since I buy some of this other stuff frozen. I didn't like them. I didn't like the texture. They tasted furry.... If it don't feel right, I can't be fooled. To me the beans tasted furry on my tongue. I said I'm not buying them furry beans. And they were frozen.

[African American]

[Our vegetables] are all fresh. I don't like the taste of vegetables that were frozen, so they are always fresh. And the fresh are better...like, they taste better, and they have more vitamins and things.

[Latina]

I have real picky eaters, and they don't—they try new foods, but they like the same things over and over. I am not gonna spend money on it if they won't eat it.

[African American]

Participants disagreed about whether fresh fruits and vegetables were more or less expensive than canned or frozen. Some participants preferred to purchase fresh fruits and vegetables because they were perceived to be less expensive. However, others preferred processed fruits and vegetables, which they believed to be the less expensive option.

[I get fresh vegetables] every blue moon. Not all the time, just every blue moon... whenever I have the change to get it...because [the canned vegetables] are cheaper than fresh.

[African American]

Fresh vegetables are the cheapest.

[Latina]

Fresh fruits and vegetables were also preferred over canned fruits and vegetables by some participants who perceived fresh as healthier or more nutritious. Latinas, in particular, preferred fruits and vegetables fresh because they were better suited to their cooking styles and their beliefs about how meals should be prepared. Latinas had learned how to cook from

other women in their family, and most prepared traditional, Latin American dishes that required fresh vegetables. For these participants, fresh fruits and vegetables were easier to cook because they were ready to use; they did not have to be rinsed or thawed before being used in cooking.

Other members of my family have their own restaurants. I cook like them: only with fresh things.

[Latina]

I will cook my squashes the Mexican way, same as my tomatoes, chiles and onions.... My sister has taught me how.

[Latina]

Latina participants were willing to try new ways to cook familiar foods, but were not willing to try cooking with new varieties of fruits and vegetables. Some Latinas faced opposition from their husbands or their children, who were not willing to try new foods.

Lack of knowledge about alternative healthy food options

Few participants used farmers markets, community gardens, or roadside stands as alternative sources of fruits and vegetables. Farmers markets were not considered a viable alternative to grocery stores. Hours of the farmers markets were considered inconvenient; any savings on produce were erased by the costs of traveling to the market. Farmers markets were also viewed as inconvenient because most Forsyth County markets did not accept SNAP electronic benefit transfer cards (EBT) or WIC vouchers.

Yes, I go to most places that's going to accept the EBT card or food stamps. That's what [farmers markets] need to do. [Do you buy a lot of fruits and vegetables with your vouchers?] Yes, that's the first thing I do. But we first get our vouchers, I get WIC for myself, and I get WIC for my daughter. We use up our vouchers first for our fruit; then we go out later throughout the month [and] I go buy them with the EBT.

[African American]

I hardly ever [buy things from a farmers market].... They are very far away. And, even though the fruits and vegetables might be cheaper, if I add in the cost of gas that I use driving there, they end up being more expensive.

[Latina]

No [I don't buy things from a farmers market].... I have never gone. [Would you ever go to a farmers market?] I mean, why not? If I have time someday to go to one, I would love to go.

[Latina]

Many participants, especially African American women, also worried about how the food in the farmers markets was handled and what types of chemicals were used on the produce. They perceived there were fewer regulations on foods sold at farmers markets than at grocery stores, so food they purchased at the farmers markets might not be safe. African

American women voiced similar concerns about food safety for produce purchased from roadside stands.

[What if there was a food stand around the corner?] No...no. I'm just have to rearrange my thinking because it's just something about the outside I just don't know. Because like my parents...I know they vegetables come straight out they garden, but...I don't see my daddy's brown fertilizer.... The most I've seen is him spraying with the water hose and stuff like that. I've seen them actually plant their stuff so, you know, I basically know what they're doing, and I know my mom and dad not going to do anything that's going to harm them, so I know they're not going to do anything to harm me, so I probably could eat their [vegetables], but as far as a stand outside, and then I'm not knowing the people, don't know how they raised it, no, I'm not going. I'm cheap, but I just won't do it.

[African American]

Many of the participants, particularly Latinas, who had had previous exposure to an alternative source of fruits and vegetables, such as a home garden, were open to the idea of community gardens or farmers markets as sources of fruits and vegetables. However, they lacked the time, garden space, or access to transportation to use an alternative source as a regular source of produce.

I would go to the garden. It's coming out the ground, is just grown...it's just natural. Anyway, that's what people was doing a long, long time ago before the stuff was in the stores. They went in they backyard, and they started picking they food and fruits and vegetables, and you know it was more easier anyway.

[African American]

I think [a garden] is a better way to go, because it's fresher, and I like fresher produce better than, sometimes, grocery store.... You can tell the difference in the grocery store between the hothouse tomatoes and--it's just a difference...it's a better taste. And it's healthier for you to eat more stuff from the ground than out of the cans because that's where they mix all that stuff in it, their processes and all that.

[African American]

[The produce my neighbors share with me] is very good. I trust them, and they bring us nice vegetables from their gardens.

[Latina]

Those who did obtain food from alternative sources used gardens: community gardens, family members' gardens, or their own gardens. Gardens were viewed as a safe source for fruits and vegetables because the participants would be familiar with the process of growing vegetables and know the types of pesticides or other chemicals used. Gardens were also considered a source of better tasting and more nutritious fruits and vegetables than stores.

Discussion

These women reported diverse factors influencing their fruit and vegetable shopping and cooking habits. Two themes were common across both African American mothers and Latinas, but differed in the way they influenced food-related behaviors.

For both groups, monetary cost of food as well as the anticipated cost of spoilage or waste if the family would not eat it were important determinants of shopping behavior. For African American mothers, preparation cost also factored into shopping, with canned and frozen vegetables perceived to have a lower time cost. In a previous study of price considerations for African Americans focused on all healthy foods, potential wastage and time cost for food preparation were concerns [16]. These same concerns arose in formative research prior to dietary intervention for African Americans with hypertension [24]. The present study, as well as others [1], shows that these factors apply specifically to the purchase and use of fruits and vegetables.

Preference for particular fruits and vegetables emerged as important for both African American and Latina mothers. As expected, this included preferences for specific ethnic foods. African American mothers mentioned purchasing traditional southern foods such as collards and string beans, while Latinas sought out chiles and tropical fruits. Preference for taste and texture extended to the forms of produce purchased and prepared. African American mothers reported preference for the taste and texture of canned or frozen fruits and vegetables, while Latinas' preference for fresh was based on using fruits and vegetables in traditional dishes. At least some of these preferences can be attributed to differences in cooking skills. As relatively recent immigrants from situations where daily cooking was the norm, Latinas were confident in using fresh produce, as long it was familiar; and they sought out specific types of fresh produce. However, they were reluctant to use unfamiliar types, thus potentially limiting their consumption. Concerns with cooking skills among African American women have been found in previous studies [1,25].

Both African American and Latina mothers noted proximity and distance as factors in finding preferred fruits and vegetables. African American mothers cited higher quality produce available in White areas as a reason to bypass neighborhood stores. Both groups, but particularly Latinas, noted the need to seek out specialty foods. For Latinas, finding *tiendas* or other stores catering to the increasing Latino population was an important determinant of shopping for produce; they were willing to travel to find these stores. Previous research [15,25,27,28] has cited dissatisfaction with the neighborhood food environment as a predictor of traveling longer distances for groceries. Research in Chicago found stores in African American and Latino neighborhoods tended to have ethnic-specific foods [17]. This may be true for more African American mothers and fewer Latinas in the present study because of the recent arrival of Latinos in these neighborhoods. Concerns about distance to preferred stores and having to settle for non-preferred neighborhood stores was reported by African American mothers, but not Latinas, largely due to African American mothers' lack of access to personal transportation. Mass transportation in the county is limited; many bus trips require riding to a central hub and transferring to a second bus to reach a destination, and there is no Sunday bus service. This suggests that

neighborhood factors may have greater effects on diet for African American than Latino families.

Efforts to increase the number and distribution of small food outlets like neighborhood farmers markets or produce vendors have been successful in cities such as Philadelphia or Detroit [29,30]. In the present study, ethnic differences were apparent in attitudes toward these alternative healthy food options. African American mothers voiced concerns for food safety at farmers markets and roadside produce stands. Such concerns about fresh fruits and vegetables have been voiced by women in other studies [1], though not specifically about foods from alternative food sources. Such results may be especially relevant to other small cities that lack established direct-to-consumer produce vendors. Efforts to increase consumer receptivity and use of such healthy food options may require providing information on farms' growing practices and the opportunity to meet the person growing the food.

Accessibility and awareness of alternative healthy food options should also be addressed. While many of our participants, particularly the Latinas, reported the desire to shop at a farmers market, they could not because the markets had inconvenient hours or locations. Careful consideration of farmers market or community garden locations could eliminate transportation barriers and facilitate use of these healthy alternatives [31,32]. Many of the women in our study relied on SNAP or WIC benefits for produce purchase; they did not visit farmers markets because the markets did not accept these benefits. Increasing the ability to use such benefits at farmers markets would lead to increases in monthly EBT/SNAP sales. Previous research has shown SNAP sales increased by 85% after the implementation of EBT sales at farmers markets in San Francisco; increasing the SNAP terminals at farmers markets in West Philadelphia increased EBT/SNAP sales by 38% [33,34].

Both the Latinas and African American women in our study were more receptive to gardens than roadside stands or farmers markets because of food safety concerns. As in previous studies, many African American women had positive memories of family gardens from their youth [1].

Our results suggest that strategies to improve access to fresh fruits and vegetables in minority communities may need to be tailored to the target minority group. For all minorities, strategies to improve access could include increasing the number of neighborhood stores offering fresh produce and increasing the quality and affordability of fruits and vegetables in such stores [26]. Other studies [13,18] have shown that locating a food source in a food desert can increase fruit and vegetable consumption by a third. However, steps to increase cooking skills and provide opportunities to try new foods may be necessary to change attitudes and provide a meaningful increase in fruit and vegetable use. In this study, the two groups of women differed in employment and marital status. While the same may not be true in all groups of African American and Latina mothers, such differences in this study may underlie differences in these women's food related practices. Greater employment for African American women may restrict time available for shopping and cooking. At the same time, possibly greater role of men in dictating family practices may play a role in adherence to traditional food-related practices by Latinas.

This study's limitations should be noted. Interviews were conducted with a small sample of women. The Latinas were first-generation immigrants primarily from Mexico, so their preferences and experiences may not apply to Hispanic women from other countries or to those who were born and raised in the United States. The research did not include a detailed investigation of fruit and vegetables obtained from emergency food sources or restaurants. Evidence from other studies suggests that fruit and vegetable consumption falls with duration of time in the US [35]. This study also did not evaluate the diet quality of families in the study. Future research should examine the impact of attitudes and preferences expressed on overall diet quality. One might predict that lack of transportation would constrain the amount of canned and frozen foods purchased by African American women and that a preference for canned foods could be associated with greater consumption of added salt and sugar. Such effect might not be seen in Latina families, though their reluctance to try new fruits and vegetables might lead to lower diet quality through lower overall fruit and vegetable consumption.

Nevertheless, this study suggests directions for organizations attempting to improve health through changes to the food environment. Physical changes to improve the food environment, as well as changes directed at community members' skills, attitudes, and practices, can work together to improve consumption of fruits and vegetables. Organizations such as churches, community centers, and workers' centers, as well as government programs such as WIC, may all have roles of play in improving the food environment and in providing education to mothers to help overcome barriers to healthy eating.

Acknowledgments

Funded by NIH grant T35-DK007400, NIH grant RC4-HL104866, and funding from the Wake Forest Translational Science Institute's Program in Community Engagement.

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Table 1

Personal characteristics of African American and Latina study participants.

Characteristics	African American n=24	Latina n=24
Age		
23–40 years	17	18
41–65 years	7	6
SNAP or WIC	18	15
Education		
Less than high school	0	12
High school, GED	5	9
Some college	14	3
College graduate	5	0
Marital status		
Not married	19	4
Married or living as married	5	20
Employment Status		
Employed full time	11	6
Employed part time	2	0
Not employed	11	18
Length of time in the US		
0–10 years	*	14
10–20 years	*	10

* All African American women were born in the US.