

**Contextual Factors and Household Food Security:
A Participatory Ethnographic Approach**

According to USDA food security monitoring efforts, an estimated 31 million households were uncertain they would be able to acquire enough food to meet their families basic needs, or were food insecure (Andrews 2000). Studies conducted by the census bureau as part of the 1995 Survey of Income and Program Participation (SIPP) indicate that, among households reporting food insufficiency in the previous 30 days, the amount of time a household was short of food in a month was 7 days and that they need \$100 more per month to avoid food shortages (cite).

The monitoring data also shows that rates of food insecurity are declining in the overall between 1995 and 2000, but high rates in persist among African-American and Hispanic households (Andrews 1999). In 1999, 21.2% of African-American and 20.8% of Hispanic households reported food insecurity compared with 7.0% of White, non-Hispanic households. Furthermore, 13.8% of inner-city households report food insecurity compared to 7.7% of households outside of central city areas. Consistent with qualitative (Radimer 1992; Hamelin, Habicht 1998) and quantitative (Rose 1999) studies of food security, these trends in the monitoring data suggest that the social and physical environment are important determinants of household food insecurity.

Among the factors in the physical environment, the lack of supermarkets in central city and rural areas is an often cited determinant of food insecurity (Adamchack 1997; Cotterill 1998; Donohue 1998). Morland found that supermarkets are four times more prevalent in predominantly White census tracts than predominantly African-

American census tracts, suggesting that predominantly African-American neighborhoods might have higher rates of food insecurity just as more African-American households report food insecurity. Other large national studies have demonstrated that the number of supermarkets in central city areas is declining as the population has shifted to suburban residence (Adamchack 1997). While the reasons for these demographic and economic changes are complex certain structural trends like relatively high rents in urban areas and the dominance of large supermarket chain stores are important factors likely to be important factors in the geography of food insecurity. In a study comparing food stamp participants with eligible non-participants, Castner found that the most common reasons for not shopping for food at a supermarket were distance and cost (Castner 2001). However, little research has considered how food accessibility affects food insecurity at the household level.

A second important factor in the physical environment is likely to be restaurants since some 30% of the usual calories consumed by US residents are foods that are prepared away from home (MacNamara 1999). Again, the role that restaurant availability plays in food insecurity has not been explored and no model has been suggested. In general, the literature on restaurant food consumption suggests that prepared foods are higher in total fat, saturated fat and total calories (French and Jeffery). Jones has found that fast food restaurants are more accessible in predominantly African-American and Hispanic neighborhoods in Durham, NC (Jones, Bentley and Ryznar 2002), and Reidpath and colleagues found that fast food restaurants are more prevalent in low income census wards in London (Reidpath 2002).

The socioeconomic environment is also likely to have important effects on household food insecurity. Hamelin and colleagues found that households with chronic food insecurity suffered social consequences and felt that household food insecurity was a “threat to harmonious community life.” (Hamelin Habiicht and Beaudry 1999) Rose found that household income alone was not a sensitive indicator of food insecurity and concluded that other household costs such a housing, health care and child care costs also affect household food insecurity (Rose 1999). Local variation on housing, health care and child care costs suggests again that local environments maybe important in understanding food insecurity at the household level, but how they are related to food insecurity remains unclear.

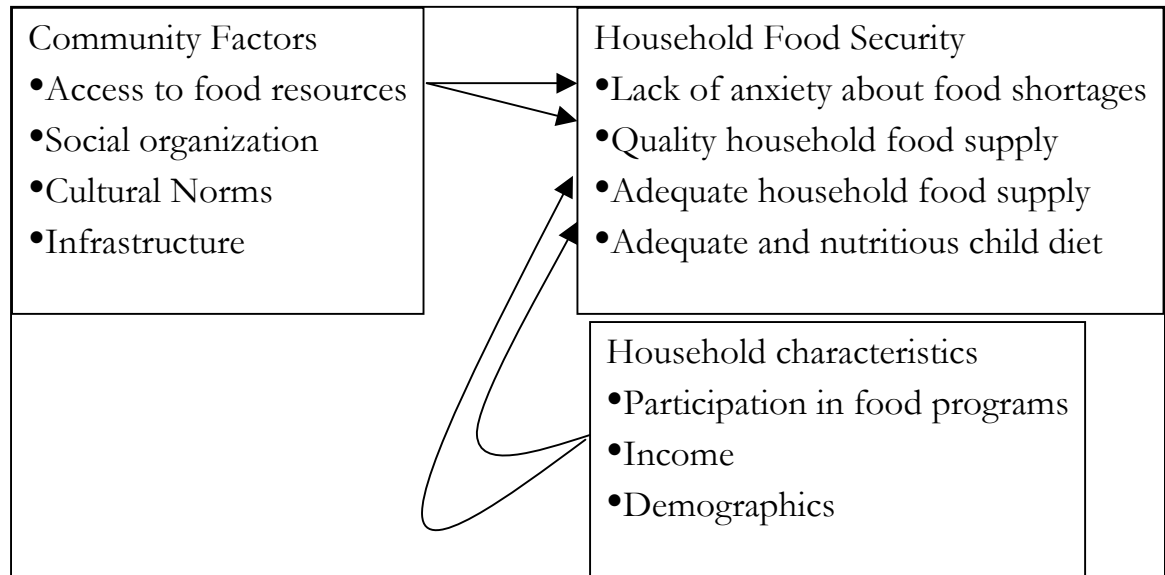
In this study we used a participatory ethnographic approach to understand from the perspective of residents of predominantly African-American and Hispanic neighborhoods, how the local environment effects household food insecurity. The goal of this research was to develop an ecological model of household food insecurity based on the insights of study participants.

Conceptual Model

The USDA household food security scale explores four conceptual domains— anxiety about food shortages, actual food shortages, concerns about dietary quality and differences between adult and child quality and adequacy (Nord 2000). In this study we proposed that the four conceptual domains may be differently influenced by larger community and social factors (Figure 1).

Figure 1. Conceptual Model of the Role of Community Context in Household Food

Security



Initially, we proposed that community factors in general may play a stronger role in a household's sense of anxiety about food shortages and concerns about dietary quality, and that other household characteristics were more proximate factors than community factors in actual food shortages and differences between adult and child diet adequacy and quality.

Methods

We used a community-based participatory ethnographic approach to develop an emic model of contextual effects on household food insecurity in Durham County, NC. Specifically, we conducted 13 photo voice-based focus group interviews of at least 5 people each (Wang and Burris 1994; Killion 1999), and 12 individual in-depth interviews with key informants (Bernanrd 1999) through community organizations that function in

predominantly minority areas of Durham. All interviews were taped and transcribed for analysis. We also kept extended notes (Spradley 1979) on all community meetings, interviews and participant observations. All notes were transferred to an electronic format for analysis in NVivo 2.0 (QSR, 2002).

The photo voice method is a participatory documentary photography method that allows researchers to gain insight into study participants' view of their own world or an emic perspective (Wang and Burris 1994; Pelto and Pelto 1983). Participants in this study were recruited from community organizations to participate in groups to document "how their communities help them to eat enough of the kinds of foods they want to eat." Each group began with an initial meeting where food security was defined according to the Life Sciences Research Office definition, and an unstructured interview (Bernard 1999) about the food security issues in their communities. Each group selected one topic or photographic assignment to document with cameras over the course of 1 to 2 weeks (Table 1). All groups had the option had the option to continue collecting photographs and meeting until they felt that they had adequately explored and documented food security in their communities, consistent with qualitative data collection methods of collecting data until no new data can be discovered (Patton 1990).

Table 1. Photography Assignments of Photo Voice Groups to Document Food Security Concerns in Durham

Group	Session	Assignment	Proposed by
1	1	Poor Quality of foods in Durham	Participants
	2	Good Latin Foods	Participants
	3	Living in a good access neighborhood	Researchers
2	1	What Latinos eat	Participants
	2	Restaurants & stores that have good & bad foods	Participants
3	1	What youth eat	Participants
4	1	My food story/food recovery	Organization
	2	Problems at community kitchen	Participants
	3	Eating at social events (BBQ)	Participants
	4	Eating when you live on the street	Organization
5	1	My usual diet	Organization
			Researchers
6	1	Healthy choices in the community	Participants
	2	Unhealthy choices	Participants

In two cases, the community based organization suggested that the photo voice would be particularly useful if participants were to focus on a specific topic of the organization's suggestion. In those groups, participants were still encouraged to develop

their own perspective on food security issues through the photography. In two other cases, the research team proposed a session based on what the group had done up until that point or what the organization had recommended. After participants completed a roll of film, project staff would collect and develop film and schedule a focus group interview. The focus group interview began with discussions about the photographs and all interviews ended with a list of community food issues and possible solutions. Six groups participated in a participatory analysis in which participants identified the relevant issues, developed themes of issues and interconnected the themes into a conceptual model. However, because of time constraints or participant concerns or confusion, all groups did not develop a conceptual model at the end of each session.

Individual interviews sought to probe further into participant experiences with accessing food in their community, program participation, and the domains of the household food security. Individuals were invited to interview if they were in the study area for at least a year and had articulated specialized knowledge of community problems related to food during photo voice or participant observation.

Participant observation was used to complement and contextualize the information collected during interviews (Bernard 1999). The research team also participated in organizational activities such as health fairs cholesterol screenings, lunch at the community kitchen, and forums. The researchers also shopped in area stores, ate in area restaurants and observed daily life in participants' neighborhoods. All researchers kept brief handwritten notes that were expanded daily and served to record their interactions and impressions related to the project.

Analysis

All qualitative data were analyzed using NVivo 2.0 (QSR 2002). All text was coded according to the domains of the household food security scale and the semantic relationship to the domain described in the text (Spradley 1979) (Table 2). These two layers of coding were used to develop a theoretical matrix of food security in minority neighborhoods in Durham based on the body of qualitative data.

As mentioned above, six groups also analyzed their data through participatory process. Specifically, after they had described and discussed their photographs, participants and researchers would write all the ideas discussed on index cards (one idea per index card). All index cards were then placed on a static board and sorted by participants into groups that were meaningful to them. Each group of idea cards was given a name and called a theme of the interview. All themes were then connected using lines and arrows to specify how the themes interrelated. Photographs were then selected to represent each major theme.

Table 2. Deductive Codebook

Domain	Semantic Relationship	Example of vignette coded by domain and semantic relationship
Anxiety about Food Shortages	Rationale (example <u>is a reason for</u> domain)	<i>“We lived in their house so I couldn’t really cook. Now that we are here I can control how much we eat out and how much we cook.”</i>
Actual Food shortages	Sequence (example <u>is a step in</u> domain)	<i>“Her husband left two months ago. She has 3 children and she’s behind on rent. All local agencies are tapped out.” (from researcher’s notes).</i>
Concerns about dietary quality	Means-End (example <u>is a way participant experiences</u> domain) Cause-effect (example <u>is a result of</u> domain)	<i>“My husband’s relative, we went to her house, and she had a big bag of pre-fried tacos. She tells me, ‘Buy them.’ They are already fried; she must have had a box of about 50 of them and that is what she is feeding her kids.”</i> <i>“When we go to eat, I tell my husband we have to eat by the [food guide] pyramid”</i>
Differences between adult & child diet	Inclusion (example <u>is a kind of</u> the domain)	<i>“Sometimes we eat the cactus with egg, cooked. I make it for my husband and he likes it spicy so I make it spicier for him. I can’t give them [the children] what I feed my husband, it’s too spicy.”</i>

Results

Conceptual Domains of Household Food Security

Anxiety about food shortages. Participants in this study mentioned anxiety about food shortage either in their own households or in the community a total of 32 times.

Participants describe a number of strategies they use to make food last in their households and what they would do if they ran out of foods (Table 3). Food shortages were a cause for anxiety not only in households but also in community institutions and participants had developed coping strategies for both. In the case of anxiety about food shortages, it appears that community factors such as food and food program accessibility do play a direct role and that the domain itself can be interpreted within and beyond households.

Table 3. Qualitative Matrix of Anxiety about Food Shortages

Strategies to Avoid Food Shortages	Resources available to avoid food shortages
<p><i>I buy soda and milk there [convenience store], that's the only thing. In the grocery store milk is \$3 and it's a little over \$2 at the gas store. The soda, \$1.49 at the grocery store, and I can get it for less than a \$1 at the gas station. I don't think they accept WIC or food stamps there, but I'm not sure.</i></p>	<p><i>Where I used to live in apartments I saw more people using WIC and food stamps. Around here, in this neighborhood, you just don't see it very much. Plus we don't live as close together either so it's hard to know what other people are using.</i></p>
<p><i>Its hard too, my husband works, he gets \$350 a week and its not a lot of money, but then you take \$500 for the house, then for the car, electricity, food, etc. We go to Costco too sometimes to get bulk items or things for the house.</i></p>	<p><i>I don't know of specifics but I've heard from other people, especially in Chapel Hill, they are given vouchers or food from the Salvation Army, and churches. And I've heard that El Centro Hispano will give them food, that is what I've heard.</i></p>
<p><i>People can bring their own salt and pepper [to the community kitchen]. As a solution to cut back on salt and pepper expenses, Shirley could hand out packets by request only. Lloyd then stated that we need to do more to raise more money for the Kitchen.</i></p>	<p><i>Yes, it's [WIC] a big help. We use it when we run out of milk for the baby and then we go out and buy more. We also use it to get cereal for the baby. You shouldn't use it if you have a ton of this stuff around the house already, why go get more. With our baby, when he was small, we would often run out of milk before the next time we could get more with WIC. Now they increased how much he can get so that's good. Before they would give him 4 bags for the month, now he gets 8. Plus he also gets cereal. I tell my daughter not to pick up all the cereal he's allowed since he doesn't eat it all.</i></p>

Actual Food Shortages were not discussed often by participants in this study. Nine total passages were coded under this domain. Participants would refer to past incidences of food shortages in the households in these cases. The reasons for food shortages included

job insecurity and not making it to an emergency food resource during regular business hours. For instance, one participant described the problem of food shortages as follows,

I do have friends who did run out of food. We gave them some of the food we had, we have enough to share like beans and rice. I told them they should go to El Centro Hispano and ask them if they knew of places to go. The husband was looking for work, the thing is that most Latinos don't want a handout, they want to work. What Latinos need and want is to work.

In this case, community factors also played a direct role in actual household food shortages. Again the accessibility of food programs was mentioned and job opportunity was another named community factor. Further research with families that are chronically food insecure is need to fully develop a contextual model of actual food shortages.

Concerns about Dietary Quality

Most interviews focused on participants' concerns about dietary quality. Five qualitative domains of concerns about dietary quality emerged from these interviews. They were taste, nutrient density, balance, freshness and variety. Table 4 includes examples of expressed concerns about dietary quality. The reasons participants expressed for concerns about dietary quality varied but focused most generally on health consequences particularly for children. For instance, one participant explains,

We don't eat fast food either, my kids like broccoli, I make that for them at home. I cook for them mostly, they don't ask to go out to eat. We do go out usually once a week, we go to Chili's or Golden Corral. We only go

out on the weekends, when my husband is off. I think for our community, the Latinos, there are a lot of health issues related to fat, they need to know that they own their bodies and have to take care of themselves, its so important. If you take care of your body you feel better.

Another health concern, obesity was mentioned during interviews. Again, children are a major concern. A sample of concerns about diet quality and obesity is the following,

I have a friend who is really overweight and so are her kids. She buys food that isn't healthy for them.

However, concerns about diet quality of children were also related to children being underweight. One participant described her worries about her child, the variety of foods he eats and his weight as follows,

My son is 3 years old and he doesn't like meat either, he prefers a bowl of lettuce with lemon and chile or a cucumber to meat. He doesn't want to eat meat. My sister says he is skinny but maybe he's a vegetarian because at all hours he wants to eat a cucumber.

1. **Table 4. Domains of Concern about Dietary Quality**

Domain	Example
Taste	<p><i>Sonya then asked him how does he know when he's eating well? He recalled starting to use drugs at 16 or 17 years of age. He used drugs for 23 or 24 years, and he's been clean for 8 months now. He's beginning to get feelings in his taste buds back again. He said, "I feel like a kid again." [From ethnographic notes]</i></p> <p><i>In the morning it's usually a bowl of cereal, a cup of juice or maybe some toast with jam or peanut butter. In the mid-day they usually ask for an egg. My daughter is in school and she eats lunch there and some days she likes it but other days she doesn't. She says the food is flavorless and she prefers my cooking. We do get reduced lunch for her and sometimes I'll send her to school with a snack or a juice.</i></p>
Nutrient Density	<p><i>When I go to the store, I pay close attention to the ingredients. I look to see if it has pork in it, carbohydrates, protein, calcium. I look for a balance. I've learned that what you put in is what you get out.</i></p>
Balance	<p><i>I always try to feed my family right, give them healthy balanced meals.</i></p> <p><i>I give them the portions they need, I vary the kinds of food I give them so they get a balance of everything. I might make them fish one day w/ lettuce and tomato. Or macaroni and cheese or creamed chicken, I try to make foods that have low fat and are nutritious. Yogurt too, that is good for them. If my husband goes grocery shopping, he knows what I like to buy to cook for them.</i></p>
Freshness	<p><i>We go to the Chinese restaurant if we go out but I usually cook at home during the week. But if we do go out, we love the Chinese restaurant. I love the seafood, the rice and the vegetable dishes. It looks really fresh all the time. In one week we might go once but no more than that. More like 2-3 times a month.</i></p>
Variety	<p><i>Lloyd [director of community kitchen] stated that if there are special diet needs, let him know and he'll talk this over with Shirley. He wants to provide other dishes to give everyone a choice of 2. [from ethnographic notes]</i></p>

Participants related each of the quality domains more clearly to household factors such as interpersonal relationships, shopping choices, preference for “home foods”. In the case of concerns about dietary quality, the household appears to be more important than community factors.

Differences between Adult and Child Diet

In this study, Hispanic participants worried about the changes in their children's diets in the US. In particular, parents were worried that their children were eating foods of poor dietary quality. Mothers had several explanations for why their families consumed "bad" or "fast foods". One of the most prevalent themes in these groups was the influence of children on home prepared and restaurant food choices. While one participant discussed her photographs of local restaurants, she explained,

This is a picture of Kentucky Fried Chicken and this is nearby us. My feeling about this food is that it is bad for you, but not that bad.

Meanwhile, her daughter interjected,

I love Kentucky Fried Chicken.

The same mother describes her daughter as hard to feed and preferring "bad" foods.

When she was baby and now, all she wants is to eat fast food. I will make hamburgers. I make them here on the grill, but not 3 or 4 times a month. Maybe once a month. She eats some food. She won't eat vegetables. She'll eat meatballs. Basically she eats what she likes but not everything I make for her.

A participant in the other group describes a picture of her daughter with similar terms. She said,

The fast food is bad for you; it doesn't have nutrients. It's greasy. In this picture she [the daughter] is eating a hot dog, though I hardly give them to her. She's been challenging. She likes this kind of food. The other kids

aren't as difficult. I give them spaghetti and salad, but she won't eat it. And here she is drinking soda.

Some of the participants' children actively reject traditional Hispanic foods as well as preferring fast foods. After a participant described a child who refuses "Mexican food", the group facilitator asked if that was why the child preferred to eat at fast food restaurants. The mother responded,

Exactly. I try to punish them a little and make them eat my food since it is more nutritious.

No other parent spoke of using punishment to encourage healthy eating, but this response reveals how concerned parents are about their children's diet quality. Another parent took a photograph of a traditional meal she prepared for her family and noted that the children refused to eat any of the foods except tamales.

Accessibility

Another common theme in the discussion of adult and child diet differences was how easily accessible fast food restaurants were. In some cases, participants said that children would insist on stopping at a restaurant on the way home from school. Some participants said that they would also eat at fast food restaurants without their children, but not as frequently. The influence of children and the easy accessibility of fast food restaurants make them a common choice in participants' families.

All these restaurants are really close to each other, right in front of each other. But the Burger King, well for me, I could eat once a month, but my kids like it there. They say it is good for them.

Another participant pointed out that she ate at a particular restaurant for lunch because,

I used to work at a restaurant right across the street from the one [Chick-Fil-A] on 54. I wouldn't bring lunch; I would just go there and eat. The chicken is really good, or the hamburger.

During each session, there were photographs of fast food, fast food restaurants or people consuming fast foods giving a sense of the ubiquity of fast food in their local food environment.

Marketing Strategies

Mothers noted advertisements and other marketing strategies that encouraged them to take their children to fast food restaurants. Meals designed for children are one such strategy. One participant explained,

McDonald's has their toy, so does Burger King and Wendy's.

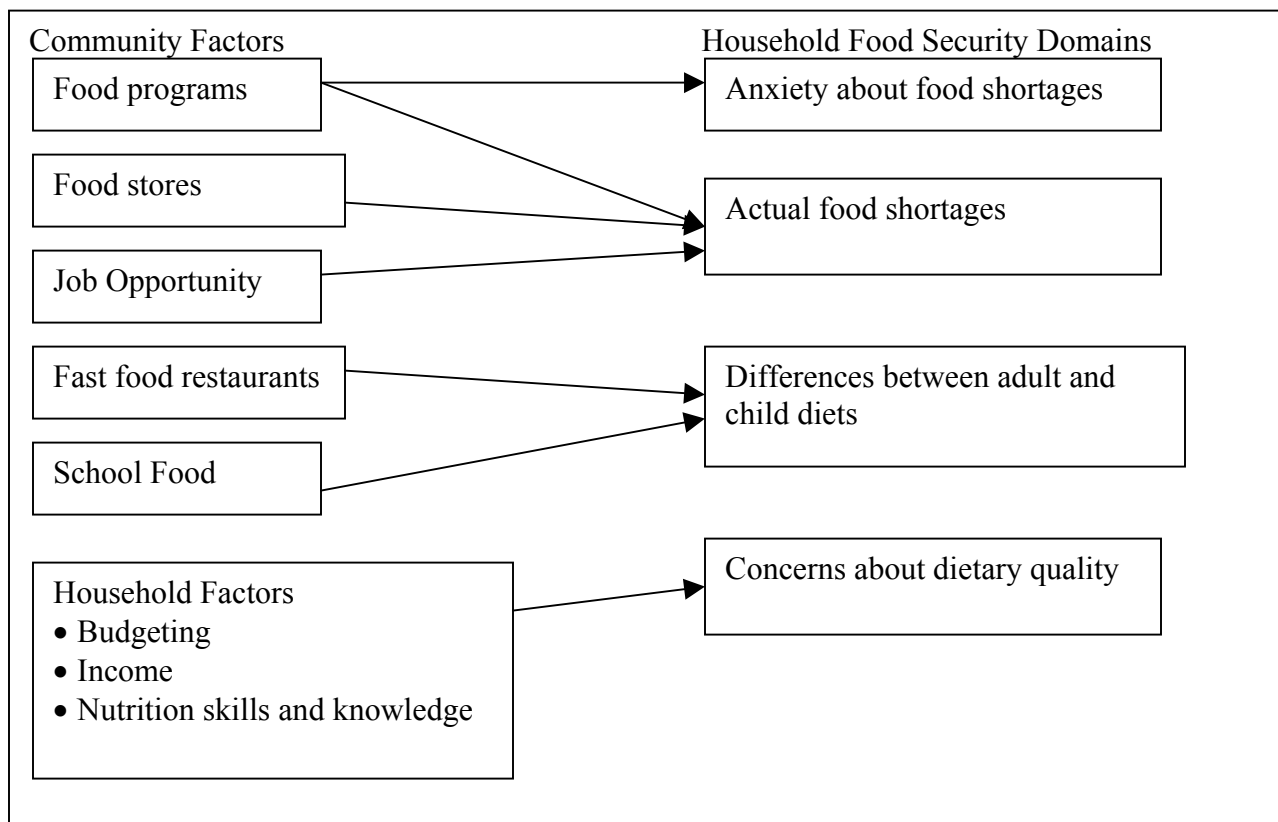
Another participant added that,

And the kids, you buy them the happy meal and instead of eating they go off and play with the toy that comes with it.

Another fast food marketing strategy that participants mentioned is coupon distribution at schools. One participant's child won a gift certificate to a local fast food restaurant as a reward at school. Both groups also noted TV and radio commercials as a source of influence on their choice to consume fast food, although they did not discuss the role of commercials at length during these interviews. Participants took a number of photographs of fast food restaurant signs and buildings.

In the case of Hispanic households, the role of community factors in differences between adult and child diets appeared quite strong. In particular, these participants were concerned that the accessibility of fast food in schools and in their neighborhoods was directly influencing their childrens' dietary quality.

Figure 2 is a synthesis of the information that participants suggested about the role of community factors in the households' food security based on the deductive analysis



Participant Analysis

Some groups also analyzed their group data by developing a context-specific theory of the photography assignment. In Figure 3, a comparison of themes generated in groups and theme connections is illustrated in order to

develop an overall participant theory of food security. Figure 4 demonstrates the combination of all participant analysis of the photo voice data. All groups did not complete an analysis of each photo voice session, and therefore this model should not be interpreted as an overall result, but rather an example of how participants analyze their own data during the research process.

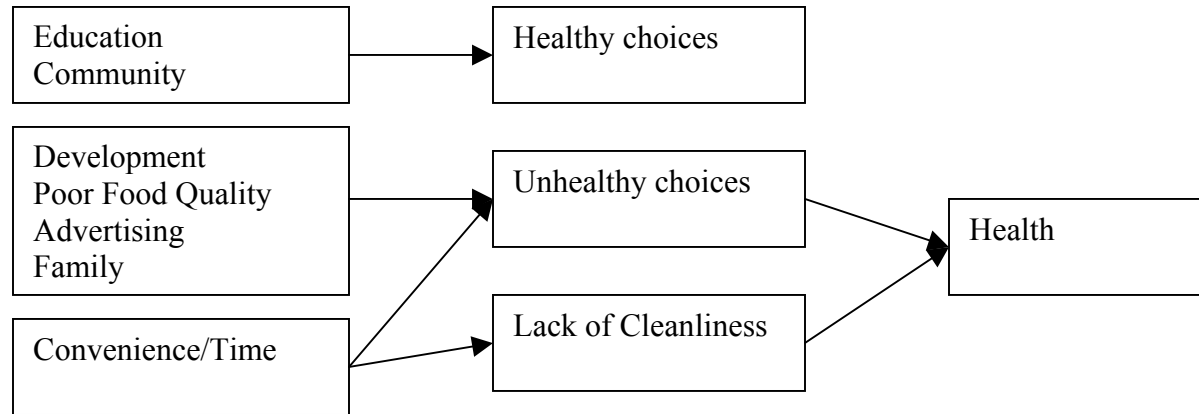
Figure 3. Logic Chart Showing Participant Themes and Interconnections based on their own analysis of Photo Voice

Data.

<i>Themes</i>											
	Healthy choices	Unhealthy choices	Education	Community	Development	Poor Quality	Advertising	Family	Convenience	Health	Lack of cleanliness
Healthy Choices											
Unhealthy choices										✓	
Education	✓										
Community	✓										
Development		✓									
Poor Quality		✓✓									
Advertising		✓									
Family		✓									
Convenience		✓									✓
Health											
Lack of cleanliness										✓	

The logic chart is read row to column, indicating that the theme in the row leads to the theme of the checked column.

Figure 4. Participant Analysis of Food Security in Durham



Discussion

Participants in this study were asked to document “how the community supports them in getting enough of the kinds of foods they want to eat”. While some anxiety about food shortages was occasionally expressed, participants in this study indicated that the quality of food available in their communities is their major concern. Participants described several domains of quality and the causes and consequences of their concerns about diet quality in detail. Related to concerns about diet quality, the Hispanic participants in this study expressed concerns about their differences between their diet and their children’s diets.

Fitch has suggested that there is a cultural assumption in the US that the rich should worry about dietary quality and the poor should accept the options available to them (Fitch 1985). The participants in this study point out that, even though they live on limited budget, quality is very important. In fact their concerns about dietary quality included several dimensions and were linked to health concerns. This study confirms that concerns about dietary quality are key components of food security in the minority neighborhoods.

The results of this study also indicate that participants have an ecological perspective of food security, or understand their diet in its local context. In the overall participant-generated model, three dimensions emerge which we could refer to as community and household context, individual behavior and health consequences. In other words, participants had a context specific understanding their food behaviors that as

sophisticated and well-developed. Their understanding food security emerged through the qualitative methodology and participatory research approach.

The participatory ethnographic approach in this study explored the relevance and importance of context in the four conceptual domains of the household food security scale used to monitor food security in the US. The data indicate that the domains are salient in local understandings of food security, but that participants held specific values about each of these domains. For instance, some participants described the misuses of food assistance as more concerning than food shortages. They did not want to appear to be abusing the safety net even when they needed the services provided by these programs. Sandelowski has argued that qualitative description is an increasingly essential research methodology because it stays close to the words and emic meanings of participants and relies on in-depth exploration of participants' perspectives (Sandelowski 2001).

The descriptions of dietary quality point to the need for more qualitative research about the role of poor food quality in household food security. For instance, longitudinal data that tracks attitudes and behaviors of food insecure families as they improve their financial status may help to fill gaps in our understanding of how food insecurity, dietary quality and health are linked in minority communities. Finally, among Hispanic participants there was also concern that children eat differently than their families in ways that are shaped by access to fast food in schools and the community. This points the need to broaden our conceptualization of food security to include eating well in a balanced nutrition environment.

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