

Factors Influencing Dietary Practices Among Ghanaian Residents and Liberians Living in a Protracted Refugee Situation in Ghana

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ABSTRACT

Objective: Examine dietary practices among Liberian refugees living in a protracted refugee situation and Ghanaians living among them.

Design: Qualitative data were collected via audio-taped in-depth interviews as part of a larger mixed-methods cross-sectional study.

Setting: Buduburam Refugee Settlement and neighboring villages, Ghana.

Participants: Twenty-seven Liberian and Ghanaian women aged ≥ 16 years, who lived with ≥ 1 other female generation.

Phenomenon of Interest: Similarities and differences in factors influencing dietary practices among Liberian refugees living in Buduburam Refugee Settlement and Ghanaians living in and around this settlement.

Analysis: Domains, themes, and subthemes were confirmed through a highly iterative coding and consensus process. ATLAS.ti (version 7.5.10) was used to finalize coding and extract quotations.

Results: Seven domains emerged forming direct and indirect pathways influencing dietary patterns among Liberian refugees and Ghanaians: social support, food availability, nutrition knowledge, cultural food beliefs, food access, food preparation, and national identity.

Conclusions and Implications: Findings provide important insights into crucial factors driving dietary practices among refugees and local communities in and around a former protracted refugee settlement. Results strongly suggest that nutrition education, food availability, and access issues should be addressed with culturally sensitive programs targeting both the refugee and host communities.

Key Words: cross-cultural comparison, diet, food, nutrition, refugees, women (*J Nutr Educ Behav.* 2019; 51:567–577.)

Accepted September 21, 2018. Published online November 13, 2018.

INTRODUCTION

By the end of 2016, 65.6 million people worldwide had been forcibly displaced from their homelands, reaching the highest level since World War II ended in 1945.¹ Of

these people, 21.5 million were refugees, with more than half living in a protracted situation, defined as “a situation in which 25,000 or more refugees from the same nationality have been in exile for five or more years in a given asylum country.”¹ Given the

extended length of time protracted refugees live in their host country,¹ refugees and host residents can experience cultural exchanges that influence traditional practices, including diet. Evidence from developed countries suggests that resettled refugees undergo shifts in dietary practices that transition their diets away from their traditional foods and more toward Western food practices of the host country.^{2–5}

The presettlement eating and shopping experiences of refugees were shown to influence their current resettlement dietary behaviors. Food shortage and deprivation experiences in their home countries can contribute to overeating, eating poor-quality foods, and higher meat consumption in their host country.^{6,7} Resettled refugees may arrive

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Conflict of Interest Disclosure: The authors have not stated any conflicts of interest.

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<https://doi.org/10.1016/j.jneb.2018.09.007>

with limited knowledge of food budgets, shopping patterns, and nutrition, which makes it more challenging for them to navigate a new food environment and make informed food choices.^{6,7} Traditional food can be an expression of national identity and cultural preservation, and refugees may have difficulty preserving traditional diets within their households (HH).⁸

Little is known about the exchange of dietary practices between protracted refugees living in a developing country and their host country residents. Buduburam Refugee Settlement provided an environment in which cultural exchanges between refugees and host country residents could be studied. This refugee settlement was established in Ghana in 1990 by the United Nations High Commissioner for Refugees in response to the mass exodus of Liberians fleeing Liberia's first civil war, which lasted between 1989 and 1991 and displaced around 850,000 people.⁹ Most Liberian refugees seeking asylum in Ghana were resettled within Buduburam Refugee Settlement.

The original 140-acre parcel of land comprising Buduburam Refugee Settlement was meant to host 5,000 refugees, but by 2004 it had more than 50,000 residents and had expanded into several nearby villages.¹⁰ The surge in population was due in part to a second civil war in Liberia (1999–2003).¹⁰ About two thirds of the settlement's population consisted of Liberian women and children, many of whom were vulnerable because of age or illness and unable to support themselves.¹⁰ At the time of this study in 2008, the Liberian refugee population of Buduburam had decreased to about 20,500.¹¹ A study conducted in 2012 among Liberian refugees living in the settlement found high rates of food insecurity; 52% of Liberian HH surveyed experienced food insecurity.¹² Although the camp had a nutrition program, which provided education and supplemental food to malnourished children, other food relief was scarce, targeting only those identified as vulnerable.

The Liberian refugee population of Buduburam has declined over the years owing to steady repatriation of

Liberians to a liberated, peaceful Liberia.¹³ Although Buduburam Refugee Settlement had been supported by the United Nations High Commissioner for Refugees at various times throughout its history, support was completely discontinued in 2012.⁸ Buduburam is now under the authority of the Ghanaian government and remains the home of thousands of Liberian refugees.

The International Health Program Office at the Centers for Disease Control and Prevention recommends that adequate relief programs address health and nutrition based on sound evidence.¹⁴ Refugees comprise a vulnerable population that is susceptible to food insecurity and diet-related health conditions,^{5–7,15} but there is a dearth of research examining the sharing and adoption of dietary practices between protracted refugees in developing countries and their host country residents. This study fills this gap by examining similarities and differences in the factors influencing dietary practices among Liberian refugees living in Buduburam Refugee Settlement and Ghanaians living in and around this settlement.

METHODS

Study Design

In-depth interviews were collected as part of a larger cross-sectional study that used both qualitative and quantitative methods to examine (1) shifts in dietary practices among Liberian refugees since living in a protracted situation in Buduburam Refugee Settlement, and (2) the influence of Liberians on Ghanaians living in and around that refugee settlement. A grounded theory approach guided the qualitative data collection and analysis,¹⁶ leading to the development of a conceptual model describing factors contributing to dietary practices among Liberians and Ghanaians. The authors received institutional review board from the University of Connecticut and University of Ghana to implement the study, and then the University of Ghana and Yale University to analyze the data.

Participants and Recruitment

This study used purposeful (convenience) sampling because it was not possible to conduct probabilistic sampling. Participants were Liberian and Ghanaian women aged ≥ 16 years who lived with their mother and/or grandmother, because women are the primary food purchasers and preparers within this population. Eligible HH in Buduburam Refugee Settlement were identified by nutrition program staff working in the settlement. Locals, such as the village chief, identified eligible Ghanaian women in 2 surrounding villages. Six Liberian and 6 Ghanaian HH were included, for a total of 27 participants (14 Liberians and 13 Ghanaians) across 12 unique HH, which was determined to be an adequate sample size to reach theme saturation. Nine interviewed HH (4 Liberian and 5 Ghanaian) had 2 generations of women; 3 interviewed HH (2 Liberian and 1 Ghanaian) included 3 generations.

Data Collection

In-depth semi-structured interviews were conducted separately with the grandmother, mother, and granddaughter (if aged ≥ 16 years) in each HH. Each HH was coded with a unique number for identification. Verbal consent was obtained before the interview. Interviews were conducted in Twi (the local Ghanaian dialect) for Ghanaians or English for Liberians by a trained bilingual Ghanaian interviewer who was also the nutrition coordinator in the settlement. To minimize bias and maintain quality, the primary investigator or co-primary investigator of the project attended all of the interviews. Ghanaian interviews were interpreted at the time of the interview to ensure details were understood. One English-speaking interview was conducted through an interpreter for a Liberian grandmother who spoke a Liberian dialect (Krahn). Demographic information, including HH size, employment status, and education level, was collected before each interview. All interviews were tape recorded. Women were given a mosquito bed net as

compensation for participating. The interview guide was developed after pertinent informant interviews were held with Liberians and Ghanaians to understand the dietary practices among Liberians and Ghanaians. The guide consisted of 2 separate sets of questions for Liberian refugees and Ghanaians (Table 1).

Data Analyses

Audio recordings were transcribed; if in Twi, they were translated first by the Ghanaian Buduburam nutrition coordinator (AS). Approximately 10 transcripts were independently read and coded initially by 3 of the authors (JM, AHF, and RPE) to standardize coding of salient domains, themes, and subthemes from the group as a whole. Two of the coders were experienced mixed-methods nutrition researchers (AHF and RPE) trained in conducting qualitative analyses; they trained the third researcher (JM). After reviewing the first 10 transcripts, JM, AHF, and RPE met to reach consensus on the emerging domains, themes, and subthemes. Then, they independently read and coded the remaining transcripts, during which time they met through 6 face-to-face sessions to standardize and finalize coding of the domains, themes, and subthemes against each other for the remaining transcripts. Saturation was reached when no new domains, themes, or subthemes emerged from the interviews, which occurred after approximately 75% of interviews had been coded. The majority of domains, themes, and subthemes were agreed upon among JM, AHF, and RPE; convergence was reached through a consensus process when the authors were not in agreement. The authors reached consensus regarding (1) a coding scheme; (2) the main domains, themes, and subthemes; (3) the quotations best illustrating each theme and subtheme; and (4) the conceptual model representing the findings (Supplementary Data). ATLAS.ti (version 7.5.10, Scientific Software Development GmbH, Berlin, Germany; 2015) was used to finalize coding and extract

quotations. The analysis was performed in this order, with the conceptual model finalized by JM, AHF, and RPE via a virtual meeting.

RESULTS

Participant Characteristics

Household size was the same between Liberians and Ghanaians; yet, those living in Liberian HH tended to be older than those in Ghanaian HH (median age, 37 vs 33 y, respectively) (Table 2). All Liberians interviewed lived in Buduburam, whereas Ghanaians were nearly equally split among Buduburam, Awutu, and a rural village. More Ghanaians than Liberians were married, and nearly twice as many Liberians as Ghanaians were widowed. Ghanaians in Buduburam had lived there longer than had Liberians. More than half of Liberians and Ghanaians had some schooling (57% and 54%, respectively), although Liberians had attended for longer. Unemployment was much higher among Liberians than Ghanaians (57% and 15%, respectively). All employed Liberians were self-employed, whereas some Ghanaians were employed by others. All Liberians were born in Liberia and all Ghanaians were born in Ghana. The only common language between the 2 groups was English.

Factors Influencing Dietary Practices

Seven domains emerged, forming direct and indirect pathways influencing dietary practices among Liberian refugees and Ghanaians: (1) social support, (2) food availability, (3) nutrition knowledge, (4) cultural and religious food beliefs, (5) food access, (6) food preparation, and (7) national identity.

Social support. Social support consisted of governmental, nongovernmental, and familial support. Several Ghanaians expressed the sentiment that Liberians were being well-supported by government or nongovernmental organizations, whereas Liberians explained that they were supported primarily by family. One Ghanaian mother noted:

I see the Liberians are really enjoying. Looking at how they live, [it] is better than we do here in the village. Liberians receive corn and other foods that the government is giving them. But we, we don't receive anything. For instance, they [the government] give them rice. [Mother is told Liberians receive corn, not rice]. Okay, even if it is corn ... if we were also given corn, we would make very good use of it. (HH 5)

In reality, minimal food support was being provided only to vulnerable Liberian populations, which included pregnant women, malnourished children, and the elderly.¹⁷

Liberian women expressed strong dependence on family, especially husbands or mothers, for assistance with shelter and acquiring food, which subsequently shaped dietary practices. Yet, although expressed by only a few women, losing support through changes in family structure had a negative impact on food access among both Liberians and Ghanaians:

When my husband was alive, every month he gave me money for the housekeeping and then I could even use those monies to help in my trade and then the product that came, I used that to cook in the house. But now it is very difficult to get food because we have to rely on this small trading I have and am doing ... times are difficult more than when my husband was around. (Ghanaian grandmother, HH 10)

Food availability. Food availability was influenced by farming, land availability and ownership, the quality of the land, and the market. Among Liberians, farming had an important role both as a tradition and as a means of procuring food. Although a few Liberian women were able to farm in Ghana through their own plots or different organization gardens, for most women, the move to Liberia marked a transition in the sources through which food was available to them. Some Liberian women

Table 1. In-Depth Interview Questions**Liberian refugees**

1. Where in Liberia are you from? Is it a rural or an urban area?
2. Can you tell me at what age you first left Liberia?
3. Can you tell me where you lived before coming to Ghana? (Probe for age when left and arrived in each place.)
4. When did you first come to Ghana? How old were you?
5. How did you used to get food in Liberia (farming or gardening, buying in market, etc)?
6. What dishes did you used to prepare in Liberia?
7. In thinking back to when you lived in Liberia, on a normal day, could you tell me what other foods (ie, tubers, greens, meats, fruit, etc) you ate in Liberia?
Probe: Please ask participants to describe what the foods looked like. (See if we can find pictures to show participants.)
8. When you first arrived in Ghana, could you remember what foods you ate? (What foods were available for you to eat?) (Liberian food vs Ghanaian food)
9. Where those foods different from what you used to eat back in Liberia?
10. When you arrived in Ghana, how did you get foods to eat? *Did you buy them, did you prepare them, or were they given to you?*
11. In the beginning, when you arrived in Ghana, were you able to find in the market all of what you needed for your traditional Liberian diet? Has it changed? How is it now?
12. For any foods or dishes that you prepare differently here from what you did in Liberia, what is the reason for preparing the foods or dishes differently?
13. On a normal day, can you tell me what foods you eat now?
14. Do you like Ghanaian foods? Which Ghanaian foods do you eat?
15. How does getting food in Ghana differ from when you were in Liberia?
16. If you were in Liberia, what foods would you feed to your children/grandchildren?
17. Is it different from what you feed to them here?
18. Are there some foods you feel are good for your health and the health of your family (foods that help you not to be sick)?
19. If so, what are they and why do you feel they are good foods?
20. Are there some foods you think are not good for your health and the health of your family (foods that might cause you or your family to be sick)?
21. If so, what are they and why do you feel they are not good foods for health?
22. Do you feel food is healthier in Ghana or Liberia? Why?
23. Do you think younger people now eat differently from the way you ate in your youth? If so, how?
24. In the past 6 months, have you changed the way you eat? If so, why and how?
25. How do you think the way Liberians eat differs from the way Ghanaians eat?

Ghanaians

1. On a normal day, can you tell me what foods do you normally eat?
2. How do you get food (farming, buying, some give it to them, etc)?
3. What foods do you feed to your children/grandchildren? Are the foods that you give to your children different from what you or other adults eat in your home?
4. Are there any foods you eat now that you did not used to eat before the Liberians arrived in Buduburam? If so, which foods are those? Do you eat some Liberian food?
5. Are there some foods you feel are good for your health and the health of your family (foods that help you not to be sick)?
6. If so, what are they and why do you feel they are good foods?
7. Are there some foods you think are not good for your health and the health of your family (foods that might cause you or your family to be sick)?
8. If so, what are they and why do you feel they are not good foods for health?
9. *(For adults and elderly people only)* Do you think younger people eat differently from the way you ate in your youth? If so, how?
10. In the past 6 months, have you changed the way you eat? If so, why and how?
11. How do you think the way Ghanaians eat differs from the way Liberians eat?
12. Are there other cultural differences that you see between Ghanaians and Liberians?

were able to continue the practice of farming whereas others could not depend on the availability and quality of land for farming:

The man took the land, the Ghana man took the land and said it is for him. He took the place

and said we should move from . . . He came and he said the place is for him. (Liberian grandmother, HH 9)

Interviews revealed that farming was Ghanaians' primary means of obtaining food.

Land availability, ownership, and quality also affected Ghanaian women's ability to farm. For some Ghanaians, the places that used to be available to farm were not available to them because of development or alternative ownership. Among those who farmed, land

Table 2. Characteristics of Ghanaian Residents and Liberian Refugees Living in Ghana (n = 27)

Demographic	Ghanaian (n = 13)	Liberian (n = 14)
Household size, people	8	8
Age, y (total sample) ^a	34	37
Age, y (grandmother)	53	50
Age, y (mother)	27	31
Age, y (granddaughter)	22	19
Highest level of education, mean y ^b	5	9.5
Participant		
Grandmother	6 (46)	6 (43)
Mother	6 (46)	6 (43)
Granddaughter	1 (8)	2 (14)
Location		
Buduburam	4 (31)	14 (100)
Rural village	4 (31)	0
Awutu	5 (39)	0
Marital status		
Single	2 (15)	6 (43)
Married	8 (62)	3 (21)
Widowed	2 (15)	4 (29)
Partner (not living together)	0	1 (7)
Unknown	1 (8)	0
Years in Ghana ^c	34	10
Years in Buduburam ^b	19	10
Education		
Attended school	7 (54)	8 (57)
Did not attend school	6 (46)	5 (36)
Unknown	0	1 (7)
Highest level of education ^d		
Primary school (<=6 y)	5 (71)	1 (13)
Junior secondary/high school (<=9 y)	0	3 (38)
Some senior secondary school (<=12 y)	2 (29)	3 (38)
≥12 y	0	1 (13)
Employment status		
Not employed	2 (15)	8 (57)
Self-employed	9 (69)	6 (43)
Employed	2 (15)	0
Born in Liberia	0	14 (100)
Born in Ghana	13 (100)	0
Language(s) spoken ^e		
English	2 (15)	10 (71)
Any Liberian dialect	0	11 (79)
Any Ghanaian dialect	13 (100)	0

^aMissing 1 mother and 2 grandmothers; ^bAmong those who lived there; ^cMissing 2 values; ^dAmong those who attended school; ^eIncludes those who spoke > 1 language (numbers and percentages may not sum).

Notes: Values are medians for continuous variables and n (%) for categorical variables. Numbers may not sum to total owing to missing data and percentages may not sum to 100% owing to rounding. Data were collected through a semi-structured interview guide and analyzed qualitatively.

quality limited the food that was able to be grown:

Conditions here are very tough, so we are not able to get a variety of food. The only foods that grow well here are cassava and corn, and so therefore, we only eat cassava and corn all the time. (Ghanaian grandmother, HH 5)

For Ghanaian women, the market was a source of food when their food ran out and it was a source of income from selling their goods. A Ghanaian grandmother explained,

Fortunately for us, when the money was running out, then the new products, our new farm, we harvested our new farm products.

So, we were able to, uhh, uh, so we didn't run so much out of food or to stop eating. (HH 6)

This perspective was not shared by the Liberian women, who relied on the market as their main source of food despite the expense. Neither Ghanaian nor Liberian granddaughters expressed concerns regarding

food availability, but Ghanaian granddaughters noted that food access was limited because of cost.

Nutrition knowledge. Nutrition knowledge refers to information gained from health providers in the camp or clinics, perception of the health value of foods, and consideration of nutrition when selecting foods. Providers within health clinics were a source of nutrition information for both Ghanaian and Liberian women:

They [people at the clinic] told me that I should, to get more blood, I should eat food that will give blood, like potato greens, the palm nut soup, the beans, and that I should also drink bissa [a home-made drink made with hibiscus flowers] with low sugar in it. (Liberian mother, HH 3)

Cultural beliefs informed nutrition knowledge, but this information was not always accurate. For example, one Liberian mother noted,

They [Ghanaians] pepper the child. ... They put it in the nose ... and they put it [pepper] in the buttocks. ... It [the pepper] goes straight to the brain. ... They make the brain hot. ... It can make baby strong. (HH 4)

Ghanaian women generally understood that certain foods had more inherent nutritional value than others. Ghanaian women identified healthy and nonhealthy foods as well as those that promoted growth:

Foods like beans, beans is very good and they can promote your growth. Beans, beans, and my people locally always call it ase-dua [a bean stew]. (Ghanaian grandmother, HH 10)

Conversely, Liberian women understood the overall benefit of food, yet did not know what specifically constituted healthy food: "Food is nothing, but food. It's good for your body" (Liberian grandmother, HH 9).

Among Liberians and Ghanaians, many women considered healthy

food to be any food that was available and accessible:

The things we eat we do not know if they are healthy or not. When serving our foods, we eat one kind of food and that is what makes us survive, so we believe they are healthy foods. Like the cassava and the corn, the kontomire and tomato soup and the pepper, palm nut soup, and groundnut soup. (Ghanaian mother, HH 6)

Whereas Ghanaian and Liberian women believed that all available and accessible food was healthy, they thought that the nutritional content of foods and dishes changed depending on how they were processed or prepared:

All the rest of the food, all depends the way you prepare it, the way in which you prepare it and the ingredients that you put in it. They are all healthy food. (Liberian mother, HH 3)

Cultural and religious food beliefs. There were many cultural and religious food beliefs embraced by Buduburam residents; 2 foods with strong ties to the Liberian and Ghanaian communities will be highlighted in this article: rice and spicy/hot peppers. Strong traditional beliefs about rice and spicy/hot peppers were linked to beliefs regarding child health and development. Liberians and Ghanaians generally believed that giving rice to babies would impair their ability to walk. When prepared in a certain way, however, both Liberians and Ghanaians believed that rice was good for the health and development of young children:

Rice is very good when, especially for small children, when you make it softer, you add well-prepared stew to it and then feed the children, it will make them grow well. (Ghanaian mother, HH 8)

Liberians and Ghanaians held differing food beliefs about the benefits of pepper for children. Liberians believed that pepper would make a baby strong whereas

Ghanaians felt this was an outdated belief. When asked about the cultural belief that pepper would make a baby strong, a Ghanaian grandmother explained,

I think is with the Liberians. Ghanaians, I think, don't do that, but I have seen Liberians here on camp do that to make their children strong. (Ghanaian grandmother, HH 11)

Despite strong beliefs about the health benefits of certain foods, some Liberian women turned to eating foods they believed might cause disease, to cope with food insecurity. One Liberian granddaughter explained that she would eat mango when she was hungry, despite her belief that mangoes promoted malaria. She said, "I eat them [mangoes] sometimes. ... I eat [mangoes] when I'm hungry" (HH 1).

Liberians and Ghanaians held strong religious beliefs that God would provide them with food or the money to buy food, thereby increasing their access to food: "We [were] eating ... for the last 6 months God was providing it" (Liberian mother, HH 3). Similarly, a Ghanaian mother stated,

It is God who is taking care of us, so generally, when all our food is finished, we get money also to buy. (HH5)

Food access. Liberian and Ghanaian women experienced cultural, physical, and economic barriers to food, which led to food insecurity and resultant coping strategies. Cultural barriers were mainly felt by Liberian mothers and grandmothers who expressed limited access to traditional foods:

If I want to cook dry meat or I want to cook fresh meat, I can't get it. If I want to cook any good fish like tuna fish, the snapper, let's say the cassava fish with rice, I can't get it here. (Liberian mother, HH 3)

Conversely, Liberian granddaughters felt that the foods they wanted were accessible, which suggested that their diets were influenced by

food availability in the settlement. Among some Ghanaians, the food they sold changed with the arrival of the Liberians, which indicated the influence Liberians had on the market. Some Ghanaians sold traditional Liberian foods at the market to meet demand from Liberians:

With the cassava leaves and the potato leaves, you know the Ghanaians don't eat them, so they [Liberians] were going to the Ghanaian farms to pay their farm owners for, um, cassava leaves or potato leaves. (Ghanaian mother, HH 8)

Whereas physical access, including transportation, was not identified as an important barrier to food access for either Liberians or Ghanaians, it had a role in determining when and how food was obtained. Liberians typically visited the market within Buduburam, whereas Ghanaians would also visit those outside the settlement. One Ghanaian grandmother explained that she needed to walk to the market owing to poor-quality roads:

Our road is no good; the vehicles do not want to plow our street. So, the only thing we have to do to get access to the market is to walk. (HH 5)

Although these sentiments were not echoed by other Ghanaians or Liberians, there may have been other women struggling physically to access food who did not voice these views.

Liberians and Ghanaians felt that food in the settlement was expensive, and Liberian women expressed that the food in Buduburam cost more than food in Liberia and was a barrier to cooking the traditional Liberian foods they preferred:

When we used to cook in Liberia, the food was all over, but here, you will miss your cooking, because everything here is expensive. (Liberian mother, HH 12)

High food prices drove both groups to change their food preparation and diet. When money was tight, Liberians would eat rice by

itself, instead of with stew or soup, as is traditional, to ensure that they ate. Affordability of staples such as rice and pepper limited individuals' ability to prepare food how they preferred:

Sometimes I don't have money, I eat rice, dry rice [meaning rice with no soup or stew]. . . You cook the rice and then you put, the, the red oil, no soup. (Liberian mother, HH 4)

A Ghanaian mother described how the cost of food limited what she and her daughter ate:

Because the price of rice has gone up, we don't eat [rice] at all. My daughter liked rice so much that it was the only food she was eating, but now things are very expensive. The rice is very expensive so we, we do scarcely eat it. (HH 6)

Both Liberians and Ghanaians experienced food insecurity, but Ghanaians experienced less severe food insecurity compared with Liberians. All Liberian women reported not having money to purchase food at certain times:

For us, any food we can get we will eat. The issue is that we do not have food, so any food we have available we will eat. (Liberian grandmother, HH 5)

Liberians and Ghanaians employed coping strategies to manage food insecurity, including reducing the variety of food eaten, substituting more economical food, and reducing the quantity of food or the meal frequency. Ghanaian women purchased more economical foods when they were experiencing food insecurity and Liberian women purchased less expensive staple foods instead of rice to manage food insecurity:

I will buy cassava because I know the rice . . . if the money is not sufficient for rice . . . rice is dear, cassava is cheaper, so that's cassava I will buy and be managing it small, small, because the money is not there. (Liberian grandmother, HH 12)

Liberians and Ghanaians also reduced the quantity of food for adults in their HH or skipped meals themselves to manage food insecurity. In some instances, adults were unable to buffer their children against food insecurity, especially when their HH was experiencing severe food insecurity. This practice was evident only among Liberian women. One Liberian mother reported feeding her baby water for a meal if nothing else was available: "If I have it [breakfast and supper], I give it [to the baby], but if I don't have it, she will drink water" (HH 9).

Food preparation. Ingredients, textures, and knowledge of the other culture's foods influenced food preparation between Liberians and Ghanaians. Liberians primarily used rice as the main staple for food preparation whereas Ghanaians preferred corn. Liberians also preferred to season their food with pepper whereas Ghanaians opted for plainer food:

I think Liberians cook [with] a lot of pepper and so their food is always having lots and lots of pepper, and that is why I am not able to consume, so that is it. (Ghanaian grandmother, HH 11)

The texture of the foods differed between ethnic groups; Ghanaians tended to prepare soups with more broth and lighter texture whereas Liberians prepared denser, thicker soups:

I think the difference is that the Ghanaian palm nut soup is light and the Liberian palm nut soup is very thick. . . . Our palm soup, we use it for banku [a paste-like food made from fermented cassava dough and corn dough] or fufu [a dough-like food often made from cassava or yams] or something else, but with them [Liberians], their palm soup is eaten with rice, so they make it very, very thick to look like a sauce to be eaten with rice. (Ghanaian grandmother, HH 11)

Among Liberians, understanding how Ghanaians prepared their food fostered the adoption of Ghanaian

food practices. Traditional Ghanaian foods such as *banku* and *kenkey* (a fermented cornmeal dough) were new to many Liberians, yet knowing how they were prepared increased the likelihood that Liberians would make and subsequently consume them. Many Liberian women felt comfortable preparing Ghanaian food because of their observations of Ghanaian cooking:

Everybody know how to eat the Ghana food because we stay here now. We see how they prepare it and how they eat it, so when I prepare it, they can also join me to eat. (Liberian mother, HH 3)

Likewise, women who did not understand how the other culture cooked their foods had a limited ability to prepare these foods themselves.

National identity. For both Liberians and Ghanaians, national identity (the allegiance to one's culture and traditions) was defined by cultural views and attitudes toward food, the cultural exchange of foods, and food preferences. The majority of both Liberian and Ghanaian women felt strongly that certain foods were inherent in their culture. Some Ghanaians identified with their nationality through the exclusion of Liberian staples:

The Liberian foods is most often rice, rice, rice. So, they don't like to eat fufu, they don't like to eat, it's always rice and changing the sauce. (Ghanaian grandmother, HH 8)

Liberians' sentiments about traditional Ghanaian foods were not as negative as Ghanaians' sentiments were about Liberian foods, which may signify that Liberians were more accepting of traditional Ghanaian foods. Certain foods, such as rice, were vital to Liberians' national identity:

The Ghanaians can't eat rice, but we love to eat rice. ... Even if my gut is full, I will still eat rice. (Liberian mother, HH 1)

Many Liberians and Ghanaians experienced greater dietary diversity

over time through the cultural exchange of foods. Interacting with each other's culture through friendships, living in close proximity, and sharing common spiritual beliefs promoted food exchange between Liberians and Ghanaians:

I have a Liberian friend. ... Once in a while we'll visit each other. She's this woman here. She's, the woman here is a Liberian, she's my friend and we sell all, we all sell here in the market. ... We share foods together. Most often, it's rice that she, it's often rice that she shares with me. (Ghanaian mother, HH 8)

Similarly, a Liberian grandmother (HH 9) explained how living in close proximity to Ghanaians promoted the consumption of Ghanaian foods:

Where we are living, there is so [many] Ghanaians, we are living among Ghanaians. They can cook it and then we can see it. So, from there ourselves we started practicing how to cook corn [which is not a Liberian staple food] and how to mix it with food.

Sharing spiritual beliefs fostered a sense of community, leading to an exchange of cultural foods. Despite their different diets, a Ghanaian grandmother felt that she could have a meal with Liberians because of common religious values:

They [Liberians] were our counterpart [from the Seventh Day Adventist church] on the refugee camp. ... I could eat with them and they could also eat with me because we share common values, our religious values. (HH 8)

Across generations, Liberians and Ghanaians who had little or no interaction with each other experienced little or no cultural food exchange. A Liberian mother explained,

I really don't know [if there are any differences between the way Ghanaians eat and the way Liberians eat] because I don't really associate with the Ghanaians too much and I rarely see them eat. (HH 2)

Food preferences influenced the way Ghanaians identified with their culture and subsequently their acceptance of exchanging cultural foods. Ghanaian children and grandchildren influenced the diets of the older generation through their own food preferences and acceptance of new foods. Children exposed to Liberian foods at school brought those preferences home and encouraged adults in the HH to be more open to Liberian food, subsequently integrating Liberian food into their overall diet:

We eat other foods of the Liberians like the cassava leaves, the eggplant leaves, and the others. ... It's my children who have been eating the Liberian foods more, much more than anybody else. Much more than anybody in the household. So, they are able to buy and eat, but for us, it's the potato leaves that we like so much in the house. (Ghanaian grandmother, HH 10)

Other Ghanaians did not accept the shift in food preferences among their children and grandchildren and were unwilling to incorporate Liberian food into their diet. For these women, eating Liberian food was offensive to their cultural identity:

[Liberian food] is not something we have eating before and it's just because he went to school and he's eating from there which would change our meal plan. ... We think it's bad food. (Ghanaian mother, HH 5)

Conceptual Diagram

The conceptual diagram that emerged from the findings shows the complex relationships of the 7 domains (Figure) as they influenced dietary practices among Liberian refugees and Ghanaians. First, HH with greater social support experienced more food availability than did those with limited support. Second, Liberians and Ghanaians felt that cultural foods were available, yet they were inaccessible because of cost. In turn, food access influenced dietary practices both directly and indirectly. Directly, those

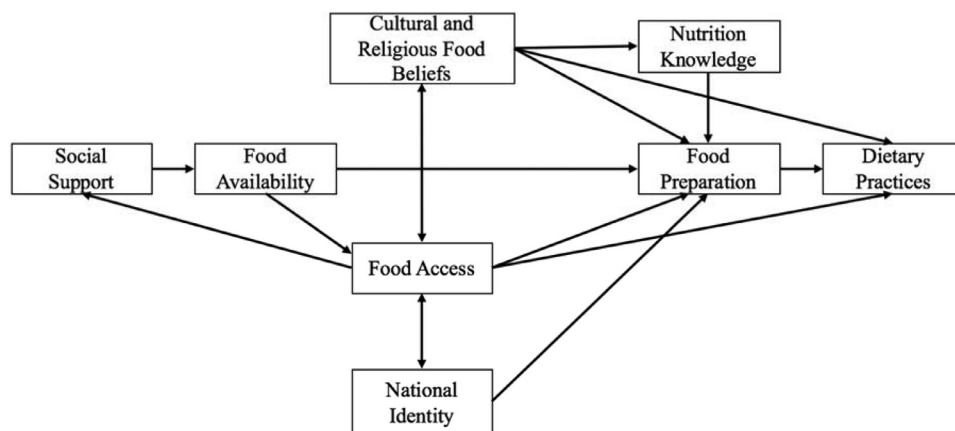


Figure. Conceptual framework describing the relations among factors contributing to dietary patterns among Liberians and Ghanaians.

who lacked access to foods changed their diets to consume accessible foods. Indirectly, food access was linked to dietary practices through 2 different pathways: (1) food preparation and (2) cultural and religious food beliefs. In the first pathway, limited food access affected how food was prepared, subsequently influencing dietary practices. In the second pathway, some Liberian women coped with food insecurity by eating foods they believed might cause disease. Cultural and religious food beliefs also influenced food preparation, subsequently influencing dietary practices. For example, Liberians and Ghanaians held strong cultural beliefs about the role of rice and pepper in their children's development, which dictated how they prepared these foods for their children. National identity influenced both food preparation and access. Most Liberian and Ghanaian women felt that certain foods represented their culture, and this view shaped how they prepared foods. National identity and food access had a bidirectional relationship; national identity determined, in part, the foods women felt were culturally accessible. In turn, the foods women could access (eg, through the market) shaped their views toward national identity. Nutrition knowledge influenced cultural and religious food beliefs and food preparation independently. Finally, food access was linked to social support; HH experiencing food insecurity relied on their social networks for support as a coping strategy.

DISCUSSION

The conceptual model that emerged from the study findings depicts the interplay of 7 important factors driving dietary practices among resettled refugees and host country residents living within and near a protracted refugee settlement in Ghana. These findings support evidence suggesting that dietary practices among resettled refugees are the result of a complex web of factors. These findings also add uniquely to the literature by documenting new factors and identifying the relation between factors that influence dietary practices not only among resettled refugees but also among host country residents most affected by refugees over time.

Social and cultural factors such as food access and national identity influence dietary practices of refugees and host country residents in protracted situations.

As depicted in the conceptual model, having limited access to food generated social support, which subsequently increased food availability among Liberian and Ghanaians. This suggested pathway is consistent with 2 studies of Liberian refugees in the US that found that those who reported hunger or child hunger in their HH were more likely to

consume meals at friends' homes, thus increasing their food availability in times of need.^{5,18}

In this study, knowledge about the preparation of Ghanaian foods influenced Ghanaian food preparation among Liberians. In addition, the food that was available drove food preparation. Other studies also suggested that food preparation is driven by these 2 factors: knowledge and food availability. In a US-based study conducted among Mexican, Somali, Cambodian, and Sudanese refugees and immigrants, healthy eating was associated with the availability of healthy foods as well as women's knowledge about how to prepare them.¹⁹

Among Liberian women, food acquisition methods shifted from farming in Liberia to purchasing foods in markets in Ghana, subsequently influencing food access. Whereas most Liberians and Ghanaians felt that culturally relevant foods were available, they were often prohibitively expensive, which limited access. These findings are supported by prior research documenting that cost is a barrier to accessing culturally available foods among resettled refugees.^{5,20}

Food access indirectly and independently influenced dietary practices through (1) food preparation and (2) cultural and religious food beliefs. Limited food access influenced food preparation, because women were able to prepare only what they could purchase. Prior research suggested that traditional foods might be more expensive in the host country, but that refugees would pay for them

because they tended to have limited knowledge of other cultures' food preparation.²¹ In terms of cultural beliefs, women experiencing food insecurity ate foods they believed might not be healthy or could cause disease, as a coping strategy. Cultural and religious food beliefs, in turn, influenced food access, because women believed that God provided them with access to food when needed. This is consistent with findings from other qualitative studies suggesting that strong religious beliefs are linked with the perception that the women have received or provided tangible assets, such as food, that may not have been acquired otherwise.²²

Food access and national identity had a bidirectional relationship. Despite their food insecurity, national identity was extremely important to Liberians; they described a strong opposition to giving up their traditional food preferences, a strong component of national identity. Rice was a central food to Liberians and they would make every effort to access it and incorporate it into their diet, including eating it by itself if they could not afford to cook it in a soup or stew. Patil et al⁵ described how socioeconomic factors, including food insecurity, were directly connected to diet and ethnocultural norms such as social integration. Findings from the current study differed in that national identity was not found to mediate the relationship between food insecurity and diet; rather, national identity directly influenced food access, which included food insecurity. Further, Patil et al found a 1-way relationship between ethnocultural norms and socioeconomic status, whereas the current authors found a bidirectional relationship between national identity and food insecurity (ie, food access).

National identity was expressed through cultural food attitudes, cultural food exchange, and food preferences. Ghanaians separated foods by culture, indicating which were theirs (eg, *kenkey*) and which were Liberian staples (eg, rice and *kitteley*). Ghanaians expressed less acceptance of traditional Liberian

foods than did Liberians of traditional Ghanaian foods, which perhaps suggested greater acceptance by Liberians toward Ghanaian foods owing to refugee status and severe food insecurity. Liberians who were familiar with Ghanaians were more likely to engage in cultural food exchange and prepare Ghanaian foods. In a US-based study,¹⁸ the majority of Liberians cooked only Liberian food because they did not know recipes from other cultures, which suggested that understanding another's culture is crucial for cultural food exchange and the preparation of food from other cultures.

This study had some limitations. Interviews and Ghanaian translations were conducted by the nutrition coordinator for the settlement, which had the potential to introduce bias. This was minimized as much as possible by having the primary investigator and co-primary investigator onsite for interviews, and Ghanaian interviews were verbally interpreted to enhance understanding. Because of the unique setting and circumstances of Liberians and Ghanaians in Buduburam Refugee Settlement, this study may not be generalizable to all refugee settlements, especially those not within a developing country setting. Yet this setting provided a unique opportunity to understand how immigrant and host communities' dietary practices change when their cultures intersect. Further work is needed to determine how food practices in other refugee settlements compare. In addition, this convenience sample may not represent all nutrition-related practices of women living in Buduburam. However, the selection criteria ensured that a diverse group of Ghanaian and Liberian women of multiple generations was included. Based on the criteria and thematic saturation, the authors believe these findings represent the situation in the settlement at the time of the study. These interviews may provide a more complete understanding of dietary behaviors among Liberian and Ghanaian inhabitants of Buduburam Refugee Settlement than previously analyzed quantitative data alone.

IMPLICATIONS FOR RESEARCH AND PRACTICE

The close proximity in which Liberians and Ghanaians lived within and around Buduburam Refugee Settlement presented a unique opportunity to gain deep insight into how exposure to a host country affects dietary beliefs and practices among refugees, and vice versa. In addition, the inclusion of 2–3 generations of women in each HH provided insights into how generational differences may influence these factors. These findings have important implications for public health, because they can provide relief organizations and refugee agencies with in-depth knowledge of social, cultural, and generational factors influencing dietary beliefs and practices of refugees and host country residents in protracted situations, especially when exchanges occur within developing countries. Indeed, these findings

Findings demonstrate the need for well-planned, culturally sensitive programs that target both the refugee and host communities.

are already currently driving a new project within and around Buduburam to develop culturally appropriate responsive feeding guidance for residents. Furthermore, these findings demonstrate the need for well-planned and designed, culturally sensitive programs that (1) address the specific identified factors including nutrition education, food availability, and food access; and (2) target both the refugee and host communities. This is especially important in the context of nutrition programming within refugee settings to ensure cultural appropriateness and acceptance of implemented interventions.

ACKNOWLEDGMENTS

Funding for this study was received from the West African Research Association through a postdoctoral fellowship to Dr Amber Hromi-Fiedler. The authors would also like to

extend their deepest gratitude to the Liberian and Ghanaian interviewers who helped implement this study, as well as to the Liberians and Ghanaians who participated in this study.

SUPPLEMENTARY DATA

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jneb.2018.09.007>.

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