

## **Food Dessert among the Urban Poor: Examining the Local Food Environment in Ga-Mashie, Accra**

### **ABSTRACT**

The environment in which people live influences health behaviours and outcomes including smoking, obesity and non-communicable diseases. Among the poor, the food environment has been found to be associated with negative health outcomes including poor diets, overweight and obesity. This study examines the local food environment in Ga-Mashie, an urban poor setting in Accra, Ghana. Data on the point locations of out-of-home cooked foods, convenience stores and fruit and vegetable stands was collected using global position system technology. The results suggest the existence of a food desert in the local food environment which is mostly obesogenic in nature, characterised by an abundance of out-of-home cooked foods, convenience stores and limited fresh food options. The obesogenic nature of the local food environment poses a potential risk for obesity to residents of the study community. Further research on the influence of the food environment on obesity among the study population is recommended.

**Key words:** Accra-Ghana, urban poor, food environment, obesogenic

## **INTRODUCTION**

The ongoing nutritional transition in many developing countries coupled with current global trade policies has resulted in the abundance of cheap energy dense and fatty foods in these countries, where traditional diets are being replaced with western ones<sup>1-2</sup>. While such high caloric foods are more common in urban than in rural areas, recent studies show that dietary patterns vary across communities and living in a deprived area is associated with the consumption of a poor diet<sup>3</sup>. The local food environment influences individual dietary behaviors through access to readymade foods, out-of-home food consumption and access to foods from grocery stores and supermarkets<sup>3</sup>.

The literature on community effects indicate that the conditions under which the urban poor live and the environment in which they find themselves constitute a major risk for obesity and NCDs among this group<sup>4</sup>. Globalization and urbanization have further compounded the problem of obesity for the urban poor, giving them access to cheap, energy-dense foods including refined carbohydrates, frozen meat products and saturated fats and oils<sup>5</sup>. Such foods are generally more affordable for the urban poor. However, these foods have high caloric value and low nutritional content. The urban poor are thus at particular risk of depending on high caloric foods<sup>6</sup> which increases their risk of obesity.

In many developing countries, particularly those in sub-Saharan Africa, research indicates that the prevalence of obesity is rising<sup>7</sup>. In Ghana, there have been several studies that have looked at the problem of obesity from a medical, lifestyle or a socio-demographic perspective<sup>8-10</sup>. Very few studies have researched on the potential contribution of the environment to the problem of obesity in Ghana. Maxwell et al<sup>11</sup> report that in urban centers in Accra, about 32% of the food budget is spent on prepared foods and the poor spend about 40% of their food budget on street foods. Given this food expenditure pattern among Accra's urban poor, it is important to examine the local food environment in urban poor communities and its implication for health outcomes including nutritional status, overweight, obesity and non-communicable diseases. This paper focuses on examining the local food environment as a necessary first step in understanding the environment obesity relationship in an urban poor Ghanaian context.

## **METHODOLOGY**

### **Study Settings**

This study was conducted in Ga-Mashie, an indigenous urban poor, and predominantly Ga community in Accra, Ghana. Also known as Old Accra, Ga-Mashie is among the oldest communities in

Accra and includes James Town and Ussher Town. This community was selected as a representation of an urban poor community in Accra<sup>12</sup>. The Ga-Mashie community also has a high prevalence of obesity of about 17%. Ga-Mashie is currently ranked as one of the most densely populated communities in Accra<sup>13</sup> with a population of 35,757 (James Town: 13,617, Ussher Town: 22,140) as of 2000<sup>14-15</sup> occupying about a 100 hectares of land. The community faces major developmental and socio-economic challenges, including insufficient and inadequate housing, overcrowding and poor sanitation conditions.

### Study Design

For the purposes of easy canvassing and enumeration in population census and other surveys, communities in Ghana are divided into smaller units called Enumeration Areas (EAs). Twenty four EAs were randomly selected out of the 72 in the Ga-Mashie community. The data for this paper was gathered using global positioning system (GPS) technology. The boundaries of the selected EAs were digitized and geo-referenced. Point locations of out-of-home cooked food places, convenience stores and fruits and vegetable sales points in and around the selected EAs were geocoded. Information on the characteristics of the foods including the type of food and the usual time of sale of the food was also collected. Four field personnel were trained to collect these data collection and data collection was done in June 2013. Ethical approval for the study was granted by the Institutional Review Board of the Noguchi Medical Institute for Medical Research at the University of Ghana.

### Variable definitions

**Out-of-home cooked food (Street foods):** This refers to already cooked ready to eat food that is being sold by a food vendor. It includes foods such as *kenkey*<sup>1</sup> and fried fish, *banku*<sup>2</sup> and soup/pepper/stew/fish, *fufu*<sup>3</sup> and soup, *tuo zaafi*<sup>4</sup>, fried rice<sup>5</sup>, plain rice<sup>6</sup>, *jollof rice*<sup>7</sup> with chicken/fish/meat, fried eggs and bread, *koko*<sup>8</sup>, *tea*<sup>9</sup> etc.

**Convenience stores:** This represents stores that sell a variety of processed food items including cooking oil, canned or tinned fish, carbonated drinks, biscuit, milk, sugar, rice, gari etc. These stores typically do not sell perishable goods such as fresh fruits and vegetables.

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<sup>1</sup> Cooked fermented corn dough wrapped in corn leaves

<sup>2</sup> Fermented corn dough and cassava dough cooked together into a smooth whitish solid paste

<sup>3</sup> Pounded cassava and plantain

<sup>4</sup> Maize flour cooked in a semi solid paste

<sup>5</sup> Boiled rice stir fried with vegetables, sausage and eggs

<sup>6</sup> Boiled plain rice

<sup>7</sup> Rice cooked in tomato sauce

<sup>8</sup> Maize porridge

<sup>9</sup> Hot beverage made from chocolate powder or tea

**Fruits and vegetables:** These denote fresh fruits and vegetables that are being sold by a vendor.

### Methods of analysis

Preliminary analysis of the food point data was done in Quantum GIS. The food point locations were mapped on the digitised georeferenced maps of the EAs to facilitate a visual display of the distribution of the elements of the food environment in the study area. Vector analysis was used to analyse the different layers of the food environment.

### RESULTS

The results reveal an abundance of out-of-home cooked foods and processed foods in the study community with limited fresh food options particularly for fruits and vegetables (Figure 1, Table 1). Common types of out-of-home cooked foods included foods made from polished rice including plain boiled rice, rice boiled with refined vegetable oil, fried rice and *jollof rice*. These rice dishes were sold together with chicken, meat or fish which were mostly frozen products fried with refined vegetable oil. The sauces that accompanied the rice dishes were also prepared with refined vegetable oils, spices and condiments with high salt content such as mono sodium glutamate. Another common form of rice dish in the study area and Ghana as a whole is *waakye* which is made by cooking rice and beans together. *Waakye* is also most often cooked with polished rice, but, a few of those encountered were made from local unpolished whole grain rice.

The results revealed the availability of certain food types at certain times in the day (Table 2). In all the EAs, energy dense and or fatty foods e.g. fried pork, fried rice, instant noodles (commonly called *indomie*) and *kelewele*<sup>10</sup> were mostly sold at night. Staple foods e.g. *kenkey*, *banku*, *fufu*, *kokonte*<sup>11</sup> and *tuo zaafi* were mostly sold throughout the day starting from mid-morning through to late evening and even at night.

The results of a study conducted in Accra revealed that 30% of calories consumed by respondents were from street foods<sup>11</sup>, indicating that street foods is a key source of respondents' caloric needs. As was found in the current study, the local food environment presents more options for high caloric foods and limited options for healthy foods such as fruits and vegetables. There is the need for further research on

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<sup>10</sup> Spiced ripe plantain fried in oil and served with or without peanuts

<sup>11</sup> Cooked cassava flour made into a smooth solid paste

the influence of the local food environment on health outcomes including obesity and non-communicable diseases for residents of the study communities.

**Figure 1: Map showing point locations of out-of-home cooked foods, processed foods and fruits and vegetables in selected enumeration areas in James Town**



- Key: — Enumeration Area Boundary  
● Out-of-home cooked food  
● Convenience store  
● Fruits and vegetables

Source: Fieldwork, June 2013

**Table 1: Distribution of food point locations by enumeration area in James Town**

EA Code	Total number of food point locations		
	Out-of-home cooked foods	Convenience stores	Fruits and vegetables
023	28	12	2
017	40	20	4
004	45	16	4
020	23	16	8
010	16	11	2
009	9	8	2
013	17	7	1
008	19	9	1

Source: Fieldwork, June 2013

**Table 2: Distribution of food types and time of availability during the day in James Town**

Type of food	Morning	Afternoon	All day (mid-morning – early evening)	Late evening - Night	Total Number
Banku			✓	✓	38
Fufu		✓	✓		5
Kokonte		✓	✓		6
Tuo Zaafi		✓			1
Kenkey			✓	✓	20
Boiled rice			✓		25
Fried rice			✓	✓	4
Jollof rice			✓		6
Waakye		✓	✓		9
Fried Yam			✓	✓	10
Instant noodles				✓	17
Kelewele				✓	3
Koko	✓			✓	9
Fried Chicken			✓		24
Fried fish			✓		27
Hot Beverage	✓			✓	13
Fried egg	✓			✓	17
Bread	✓			✓	10

Source: Fieldwork, June 2013

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