Tropentag 2023
September 20-22, 2023

Conference on International Research on Food Security, Natural Resource Management and Rural Development
organised by the Leibniz Centre for Agricultural Landscape Research (ZALF), Germany in cooperation with Humboldt-Universität zu Berlin, Germany

Effect of food environment on urban dwellers' dietary diversity in southwest Nigeria

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Abstract

Unhealthy diets and bad consumption patterns are at the root of all forms of malnutrition. There is a shift from the consumption of micronutrient-rich, less dense energy foods such as vegetables and fruits to dietary intakes of micronutrient-poor, energy-dense foods. Food environment has emerged as a powerful influence on individuals' eating patterns, food choices, and diet quality. In the urban and peri-urban communities, the availability of retail outlets with wide variety of affordable and nutritious food and its accessibility plays a significant role in consumer dietary choices and adoption of a balanced diet. The study seeks to identify the true effect of food environment on urban dwellers' dietary diversity in Southwest Nigeria. Primary data on consumers and retailers characteristics was collected, given their role in the food environment, and analyzed. The expected result will reveal a positive relationship between adequate food environment and quality of household diet. The study is expected to provide insight for both public and private sector policymakers to formulate policies that will create a healthy food environment for the populace. This will inform policies aimed at (i) increasing the availability/promotion of healthy food and drinks (i.e., nutrient-rich, fresh or minimally processed foods), (ii) decreasing the availability/promotion of unhealthy food and drinks (i.e., energy-dense nutrient-poor foods, sugar-sweetened beverages), and (iii) improving the nutritional quality of food available within the food supply chain, most especially particular processed foods and out-of-home meals.

Keywords: Dietary diversity, food environment, Market-level diversity score and Household dietary diversity score

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Introduction

Food environment is made up of the food available to people within neighborhoods as individuals go about their day to day life (Herforth and Ahmed 2015). It connects people's food purchase with their food consumption (Caspi *et al* 2012). This enables and encourages people to access and choose healthy diets. Nutritional quality, safety, price, convenience, labelling and promotion of the food consumed are components of the food environment (Matita *et al*, 2021)

Food environment has emerged as a powerful influence on individuals' eating patterns, food choices, and diet quality. In the urban and peri-urban communities, the availability of retail outlets with wide variety of affordable and nutritious food and its accessibility plays a significant role in consumer dietary choices and adoption of a balanced diet (Story *et al*, 2008). At the household level, Dietary diversity is the ability of a household to obtain an adequate quality and quantity of food to meet all its members' nutritional requirements. Household dietary patterns is influenced by consumer demand, availability, affordability and accessibility (Herrero *et al* 2023).

Unhealthy diets and bad consumption patterns are at the root of all forms of malnutrition (Ruel *et al*, 2020). There is a shift from the consumption of micronutrient-rich, less dense energy foods such as vegetables and fruits to dietary intakes of micronutrient-poor, energy-dense foods (Mukoma *et al*, 2022). The objective of the study is to examine the dietary diversity of households and their food environment

Material and Methods

A preliminary study was carried out using Focus Group Discussion (FGD) in Alimosho local government area, Lagos State. The majority of the respondents were 10 married women responsible for food preparation within the household and they were selected based on their availability at the time of data collection. For the study, interviews were guided by a semi-structured interview. The audio recording was transcribed and its content was analyzed. The discussion lasted for 40 minutes. The theme discussed centered on Household dietary diversity, food environment, food consumption behaviors and habit.

Results and Discussion

The total number of FGD respondents was 10. Respondents who participated were within the age range of 26-49 years. Majority of participants were engaged in occupations such as food retailers, tailor, traders etc. All the respondents had formal education. The themes identified are: dietary diversity, food environment, food consumption behaviors and habit.

Dietary Diversity

Participants reported that almost all the food in the different food groups are available within the environment. Commonly consumed foods included starchy staple foods like: Rice, semovita, yam flour, potatoes, gaari (granulated cassava), fufu, cassava, sorghum, bread, millet, maize. The commonly available fruits are: apples, pears, oranges, bananas, pineapples, date palm watermelon pawpaw, carrots, cucumber, grape. beans, soya beans. There are different types of soups made from various vegetables. This are Okro soup, Jute leaf, Pumpkin leaf, amaranthus leaf, Egusi, Ogbono. Proteinous food from animal source foods like meat, milk, eggs, chicken and fish are also consumed. But the commonly consumed food is starch roots and grains.

> A participant reported that "*the major food we eat in our house are Eba, Semovita, Amala, Rice, bread, yam and beans. I eat my swallow with anything I see. We take it with meat or fish anytime it's available and if it's not available we eat our food without any protein addition."* (F, 40 years, FGD).

> A participant said "*I can eat rice every day, I can eat it in the morning, I can eat it as my lunch"* (F, 42 years, FGD).

Another said *"there is no day I don't eat bread and rice"* (F, 49 years, FGD).

Participants raised price and affordability as a primary barrier to the consumption of diverse variety of food within their household. This was attributed to their low purchasing power. Also, when asked about food decision within the household, the participants revealed that this is mostly made by the person in charge of cooking the household meals. This is made based on available funds for food purchase. Purchasing capacity is determined by funds available for food consumption. Food timetable is not followed

> A participant reported "*that at times if I have excess money I try to make special food for the family and if it is not available, we eat any food that is affordable with the little cash I have"* (F, 43 years, FGD).

Food consumption behavior and habit

With respect to consumption pattern, the participants reported that breakfast and dinner is often times homemade and it is consumed as a family. Lunch is sometimes skipped by most adults within the household. In situations where Lunch is consumed, food or snacks with carbonated drinks are consumed and they are usually outsourced.

> A participant said, "*if there is funds, I outsource food for my children in the afternoon and if it is not available, I buy snacks for them to eat as lunch. Sometimes they eat the leftover of their breakfast*" (F, 40 years, FGD).

> Another participant said "*we take gaari (granulated cassava) and groundnut as lunch most afternoon*" (F, 43 years, FGD).

Food environment

Most participants reported that most food consumed are purchased from the markets, retail shops and stalls within their environment. Bulk food purchases are made only on market days which opens every 5 days. This market provides different varieties of fruits, vegetables and food items. But local retailers that operates daily do not have sufficient quantity and variety of fruits and vegetables. The retail food environment doesn't provide diverse kinds food. Processed food such as noodles, semovita, and confectionaries and starchy grains such as rice etc. are the commonly available food. Similarly sugary and carbonated drinks can be easily accessed.

> A participant said, *"I have to wait for all the local street fruit vendors in the evening before I can see fruits to buy. Once I miss him passing, that is the end for the day. I have to be on the lookout again the next day". (F, 34 years, FGD).*

When asked about their perception about the food present in their environment, the participants reported that the food available is not healthy.

> *"We know that the food in our environment is are not that healthy, but it is consumed because that is the cheapest we can afford to buy (F, 47 years, FGD).*

Conclusions and Outlook

The study examined the dietary diversity of households and their food environment. It was revealed that how diverse the food consumed within a household is not only limited to the type of

food available within the food environment. Household income also plays a significant role in the purchase of food. The higher the funds available, the higher the purchasing capacity of the households. The retail food environment does not provide diverse kinds of food. As micronutrient-poor, energy-dense foods are the commonly available food when compared to micronutrient-rich, less dense energy foods such as vegetables and fruit.

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