

## Household Hunger and Coping Strategies in South-Eastern Nigeria during Corona Virus Lockdown

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## Abstract

The present study measured household hunger in South-East Nigeria amidst COVID-19 lockdown. A total of 1209 households (urban and rural locations) were sampled. Household hunger was determined using Radimer/Cornel hunger scale, while Chi-square test was done with significance of  $P < 0.05$ . Results of this study revealed 82.7% prevalence of hunger among households before Covid-19 pandemic, while during Covid-19 lockdown, hunger prevalence rose to 98.6%. It was also observed that covid-19 lockdown significantly affected food prices. The major coping strategy employed by households was relying on less expensive foods (81.14%). A genuine fear of household hunger amidst Covid-19 lockdown in south-East Nigeria was confirmed.

**Keywords:** Food insecurity, Food insufficiency, Household Hunger, Coping Strategy, COVID-19, Pandemic

## 1 Introduction

The novel coronavirus disease (COVID-19) outbreak which emerged in China late 2019 (WFP-VAM 2020), was in the month of March, 2020 declared as a pandemic by World Health Organization. Consequently, governments were beckoned to take aggressive and urgent steps towards suppressing and controlling its spread (WHO 2020). Containment of the widespread of COVID-19 pandemic in Nigeria has necessitated the initiation and implementation of diverse strategies by the various levels of government. These include mass orientation on improved personal hygiene, travel bans/restrictions, social distancing, and partial/total lockdown in many states. Some of these, especially the partial/total lockdown have impaired daily economic

activities. As the pandemic ravages, people and the food system interaction will change at an indescribable alacrity and it will assume greater importance in everyday life (UNSCN 2020). It was like a movie one third of humanity been confined at home due to COVID-19 lockdown within the first 3 months of the disease outbreak. During the lockdown, people are obligated to stay at home. They can only go out to meet the most urgent needs like buying food (Jribi et al. 2020).

Coincidentally, the lockdown and social distancing being implemented by Governments brought about the following: shut down of marketplaces, ban of vendors from selling, imposed limits on the number of shoppers and development of long queues at points of food purchase. Empty shelves unfortunately have become visible signs of the coping mechanism many are adopting (UNSCN 2020) as citizens buy off commodities in shops and supermarkets. All these may be threatening household food security and inflicting hunger on the populace. The poor and other marginalized groups with less power and resources to adapt to such unpredictable crisis events will have greater difficulty accessing enough food for survival and adequate nutrition (GFSC 2020).

The conditions of the poor are worsened with the closure of schools, as school meals and other support services are now unavailable for the poorest children (UNICEF, 2020). Thus, FAO (2020) emphasized the need for an emergency assistance to be provided as early as possible to protect livelihoods of families. Global Network Against Food Crises noted that impact of COVID-19 pandemic on livelihood, national budget, supply chain and trade will compound the problems of food security and increase effect of hunger globally (Welsh 2020)..

This situation may bring about such high magnitude of hunger emergency that has never faced the world before (Dahir 2020) and it is possible to also cause a jump in the number of individuals facing severe hunger by the end of 2020 (Anthem 2020). There is therefore apprehension everywhere. BBC (2020) reported the fears of poor people in congested neighbourhoods of Lagos Nigeria (the biggest city in Sub-Saharan Africa) when Government placed a lockdown on the city in March 2020. Many were worried about how they will cope. A concerned mother was bold to say: "It's my children I am worried about; If I am not able to go out and sell, how will they [my children] survive?". The residents were 'afraid of hunger, not the virus'. In Manila Philippines, some citizens are asking "will we die hungry under lockdown?" (Gutierrez 2020). In Kenya and other countries the catchphrase has become: "instead of coronavirus, hunger will kill us." A Global Food Crisis Looms (Dahir 2020).

It has been observed that regardless of the long-standing efforts to improve the food security situation of people world over, food deprivation and its physical consequences remains a continuing problem in resource-poor areas throughout the world (Billard et al. 2011). Is it possible that COVID-19 Lockdown situation may have a negative effect on households, food supply and hunger situation?

South East Nigeria may not be spared of this prevailing situation. The area may be impacted severely since high food insecurity rate has been previously reported among surveyed households in the area (Uzondu et al. 2017). According to Frongillo et al. (2010) hunger is the most extreme consequence of the progression of food insecurity. GFSC (2020) has observed that the ways countries, governments, institutions, and communities respond to the disease may have

intense repercussion for food security, toughness, nourishment, and policy of food systems generally. If there no satisfactory preparation, response plans, and funds, second-order brunt on the economy, security, food security, education, and more will be aggravated by non-data-driven and perhaps uncoordinated policy responses.

The objective of this study is to measure the intensity of household hunger in South-East Nigeria aggravated by COVID 19 lockdown using the Radimer/Cornell hunger scale. The study intends to assess how real the fear of hunger by families may be and determine the government safety net actions that are accessible to families for help. The coping strategies by households are also evaluated.

## **2 Materials and Methods**

### **2.1 Study Area**

All households in the South-East Nigeria make up the study population. The South-East has five (5) states which are: Abia State, Anambra State; Ebonyi State; Enugu State; and Imo State. There are six geo-political zones in Nigeria and South-East is one. South-East lies within 5°N to 6°N latitudes and 6°E and 8°E longitudes. Land mass the zone measure about 11 million Hectares, and a population of about 16 million (Onyeneke et al. 2017). The climatic condition of the zone is that of the tropical rainforest and favors agriculture. The zone has two prominent seasons which are; dry season and the wet seasons. The zone experiences wet season from the month of April to October. Dry season runs from November to March. The daily temperature average all through the year falls between 25°C and 35°C. The annual rainfall ranges from 1600 mm to 2500 mm. The zone is made up large demography, whose occupational status include farming,

fishing, craftsmanship, etc. As at the time of study, the zone had not recorded any death as a result of COVID 19 pandemic, but has been affected by the lockdown pronounced by the federal government as one of the numerous actions to curb the spreading of COVID 19.

## **2.2 Survey/Sampling technique**

The survey took place after the first 5 weeks of the COVID-19 lockdown which started from March 20, 2020 in Nigeria (GardaWorld, 2020). All the five states in South- East Nigeria were purposively selected. Four (4) Local Government Areas (LGAs) were selected from each State (20 in total). A purposive sampling was used to sample two town communities (one rural and one urban) from each LGAs. In all a total of 40 communities were selected. In each community, 30 households were sampled using the systematical random sampling. This gave a total of one thousand two hundred and nine (1209) households selected and used for the study.

## **2.3 Instrument and Adaptation**

Instrument for this study was a designed questionnaire to measure level of hunger and food security in households. The study made use of an adapted version of the Radimer-Cornell tool in assessing hunger and food security (Welch et al. 1996, Ballard et al. 2011). This questionnaire items were in line with the Household Food Insecurity Access Scale (HFIAS) and the Household Hunger Scale (HHS), developed by the Food and Nutrition Technical Assistance Project (Regassa and Stoecker, 2011). Following the protocol of Ballard et al. (2011) a 4-week (30-day) recall period was used for data collection and 4 Radimer/Cornell hunger items out of the 9 Radimer/Cornell food security items were administered to a research population during the lockdown. The questionnaire was structured into three sections which included socioeconomic information, Radimer/Cornell hunger scale and coping strategies. The questionnaires was designed to have two parts ('a' and 'b'). The 'a' part addressed household hunger before the

lockdown while the 'b' part addressed household hunger during the lockdown. The questionnaire was developed and administered in English language. The mode of administration was through printed questionnaire by both researchers and assistants across the five states.

Researchers are aware of the health risk involved by adopting the questionnaire as instrument for the study especially during the COVID 19 Lockdown period, however, the need to understand the hunger situation among households (*including those in the most remote rural locations, who lack socio-infrastructural amenities such as **internet***) especially during the period necessitated the choice of instrument.

## **2.4 Data collection**

Volunteers were engaged as respondents. Research assistants who had good idea of the research area were used for data collection. They are also experienced in nutrition counselling and are able to speak the local dialect of the communities. Prior to data collection, research assistants were trained online using the nutrition baseline survey interview guide and quality control procedure for interviewer (Evang and Kuchenbecker, 2015). Research Assistants took advantage of limited intra state movement allowed by State Governments to collect data during the lockdown.

## **2.5 Precautionary measures**

Due to COVID 19 pandemic, the research assistants conducted the survey, observing the social distancing (at least 2-3meter away from contacts) as directed by the Nigerian National Centre for Disease Control (NCDC), Ministry of Health and the World Health Organization (WHO). In addition, the Research Assistants were armored with personal protective equipment such as face mask, hand gloves, hand sanitizer, and avoided bodily interaction/ close contact such as hand

shaking, hugging etc. The respondents also complied by cooperating with the Research Assistants regarding health safety measures.

## **2.6 Analysis of Data**

Household hunger levels were determined by adopting the methods of Welch et al (1996), Frongillo (et al. 1996) and Ballard et al. (2011). Data analysis was executed using frequency counts and percentages. Chi-square tests of independence were employed to test for associations between households hunger values and location of respondents. A Cramer's V test was further used to ascertain the extent of association between them. The software used was SPSS version 20. Significance of values was determined statistical at  $p < 0.05$ .

## **3 Result**

### **3.1 Sample characteristics**

The States which are the sub-federations in Nigeria were all equally sampled but a few states had one or two poorly filled copies of questionnaire as such were not used. Table 1 shows the Socio-demographic characteristics of respondents. The studied sample comprised of 1209 households. The result shows that the half (50.1%) of the households used for this study were households in Urban areas while the other half (49.9%) were rural dwellers. The majority (65%) of these households had married household heads whose marriages are monogamous, while only 3.6% were divorced. A greater proportion (43.2%) had heads of their household who have at least completed secondary school education. Thirty two percent (32%) of the household heads had post secondary school education.

### **3.2 Household Hunger Measurement**



A total of 1209 households were surveyed using the Radimer –Cornell hunger scale (Table 2). The result shows an 82.7% prevalence of hunger among households before the Covid-19 pandemic, while during the Covid-19 lockdown, it rose to 98.6%. On the hunger item, no 1 (worried whether food will run out before the household gets money to buy more food) it was observed that 42.1% of the household were worried before Covid-19, the value increased to 92.5% during the Covid-19 lockdown. A similar trend was observed on item no 2 (the food bought just did not last and I did not have money to get more). Before Covid-19, 39.5% of households gave affirmative response while during the Covid-19 lockdown it rose to 93.6%.

Table 3 shows the test of association between prevalence of household hunger and location of households (urban or rural) before and during the Covid-19. Results show that before Covid-19, the prevalence of hunger in the urban areas was 85.5% whereas the prevalence in the rural areas was significantly lower at a prevalence of 79.9%. The test shows a 7.3% level of association ( $X^2=6.499$ ,  $P=0.012$ ). During Covid-19 lockdown the prevalence of hunger in the urban areas rose to 98.0% and 99.2% respectively in the urban and rural areas. The test shows no significant association between the household's location and prevalence of household hunger during the Covid-19 lockdown. The level of association was 4.9% ( $X^2=2.888$ ,  $P=0.089$ ). This means the situation was not any different whether in the rural or urban areas during the Covid-19 lockdown with respect to hunger, though it was not the case before Covid-19.

### **3.3 Food and Government Safety Net Accessibility by Households**

Figure 1 presents opinion of respondents (percentage distribution) about factors affecting food access and price increase during lockdown. Responding to the questionnaire item about reasons

for hunger situation faced by households, upto 68.6% of households in southeast Nigeria opined that there are changes in the prices of foodstuffs due to the Covid-19 Lockdown. More households (88.7%) blame the increase in price on the Covid-19 lockdown also. Changes in prices of foodstuff are indicated by 63.4% of these households to be caused by scarcity or unavailability of essential and stable food stuff. Others (53.4%), of these households have the view that the Covid-19 Lockdown did not allow them go out to buy foodstuff.

Figure 2 shows that across the southeast Nigeria, the government intervention programs were not popular among households. Only 16.9% of the households have benefited from the Government cash transfer program during the Covid-19 lockdown. Only 16.3% of households benefited from the government food aid program as Covid-19 palliative.

### **3.4 Coping Strategies**

This study was carried out during the COVID 19 Lockdown in Southeast Nigeria when demand for food can be highly acute. Households employed different coping strategies to lessen the effects of food scarcity (Figure 3). Top three strategies used by households to cope during the lockdown are: use of less expensive foods (81.14%), skipping meals (69.31%), and reducing the size of food served at meal times in the family (67.67%). The least adopted strategies were to send out household members for begging (1.82%) and sending household members to eat elsewhere (5.13%).

## **4.0 Discussion**

This study measured household hunger in South-East Nigeria amidst COVID 19 lockdown. It attempted to provide evidence to support or debunk recent arguments about fear of lockdown aggravated household hunger. It also collected data regarding accessibility of governments'

safety-net actions by households and the household adopted coping strategies. It also generated information from respondents about factors supporting household hunger in South-East Nigeria.

Household hunger status was measured by using the Radimer/Cornell hunger scale. The key potency of Radimer - Cornell scale is that it is well conceptualized and based on thorough understanding of food insecurity experience in households (Marques et al. 2015). Henjum et al. (2019) confirms that each set of questions on food insecurity and hunger in Radimer -Cornell Scale address a diverse degree of severity that illuminates the varied levels. Welch et al. (1998) observed that the Radimer/Cornell scale has been attested to have decisive factor related legitimacy in that socioeconomic and demographic characteristics associated with hunger are highly linked to hunger status of households. Radimer and his collaborators deployed the perception of food insecurity to develop an index for hunger by qualitatively interviewing women from poor households (Radimer et al. 1992). The index has been proved to be effective, dependable and consistent in the framework for which it is developed (Kendall et al. 1995).

This study sampled 1209 households from all 5 states of South-East Nigeria. The Demographic characteristics of respondents in this study shows that the 50.1% and 49.9% of the households respectively were located in the Urban and rural areas. With reference to previous research reports it is important to note that household food security and hunger status are affected by a cocktail of socio-economic and demographic factors than location alone (Zalilah and Khor 2008, Regassa and Stoecker (2011); Kirkpatrick and Tarasuk, 2010). The fact that majority (65%) of household heads in this study were monogamously married is a true reflection of the cultural and general practices in South East Nigeria. However, Leyna et. al. (2007) reported more

monogamous relationship (83.2%) among their respondents in rural Kilimanjaro, Tanzania. Interestingly, a greater proportion of household heads in this study are more educated. Higher percentages of household heads completed primary/secondary school education and upto 32% of them had post secondary school education. This is in contrast to the observation made in Sidama district, Southern Ethiopia and rural Kilimanjaro, Tanzania (Regassa and Stoecker 2011; Leyna et al (2007). Bashir, et al (2012) confirmed that education level increases the chances for a household to become food secure implying less hunger problems. A positive effect of higher education in Nigeria has also been linked to declining chances of household food insecurity (Amaza et al., 2006).

Food security, according to World Food Summit (FAO, 1996), is a concept which includes economic and physical accessibility of food by man to the extent that it meets not only his dietary needs but also the food preferences. Deitchler et al. (2011) went further to outline the three basic elements on which food security is based as follows: 1) satisfactory availability of food; 2) ability of households to obtain adequate quality and quantity of food needed by members which meet their nutritional requirements for healthy living; and 3) suitable consumption and utilization of food. Faye et al (2011) indicated an important consideration about food insecurity demonstrating that the food security experience is not static but dynamic. They poisted that levels of food insecurity varies from doubt and apprehension about food availability to the acute case of hunger. Hunger therefore stands for the more rigorous form of food insecurity. As such, regarding the current situation of fear about household hunger in the face of a pendamic orchestrated lockdown it becomes very relevant to assess the hunger situation among households.

In this study the prevalence of hunger among South-East Nigeria households before the Covid-19 pandemic was 82.7%. The frequency rose to 98.6% during the Covid-19 lockdown. Looking at the hunger assessment items is unfortunate that before Covid-19 lockdown 42.1% of households were worried whether food will run out before the household gets money to buy more food; this valued more than doubled (92.5%) during the Covid-19 lockdown. Similar observations were made with other items (Table 2) painting a picture of household difficulty to cope.

Before the coronavirus disease outbreak, food insecurity and hunger among households were already highly problematic (Tiensin 2020). More than 820 million people do not have adequate food to eat (FAO 2019). Out of these, 113 million are surviving with hunger so severe that it poses an instantaneous menace to life and livings (FAO 2018). The economic impact of COVID 19 will bring about a radical increase in the number people who are food insecure and hungry. Tiensin (2020) posits that the most susceptible groups are the poor people in urban areas, those living in remote areas, migrants, casually workers, individual living in conflict areas, and other vulnerable groups. Akerele et al. (2013) reported that many Nigerians are surviving on less than a dollar per day (70%) and the prevalence of food insecurity and hunger in the poor urban households and rural areas stands at 79% and 71% respectively. High food insecurity rate and hunger have also been reported previously among surveyed households in South East Nigerian States - Imo and Anambra States (Uzondu et al. 2017). The result of this study has provided real data to show the household hunger situation in South East Nigeria. It has also showcased the actual negative impact of the COVID 19 Lockdown on households in the area and presented the

reality of the household hunger fear of in South-East Nigeria as a result of COVID 19 Lockdown.

Adverse hunger situation faced by South East Nigeria households as observed in this study were attributed by respondents to changes in the prices of foodstuffs due to the Covid-19 Lockdown; increase in prices; scarcity or unavailability of essential and stable food stuff; inability to go shopping due to lockdown (Figure 1). These factors are similar to the observations of Mousa, and Freeland-Graves (2019) whose research respondents ascribed their hunger situation to lack of food; shortage in resources; inability to travel to shops that sell good-quality foods or the needed types. UNSCN (2020) observed that food environment disruptions which in most cases affect food security and hunger situation are caused by both external and personal dimensions. External dimensions include food availability, prices, and vendors, while personal dimensions include geographical access, affordability, convenience and desirability.

Reacting to the anticipated COVID 19 Lockdown effects on households, International Organisations and Governments have attempted to provide emergency assistance and fortify social protection mechanisms. **O'Connell et al. (2020) confirms that** households with inadequate wherewithal employ a range of means to assuage their needs. The take part in one or more Governments food aid programs. Other may get food from the emergency food suppliers in their community. Unfortunately result from this study shows that across the Southeast Nigeria, the government intervention programs were not popular among households (figure 2). Only few households have benefited from government food aid programs and other forms of palliatives. Mousa and Freeland-Graves (2019) reported that their experimental groups were not able to benefit from government food assistance programmes due to with pre-enrolment bottleneck

difficult for them to fulfill. It should be noted that the present study was carried out in first five weeks of COVID 19 Lockdown when the governments may be fine tuning the plans of reaching out to the households hence this observation.

The result of this study shows the serious effect of COVID 19 Lockdown on households hunger in South Eastern Nigeria. It is an established fact (Ramsey et al. 2012) that food insecurity and hunger that follows can lead to stress, series of fasting cum binges. It can bring about the substitution of expensive nutritious food with cheaper, calorie laden food. These can result in nutrient deficits, metabolic fluctuations and loss weight. Ironically it can also cause overweight and obesity. Households sampled in this study employed the following coping strategies more frequently than others: i) purchase and use of less expensive foods (81.14%), ii) skipping meals (69.31%), and iii) reducing the size of food served family members (67.67%). As least strategies employed, households did not send members to beg (1.82%). They did not also send household members to eat elsewhere (5.13%). This finding was similar to observations made in earlier studies carried out in other countries. The following strategies were the most selected ones: depending on less favored and/ or low-cost food, borrowing food, taking money on borrows, and requesting help from friends or relatives for food. Others are keeping to budget and reducing food portions, skipping meals, and purchasing food on credit (Cordero-Ahiman, 2018, Shisanya and Hendriks, 2018, Chagomoka et al. 2016, Ngidi and Hendriks 2014, Zalilah and Khor 2008)

#### **4.4 Conclusion and recommendation**

Hunger is the extreme pointer to a food insecure household (Faye et al. 2011). When families are unsure about how to get food, the quantity and the kind to meet their nutritional needs, hunger will

set in. This situation comes with serious health implications. The health problems have been linked to increased disease conditions and obesity in adults (Adams et al. 2003; Seligman et al. 2010; Laraia 2013). An enduring unfavorable physical and mental health effects have also been observed among children not receiving adequate food (Alaimo et al, 2001; Jyoti et al. 2005; Rose-Jacobs et. al. 2008). A lot of work is needed world over; more effort should be employed by governments to stem the tide of a geometric increase in acute hunger as predicted by World Food Program (Anthem 2020).

The strength of this study lies in the meticulous collection of data from South-East Nigeria households at the peak of COVID-19 Lockdown. This was done bearing in mind that any food insecurity cum household hunger can only be addressed, if hunger status of specific populations are described in simple, meaningful and comparative way so that a good assessment can be made to determine where attention is most needed (Deitchler et al. (2020). Unfortunately lack of information from the household level has been blamed for hampering the prioritization of interventions.

Results from this study have confirmed the risk of household hunger as predicted by World Food Program (Anthem 2020) due to coronavirus pandemic and its consequent lockdown. Based on the data from South-East Nigeria this study has also established a genuine fear of hunger by individuals as a result of COVID 19 Lockdown. Increased household hunger as observed in this study is attributed to rise in prices; scarcity or unavailability of essential/staple food stuff and inability to go shopping due to lockdown. Unfortunately only few households have benefited from government food aid programs and other forms of palliatives as at the time of study. More



researches should be conducted so as to understand the hunger situation in specific localities. This will help governments as they design programs and policies to assist households in the mean time and in future.

### **Acknowledgment**

The authors appreciate all research assistants and household heads, through the data for this study were collected even during such a challenging time as COVID 19 Lockdown. We are highly indebted.

### **Funding**

Not applicable

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