Covid-19 Lockdown in South-East Nigeria: Evidence-Based Findings to Support Need for Food Systems Transformation

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Outbreak of the novel coronavirus disease (COVID-19) late 2019 brought the whole world to a state of pandemonium (Goyal et al. 2022, Ogunji et. al. 2021). The infection was declared a pandemic by World Health Organization in March 2020. As a way to curtail the rate of infection, countries imposed lockdown. Unfortunately the lockdown heightened the problem which the infection has already caused.

Economic activities became stranded; lives, livelihoods and hunger exponentially got elevated in the society. The COVID-19 created a situation of socioeconomic unsteadiness. It brought to a standstill people's lives. It also led to the suspension of economic activities (Khowa et al. 2022, Rogan and Skinner2019)

Unfortunately the Covid-19 pandemic and other more local shocks worsened the situation, increasing the vulnerability of resource-poor food producers, particularly in already fragile regions. In 2019 it was reported that Africa had the highest regional undernourishment rate (19.1%, or more than 250 million undernourished people), more than twice the global average and growing faster than any other region (FAO et al. 2020).

Things certainly became worse due to the pandemic. Low-and middle-income countries like Nigeria were highly affected. The difficulties encountered were traced to the relatively lack of food and poor food systems. Food systems however involve production, processing, distribution, and consumption (Haddad, 2019).

Food system transformation is essential to ensure adequate incomes for producers and enable access to affordable, healthy diets while managing increasing food demand from growing and highly distressed populations. This study reports the case of COVID-19 lockdown in South-East Nigeria to support the need for transforming food systems.

Materials and Methods
Study Area and Sample Size
South-East Nigeria is made up of five (5) out of the 36 states of Nigeria. They include: Abia State, Anambra State; Ebonyi State; Enugu State; and Imo State. Population of study was targeted at all households in the South-East Nigeria.

The survey was undertaken 5 weeks after the COVID-19 lockdown. Four (4) Local Government Areas (LGAs) (20 in all), 2 communities from each of the LGAs (urban and rural) (40 in all) were purposively sampled. A total of 1209 household heads from the 40 communities were interviewed. Data were collected by research assistants with good knowledge of the research area and experience in nutrition counseling and could speak the local dialect of the community. The authors of this paper supervised data collection.

Data Collection/Analysis

Designed questionnaire was used as the instrument for the study to measure level of hunger and food security in households. The study utilized an adapted version of the Radimer-Cornell tool used for assessing hunger and food security (Welch et al. 1998, Ballard et al. 2011). The items of questionnaire aligned with the Household Food Insecurity Access Scale (HFIAS) and the Household Hunger Scale (HHS) (Regassa and Stoecker, 2011). A 4-week (30-day) recall period was used for data collection following the protocol of Ballard et al. (2011). Four (4) Radimer/Cornell hunger items out of the 9 Radimer/Cornell food security items were administered to the research population during the lockdown. Only respondents who voluntarily accepted were used in the study. The questionnaire was developed and administered in English language.

Primary survey data analysis consisted in frequency counts and percentages. Chi-square tests of independence were used to test for associations with demographic variables, and a Cramer's V test was further used to ascertain the extent of association between them, using SPSS version 20. Statistical significance was determined by $p < 0.05$.

Result/Discussion

Radimer/Cornel hunger scale was used to determine the Household hunger. Chi-square test was used to confirm the significance (P<0.05). Results indicated that before the Covid-19 lockdown the hunger situation in South-East Nigeria was 82.27%. This increased to 98.6%. A test of association between the hunger status of these households shows a significant association (x2=10.688, P-value for exact= 0.004) The Cramer's V test shows a 9.4% strength of association between the household hunger before and during the Covid-19 lockdown in Southeast Nigeria. The Cramer's V coefficient - though low - was statistically significant implying that the hunger level during the Covid-19 lockdown is associated with their hunger status before the lockdown. Meaning that those hungry households before the lockdown were still hungry during the lockdown whereas more households not hungry became hungry during the lockdown, that is the Covid-19 only made bad matter worse. Least changes were observed in Abia and Anambra States at 0.4% respectively. Ebonyi and Imo States were seen to have significant association between the hunger status of households before and during the Covid 19 lockdown to the extent of 36.5% and 26.7% respectively. Enugu State was highest at 67.8% (Table 1).

It was also observed that covid-19 lockdown significantly affected food prices. More than 90% of respondents confirmed that food was more expensive during the lockdown. Food in some localities was not even available due to stains in the distribution channels and lack of access. Ogunji et al. (2021) posited that the lockdown and social distancing executed by governments brought about shutdown of marketplaces, ban of vendors from selling, reduction of the number of shoppers, and the growth of long queues at places food was sold. The already appalling hunger situation before the Covid-19 became worsen during the lockdown. This situation highlights the effect of food lack and poor food systems.

Table 1: Test of significant change in the household hunger before and during the COVID 19 lockdown across the States in Southeast Nigeria

Household hunger per period	Households		Pearson Chi-square value	Cramer's V/ Phi Test coefficient	Fisher's exact Test P-value
	Frequency	Percentage			
Abia State					
Before the Covid-19 lockdown	251	99.6	0.087	0.019	1.000
During the Covid-19 Lockdown	252	100			
Household hunger changes	1	0.4			
Anambra State					
Before the Covid-19 lockdown	235	97.9	0.087	0.019	1.000
During the Covid-19 Lockdown	236	98.3			
Household hunger changes	1	0.4			
Ebonyi State					
Before the Covid-19 lockdown	217	91.2	31.396	0.363	0.000*
During the Covid-19 Lockdown	235	98.7			
Household hunger changes	18	7.5			
Enugu State					
Before the Covid-19 lockdown	76	31.8	0.468	0.044	0.494
During the Covid-19 Lockdown	238	99.6			
Household hunger changes	159	67.8			
Imo state					
Before the Covid-19 lockdown	221	92.1	17.115	0.267	0.003*
During the Covid-19 Lockdown	231	96.2			
Household hunger changes	10	4.1			
Overall					
Before the Covid-19 lockdown	1000	82.7	10.688	0.094	0.004*
During the Covid-19 Lockdown	1192	98.6			
Household hunger changes	192	15.9			

*Significant $P<0.05$

Conclusion

Bearing in mind that food systems involve production, processing, distribution, and consumption, this study observes that transforming food systems in South East Nigeria is inevitable. If households (especially the rural) had the technology of adequate on/off farm processing and storage of their own food during time of plenty the effect of lockdown on them would have been minimal. Concerted effort should be made to up-scale sustainable food storage and processing.

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