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COVID-19 Lockdown: Assessment of Food Security Status Among Rural Dwellers in Ogun State

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Abstract

The lockdown measures put in place to curtail the spread of COVID-19 disrupted supply chains, hence food insecurity was inevitable in the rural areas of the state. This study has described personal characteristics, and perceptions on COVID-19 among the rural dwellers, as well as coping strategies during the lockdown, and assessed the food security status in the rural areas of the state. Data were collected from 210 rural household heads through personal interview. Results show that the average age of the household heads was 52.9 years. Most (74.8%) of the households were male headed. More than half (54.8%) of the rural households had negative perception towards COVID-19 pandemic. Further, consumption of own farm produce was the most used coping strategy during lockdown in order to ensure food security. About half (51.4%) of the households were food secure during COVID-19 lockdown. Consequently, significant difference existed between the food insecurity status of male and female headed households ($p < 0.05$). Although, more male headed households were food insecure than female headed households. Thus, agriculture should be classified as essential sector during uncertainties and at all times to keep rural economy active and consequently ensure food security in the rural areas.

Keywords: Agriculture, Pandemic, Perception, Rural economy, Subsistence farming

JEL Classification: I39, Q16

Introduction

The first few cases of COVID-19 were confirmed and reported in Nigeria between February and March, 2020 with the first confirmed case reported in Ogun State, Nigeria. Afterwards, authorities announced a lockdown of major cities worst hit by the disease on the 29th March, 2020 which lasted for weeks as the pandemic continue to surge. There were restrictions on human and vehicular movements, ban on social-economic activities and gatherings of people in an attempt to curtail the nationwide spread of COVID-19.

There is no doubt about it that COVID-19 has cast a devastating blow on Nigeria's economy, agriculture inclusive. As the pandemic continues to surge, commercial activities and farming were brought to a near halt with resultant effect on household food security. United Nation's Food and Agriculture Organization FAO (2014) reported that much of the food in Asia and Africa is produced by smallholder farmers. About 80% of the world's poorest and most food-insecure people live in remote rural areas (Ahmed *et al,* 2021). The most vulnerable group in Nigeria are the rural smallholder farmers who do not have access to adequate quality of food they want at all time (Amaza, 2018).

Food security exist when all people, at all time, have physical, social and economic access to sufficient, safe and nutritious food to maintain a healthy and active life (FAO, 2008). Consequently, United Nations (UN) estimates more than a quarter of a billion people could face starvation during the pandemic (UN, 2020; Ahmed *et al,* 2021). The World Health Organization (WHO) also expressed concerns over the potential impact of COVID-19 on food shortages, hunger, and malnutrition which would only increase the vulnerability to diseases further (WHO, 2020).

Indeed, as a result of the measures put in place to curtail the disease, COVID-19 has negatively affected the economy as well as every aspect of people's lives especially of those in the rural areas whose major economic activity is farming. The lockdown which was expected to reduce the spread of COVID-19 suddenly became a source of crisis among the populace as well as those in the rural areas who were struggling with harvesting and transportation of farm produce to the markets to enable food availability. Similarly, people found it difficult to sustain their purchasing power which

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could give them access to food as the little available foods were becoming expensive.

As the lockdown continued, the rural dwellers in Ogun State who are majorly farmers experienced glut which resulted in little or no revenue and inability to purchase food not grown by the rural dwellers. Hence, food insecurity was inevitable should the trend continues. This agrees with Barrett (2020) who opined that as a result of COVID-19 lockdown and movement restrictions imposed by many countries, those in the rural areas were unable to work and earn due to loss of jobs, businesses, and other means of livelihood, and with limited access to markets, both their lives and livelihoods have been threatened.

In addition, the subsistence nature of farming in the rural areas could also affect framers ability to generate enough revenue from farming, and subsequently put them at risk of losing access to food during crisis such as the recent pandemic lockdown in the country. This assertion is supported by Fadipe *et al,* (2019) who posited that subsistence nature of farming among rural households tend to make them unable to generate sufficient income and also put them at risk of losing access to food during the lean or off season.

Owing to the fact that agriculture is a major economic activity in Ogun State, and the state's being one of the top contributors to the country's economy, it becomes important to assess the effect of COVID-19 pandemic lockdown on rural household food security status in order to provide insight to the plight of the rural dwellers and suggest measures to forestall future occurrence of possible food insecurity. Hence, this study specifically described the personal characteristics of the rural dwellers in Ogun State, assessed the perceptions of these about COVID-19 pandemic, identified the coping strategies employed by them during the COVID-19 pandemic lockdown, and assessed their food security status during COVID-19 pandemic in the study area. Also, difference in food insecurity status of male and female headed households in the study area was tested.

Data Sources and Methodology

To achieve the objectives of this study, primary data were obtained with the aid of survey among rural household heads in Ogun state between June and August, 2020. Ogun State is located in the south-west geopolitical zone of Nigeria. The state is politically divided into three senatorial districts which are; Ogun Central, Ogun West and Ogun East.

Multistage sampling procedure was used to select respondents. The first stage involved random selection of Ogun East and Ogun West senatorial districts. In the second stage, proportionately 30 per cent Local Government Areas (LGAs) were selected randomly each from nine LGAs in Ogun East and five LGAs in Ogun West senatorial districts, respectively. In the third stage, 20 per cent of the wards in the selected LGAs were selected to give a total of ten wards. Finally, snowball technique was used to identify 464 farming households who were ready to take part in the study, and out of these, 45 per cent were randomly selected to give a sample size of 210 households.

The degree of occurrence of household food insecurity was measured using Household Food Insecurity Access Scale (HFIAS) score (Coates *et al,* 2007). HFIAS score is a continuous measure of the degree of food insecurity in the household in the past four weeks (30 days). Nine frequency of occurrence questions were presented to the respondents. Zero (0) was assigned to no occurrence, 1 as rarely, sometimes was 2, and often was assigned score of 3. Consequently, the average score was used to categorize respondents into food secure or food insecure. Above mean is food insecure, while below mean is food secure. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to analyse the objectives, while independent sample t-test was used to test the hypothesis.

Results and Discussion

Personal characteristics of the respondents

Regarding the personal characteristics of the respondents such as age, sex, and family size, results in Table 1 show that the average age of respondents was 52.9 years. This indicates that most of the household heads were in their economically active age and this could enhance their ability to cope and sustain household food security during uncertainties. This is in tandem with the assertion that younger and active household heads are less vulnerable to food insecurity (Oyetunde-Usman and Olagunju, 2019). Majority (74.8%) were male headed households, while most (80.5%) of the rural household heads were married. This suggests that most of the households were stable and at advantage of being food secure.

Furthermore, the average family size was 6 members. This shows a relatively moderate rural household which could enhance farm labour at a time when hired labour was not available due to restrictions on movement of people. Subsequently, majority (88.1%) of the household heads were educated. This implies that education is key in deciding quality food to access and utilize, as well as resource management during the pandemic. This is supported by Mallick and Rafi (2010); and Ngema *et al,* (2018) who reported that educational attainment can positively affect the ability to earn wages/income required to access food.

Level of perception of the rural dwellers on COVID-19 pandemic

Perception statements which border on respondents believe on whether COVID-19 was real or/and lack of trust in actions taken by the authorities to curtail the spread amongst others were used to categorize respondents level of perception into positive and negative. As shown in Table

Table 1. Distribution of the rural dwellers by personal characteristics (n = 210)

Variables		Frequency	Percentage	Mean
Age	30-39	57	27.1	
	40-49	48	23.0	
	50-59	37	17.6	52.9 years
	60-69	36	17.1	
	70 and above	32	15.2	
Sex	Male	157	74.8	
	Female	53	25.2	
Family size	Less than or equal 3	13	6.2	
	4-6	138	65.7	6 members
	7-9	55	26.2	
	10 and above	4	1.9	
Marital Status	Single	12	5.7	
	Married	169	80.5	
	Divorced	9	4.3	
	Widowed	20	9.5	
Level of Education	No formal education	25	11.9	
	Primary education	45	21.4	
	Secondary education	84	40.0	
	Tertiary education	56	26.7	

Source: Field survey, 2020

2, slightly more than half (54.8%) of the rural dwellers had negative perception on COVID-19 pandemic. This suggests that respondents somewhat believed in their immunity and perceived the authority as being insincere with the pandemic and this could have predisposed the rural dwellers to health risk. This finding is in agreement with Chukwuorji and Iorfa (2020) who posited that denial, and lack of trust in the Nigerian government were the reason for the wrong perception on COVID-19.

Coping strategies employed by the rural dwellers during the COVID-19 lockdown

Consequent, upon the restrictions on human movement and lack of access to market during the lockdown, it becomes pertinent for the rural dwellers to cope with the effects. Thus, the mean values in Table 3 shows that most of the rural dwellers consumed food from their own farm produce (1.61), while reduction in household expenditure during the period (1.10) was the second ranked coping strategies employed. Similarly, reduction in portion of food served (1.05), change in choice of food (1.01) were the other coping measure used during the pandemic lockdown among the rural dwellers. These findings connote lack of access to sufficient and quality food at all time during the lockdown which is suggestive of food insecurity. This is similar to the findings of Singh *et al,* (2021) that household who are well off relied on own farm produce during lockdown to cope with food security situation during the pandemic.

Occurrence of household food insecurity during COVID-19 pandemic lockdown

The mean scores in Table 4 reveal that during the lockdown, the rural dwellers experienced insufficient food, such that household members went a whole day and night without eating anything (2.97), this is followed by household members going to bed hungry at night as a result of insufficient food

Table 2. Distribution of respondents according to their level of perception (n = 210)

Perception level	Frequency	Percentage	Mean	Standard deviation
Negative (below mean)	115	54.8	33.31	3.59
Positive (mean and above)	95	45.2		

Source: Field survey, 2020

Table 3. Distribution of respondents by coping strategies employed during COVID-19 pandemic lockdown (n = 210)

Coping strategies	Never	Occasionally	Always	Mean
Reliance on government for support	52.9	36.2	11.0	0.58
Consumption of own farm produce	3.3	33.9	62.9	1.61
Change in choice of food	11.9	74.8	13.2	1.01
Reduction in household spending	12.4	65.2	22.4	1.10
Community support	52.4	41.4	6.2	0.53
Reduction in number of meal per day	20.0	65.7	14.3	0.99
Borrowing to enhance purchasing power	64.8	28.1	7.1	0.42
Reduction in portion served at meal time	14.8	65.2	20.0	1.05
Engaged as a labour in other farms	68.1	19.0	12.9	0.44

Source: Field survey, 2020

Table 4. Distribution of household food insecurity among rural dwellers in Ogun State (n = 210)

Statements	No occurrence	Rarely	Sometimes	Often	Mean
Anxiety and uncertainty about the household food supply					
In the period of lockdown, did you worry that your household would not have enough food?	14.3	40.0	29.0	16.7	1.48
Insufficient Quality (includes variety and preferences of the type of food					
In the period of lockdown, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	3.4	43.3	43.3	10.0	1.60
In the period of lockdown, did you or any household member have to eat a limited variety of foods due to a lack of resources?	5.7	47.1	36.7	10.5	1.52
In the period of lockdown, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	9.0	34.8	34.8	21.4	1.69
Insufficient food intake and its physical consequence					
In the period of lockdown, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	1.0	46.7	35.2	17.1	1.69
In the period of lockdown, did you or any other household member have to eat fewer meals in a day because there was not enough food?	1.0	40.9	45.2	12.9	1.70
In the period of lockdown, was there ever no food to eat of any kind in your household because of lack of resources to get food?	1.0	15.7	51.4	31.9	2.14
In the period of lockdown, did you or any household member go to sleep at night hungry because there was not enough food?	-	2.9	11.0	86.1	2.83
In the period of lockdown, did you or any household member go a whole day and night without eating anything because there was not enough food?	0.5	-	1.4	98.1	2.97

Source: Field survey, 2020

Table 5. Distribution of respondents by degree of occurrence of household food insecurity (n = 210)

Food security status	Frequency	Percentage	Mean	Standard deviation
Food secure (below mean)	108	51.4	17.62	2.97
Food insecure (mean and above)	102	48.6		

Source: Field survey, 2020

Table 6. T-test results comparing male and female headed household food insecurity status

Variable	Secure	Insecure	N	Mean	Standard deviation	*t*-value	Df	*p*-value
Male	76	81	157	17.86	2.93	1.997	87.023	0.049
Female	32	21	53	16.91	3.03			

Source: Field survey, 2020

(2.83). Similarly, the rural dwellers experienced a period without any kind of food to eat due to lack of resources to purchase food (2.14). In addition, the household members experienced periods where they had to eat foods not preferred due to lack of resources to purchase the preferred food (1.69) amongst others occurrence of food insecurity in the study area. The findings suggest that the rural households experienced insufficient food intake as a result of lack or limited access to food supply other than own farm produce. This could lead to food and nutritional insecurity. This is supported by Singh *et al,* (2021) whom in their study reported that household food insecurity was experienced during the pandemic due to lack of consistent access to enough food.

Degree of occurrence of household food insecurity in the study area

Table 5 shows that about 51.4% of the rural households were marginally food secure, while close to half (48.6%) of the households were food insecure during COVID-19 lockdown. This implies that though being the food secure household, there was growing occurrence of food insecurity due to depletion in household income resulting in insufficient quality food intake, insufficient varieties of food available and the uncertainty about food supply during the lockdown. This equally suggests lack of support in the form of food palliative to cushion the effect of the pandemic lockdown on household food security among the rural dwellers. This report agrees with the assertion that a reduction in the household income, access to varieties of food supply and lack of support threatens household food security during the pandemic (Arndt *et al,* 2020; Shupler *et al,* 2020; Wolfson and Leung 2020; Niles *et al,* 2020).

Test of difference between food insecurity status of male and female headed households

Gender difference in household food security could be as a result of unequal access to economic activities. Based on the result in Table 6, there was a significant difference in mean food insecurity status between male and female headed households (t (87.023) =1.997, $p < 0.05$). It was found that, more male headed households were food insecure than female headed households. This is in disagreement with a priori expectation that traditionally, females are economically disadvantaged which could likely make them more vulnerable to food insecurity during uncertainties than the males. This corroborates Crush *et al,* (2012) who posited that women as household heads are more likely to be disadvantaged in terms of land security. However, the finding could be as a result of the females' involvement in other entrepreneurial activities giving income in the rural areas other than farming activities which was largely affected during the COVID-19 lockdown.

Conclusion and Policy Implications

Conclusively, the study found that most of the rural dwellers were in their economically active age, and there were more male headed households than female headed households in the study area. In addition, more than half of the households had negative perception on COVID-19. It was also revealed that consumption of food from own farm produce, reduction in household expenditure during the period, and reduction in portion of food served were the major coping strategies employed by the rural dwellers due to lack of government support in form of palliative. The study indicates that rural households experienced insufficient quality food intake, reduced varieties of food available and the uncertainty about food supply during the lockdown. Consequently, more than half of the households were food secure during the lockdown. Thus, a difference in the household food insecurity status was also found between that of male and female headed households. Female headed households emerged as more food secure than the male headed households. It is hereby recommended that agriculture should be classified as essential sector during uncertainties and at all times to keep rural activities running and economically active, thus strengthening the resilience of the rural households and ensure food security.

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