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Socio-economic Effects of Covid-19 Pandemic on Rural Farm Families' Well-Being and Food Systems in Imo State, Nigeria

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Abstract: This work ascertained the socioeconomic effects of covid-19 pandemic on rural farm families' well-being and food systems in Imo State, Nigeria. The specific objectives were to examine farm families' awareness of Covid-19 pandemic; identify information sources on Covid-19 pandemic, and determine the perceived effects on farm families' well-being and food systems. Data were collected using well-structured questionnaire and complemented by oral interview. Purposive random sampling was used to select 452 respondents from farming communities in Imo State, Nigeria. The descriptive statistics including percentages, mean and standard deviation were used to further analyze the data. The results obtained revealed that the respondents were fully aware of covid-19 pandemic as shown by the use of face masks (100%), lock down (97.37%) imposition by the government, vaccination (99.5%), among others. Several sources of information exist on Covid-19 pandemic, such as radio (100%), television (75.5%), churches (88.4%), and town criers (99.5%). The effects on well-being and food systems includes loss of income (M=3.41), loss of employment (M=3.68), disruption of food supply (M=3.67), increased food cost (M=3.70), reduced food availability (M=2.89), death/illness (M=2.67), reduced food distribution (M=2.75) increased transport cost (M=3.41), increase food prices (M=2.91) among many others.

Keywords: *Covid-19, Farm families, Food supply, Food systems, Well-being*

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1. Introduction

Covid-19 is the world's most difficult health challenge that is unpredictable since the end of the Second World War till now. How extreme the consequences of this scourge will be is not known to anyone, and predictions remain for guess work. On a daily basis, week after week, the situation is looking more and more serious with the third wave and new variants of the deadly virus (Woodhill, 2020). As this happens, the world's poorest people, whether living on high, middle or low in countries will be most affected and vulnerable to the health impacts. These individuals will be particularly at risk due to the poverty, high population, reduced remittances and the limited capacity to respond.

Food is people's most critical need. Keeping food safe and flowing to both city and rural population at a very cheap rate must be key in responding to the Covid-19 crisis. The reduction or loss of incomes and investments will have major impact on people's financial resources and ability to purchase food. The livelihoods of most rural people are connected to be production, processing and distribution of food and the food security situation (Woodhill, 2020) of the urban population depends on the work of the small-scale rural farmers, and rural workers. Therefore, rural poverty, rural well-being, urban and rural security and the functioning of food systems are interconnected.

Therefore, the impact of Covid-19 on rural poor's well-being and food system needs to be understood as a crucial health, economic, livelihoods and food security crisis with serious implications. The various restrictions and lockdowns imposed are impacting seriously on all aspect of people's livelihoods (Woodhill, 2020). Thus, this has caused a massive economic slowdown as people's freedom to shop, work and travel has been curtailed. In return, large numbers of people, especially casual and low paid workers have lost their jobs and their income. Multinational companies and firms have dropped income

earnings and sacked many workers. These have affected purchasing food power and supply, and the availability of credit.

This affects large numbers of the population who become ill with the virus and over-whelmed medical facilities with death rates rapidly increasing. As these occur, the well-being of rural population and food systems are made to shrink.

Imo State, Nigeria which is the focus of this study has its worrisome share of ill-being, poverty and deprivation, therefore, it is not surprising that the issue of wellbeing, particularly, of rural households will be affected by the Covid-19 pandemic, despite the abundant natural and human resources the country and the region is endowed with (Amao et al., 2017; Kanayo, 2015). This submission attests to the branding of Nigeria as poverty-stricken country, although in the midst of abundance in human and material resources, with high rate of poverty, hunger, unemployment, high rate of out of school children, high rate of child and maternal death with an alarming rate of malaria (Jacob, 2015). Similarly, other geopolitical zones in Nigeria have high level poverty and ill-being with Northern Nigeria having highest poor population who are largely rural dwellers (Udoh et al., 2017).

Wellbeing represents a state of fulfillment, abundance in health and wealth which indicates a positive change in the quality of life of a person or group of persons. It indicates an improvement in the quality and longevity of one's life or of a population, resulting from upward improvement in income, access to community assets and social services which create a material condition for good standard of living and general human development (Popova, 2017). Wellbeing is conceived as a state in which wealth is created, thus giving birth to the attainment of the good life, secured livelihoods as well as socio-economic empowerment (Chambers, 1995).

Accordingly, wellbeing is associated with a state of being happy which may either be occasioned by ties, a social relation or economic pathways that produce the condition of wellbeing (Seferiadis et al., 2015). In the context of this study, wellbeing represents a socio-economic condition that guarantees an increase in income, food security material health, savings and easy access to community capitals which, by and large, are fundamental to human development. These important elements of livelihood assets are considered to be effective towards improving the standard of living and quality of life of an individual or household which largely influences wellbeing status. Therefore how Covid-19 pandemic affects food systems and well-being is not known and this study seeks to address it.

The specific objectives included:

a) To examine the .rural farm families' awareness of Covid-19 pandemic
b) To identify information sources on Covid-19 pandemic'
c) To determine the perceived effects of Covid-19 pandemic on rural farm families' food systems and well-being.

2. Materials and methods

Imo State lies within latitudes 4°45'N and 7°15'N, and longitude 6°50'E and 7°25'E with an area of around 5,100 sq km. It is bordered by Abia State on the East, by the River Niger and Delta State on the west, by Anambra State to the north and Rivers State to the south (Imo State Government (IMSG), 2010). The state is rich in natural resources including crude oil, natural gas, lead, zinc. However, with a high population density and over farming, the soil has been degraded and much of the native vegetation has disappeared. This deforestation has triggered soil erosion which is compounded by heavy seasonal rainfall that has led to the destruction of houses and roads. The rainy season begins in April and lasts until October with annual rainfall varying from 1,500mm to 2,200mm (60 to 80 inches). An average annual temperature above 20 °C (68.0 °F) creates an annual relative humidity of 75% with humidity reaching 90% in the rainy season (IMSG, 2010). The dry season experiences two months of Harmattan from late December to late February. The hottest months are between January and March. Imo has three Agricultural zones namely, Orlu, Okigwe and Owerri. A total of 452 rural farm families was randomly selected from a list of 4520 registered farm families from the three Agricultural zones of the State. Primary data were collected through questionnaire (survey) and interview schedule. The data were collected from rural men and women farmers, community leaders, youth leaders. Descriptive statistical tools such as percentages presented in frequency distribution tables, mean and standard deviation were used to achieve objectives 1,2 and 3. Mean was computed on a 4-point Likert type rating scale of strongly agree, agree, disagree and strongly disagree assigned weight of 4,3,2,1 to capture perceived effects covid 19 pandemic on food systems and well-being (objective 3). The values were added and divided by 4 to get the discriminating mean value of 2.5. Any mean value equal to or above 2.5 was regarded as a major effects on food system and wellbeing, while values less than 2.5 were regarded as no effects.

3. Results and Discussion

3.1. Awareness of Covid-19 pandemic by the respondents

Table 1 shows that the respondents were fully aware of the reality of Covid-19 pandemic as indicated by their knowledge of events associated with the pandemic. These events include avoidance of handshake (88.0%), no touching of nose/eyes (95.5%), vaccination (99.5%), hand washing (91.5%), wearing of face mask (100%) and social distancing (95.3%). These measures were seen by the respondents in the communities and markets where they met people. The sight of the above measures reinforced the firm belief that Covid-19 exist. Other signs were knowledge of the incubation period of 2-14 days (99.7%),

transmission is human to human (89.6%), difficulty breathing (90.2%), coughing/dry cough (93.5%), sore throat (68.5%), common cold (83.1%), fever/tiredness (98.2%), lockdown imposition (97.3%), barriers to domestic travels (86.1%) and public transport restrictions (90%). The respondents were fully aware of the above due to covid-19 pandemic and they even practiced the covid-19 protocol measures and received enlightenment messages from the Nigeria Centre for Diseases Control (NCDC).

Table 1: Awareness of Covid-19 pandemic signs

Awareness signs	*N	%
Avoidance of hand shake	401	88.7
No touching of nose/eyes	432	95.5
Incubation period is 2-14 days	451	99.7
Transmission is human to human	405	89.6
Difficulty breathing	408	90.2
Coughing/dry cough	423	93.5
Sore throat	310	68.5
Common cold	376	83.1
Fever/Tiredness	444	98.2
Face mask usage/wearing	452	100
Social distancing	431	95.3
Hand washing with soap	414	91.5
Lockdown imposition	440	97.3
Vaccination	450	99.5
Barriers to domestic travels	389	86.1
Public transport restrictions	407	90.0

*Multiple response

Covid-19 Information Sources in the study area

Table 2 shows that the farm-families have so many sources/avenues of information on covid-19 pandemic. The sources include reading books (90.7%), journals (85.6%), magazines (72.9%), television (75.2%), radio (100%), newspapers (66.5%), churches/religious bodies (100%), town criers (99.5%), family members (70.3%), doctors (88.4%), and community leaders (100%). These agrees with Efe (2020), who posited that there are a lot of information sources on Covid-19 available as the Nigerian government was able to employ various strategies for sharing Covid-19 information to ensure the awareness penetrates every stratum of the society, the rich class, poor, educated, illiterate, kids, youth, and elderly, male and female, digital literate/ digital illiterate to mention only but a few.

Table 2: Covid-19 pandemic information sources

Sources of information	*N	%
Reading books	410	90.7
Journals	387	85.6
Magazines	326	72.1
Television	340	75.2
Radio	452	100
Newspapers	301	66.5
Hospital/health centre	290	64.2
Churches/religious bodies	452	100
Town criers	450	99.5
Family members	318	70.3
Community leaders	452	100
Medical doctors/nurses	400	88.4

Perceived Effects on Rural Farm families' Well-being

Table 3 shows that the effects of covid 19 on the farm families are many and varied, touching all facets of their lives. Based on a 2.50 discriminating mean index, the effects on well-being includes loss of income (M=3.41), loss of employment (M=3.68), loss of remittances (M=3.28), reduce ability to produce food (M=3.12), illness/death of household heads (M=2.90), limited/reduced access to food (M=2.85), reduce food availability (M=2.28), disruption of food supply chain (M=3.67), increased food cost (M=3.70), high level of infection (M=3.81) quick diseases spread due to neglect (M=2.68), panic situation (M=2.74), increased stress (M=2.60), financial crises among households (M=3.01), schools closure (M=3.41), reduced capacity to acquire education (M=3.01), low education investment (M=2.89), increased child labour in agriculture (M=2.79), increased households debts (M=2.91), reduced saving (M=2.58), local household food stock will lower (M=2.16) and many more.

Table 3: Perceived Effects on Rural Farm families Well-being

Perceived effects	Mean	SD
Loss of income	3.41	0.74
Loss of employment	3.68	0.62
Loss of remittances	3.28	0.54
Reduced ability to produce food	3.12	0.89
Illness/death of household heads	2.90	0.71
Limited/reduced access to food	2.85	0.55
Reduce food availability	2.89	0.72
Disruption of food supply chain	3.67	0.68
Consumption of low nutritional food	2.74	0.49
Increased food cost	3.70	0.58
High level of infection	3.81	0.98
Quick spread due to neglect of measures	2.68	0.84
Panic situation leading to violence	2.74	0.74
Increase stress	2.60	0.78
Financial crises among households	3.01	0.68
Schools closure	3.41	0.67
Reduced capacity to acquire education	3.21	0.44
Low education investment	2.89	0.74
Increased child labour in agriculture	2.78	0.84
Increase households debts	2.91	1.01
Reduced savings for households	2.68	0.50
Local household food stock will lower	2.61	0.76

Accepted mean = 2.50

Perceived effects of Covid-19 on Farm families' Food systems

Table 4 shows the effects of Covid-19 lockdown and movement restrictions on food systems of rural farm families. These arose from border closures, restricted gathering, closed schools and total no movement. With a discriminating mean index of 2.50, the following effects were identified – reduced food production (M=2.67) arising from no movement of farm laborers, reduced food distribution (M=2.75) also due to non-vehicular movement, inhibition of access to food (M=2.89) also as a result of no movement making food access difficult. Others include increase food prices/supplies (M=2.91), reduced quality/quantity of food (M=3.64), spoilage of food produce (M=3.01) mainly due to delays in sale of food produce, disruption of farm labour (M=2.89), reduced access to credit facilities (M=3.61), delayed harvesting of crops (M=2.73), disruption of food processing time (M=3.20), supply of low nutrition food items (M=2.69), processing of low quality food items (M=2.58), increased food transport cost (M=3.41), altered truck food delivery movements (M=2.97) among others.

Table 4: Covid-19 effects on farm families food systems

Food system effects	Mean	SD
Reduced food production	2.67	1.05
Reduced food distribution	2.75	0.88
Inhibition of access to food	2.89	0.67
Increase food prices & supplies	2.91	0.71
Reduced quality/quantity of food	3.64	0.98
Spoilage of food produce	3.01	1.01
Disruption of farm labor	2.89	0.49
Reduced access to credit facilities	3.61	0.23
Delayed harvesting of crops	2.73	0.84
Disruption of foods processing time	3.20	0.78
Supply of low nutrition food items	2.69	0.68
Processing of low quality food items	2.58	0.99
Increase food transport cost	3.41	0.74
Truck deliveries of foods altered	2.97	0.58

Accepted mean = 2.50

4. Conclusion

There is disproportionate impact of Covid-19 on poor and vulnerable groups including small-scale farmers. There is critical need to keep food supply chains functioning. Covid-19 pandemic is therefore real and has ravaged economies. It has led to so many untold hardships such as loss of income, loss of employment opportunity, loss of labour, panic/stress, reduced food production, and access to food, and distribution.

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