AFTERMATH OF COVID-19 ON PILLARS OF FOOD SECURITY: THE RURAL HOUSEHOLDS' PERSPECTIVES

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ABSTRACT

Rural areas of Nigeria are mainly agrarian and majority of their dwellers practice subsistence farming characterised with small farm size and low productivity. The advent of COVID-19 pandemic with its inherent challenges on agriculture further posed a serious threat on the survival of the resource-poor rural households. This study was a post-COVID assessment of how rural households perceived the effects of the pandemic on four major pillars of food security. Data was collected from 156 randomly selected rural households using validated interview schedule. Data was analysed using appropriate descriptive and inferential statistics. Results revealed that although, majority (57.7%) had adequate knowledge about COVID-19 pandemic, more than half (53.2%) had indifferent perception towards it. Majority (89.1%) perceived the effects of COVID-19 pandemic to be serious on all the pillars of food security despite adopting multiple coping strategies to mitigate the effects of the pandemic. The government rarely gave palliatives (mean=0.15) with the majority (85.6%) claiming they had never received any. A negative but significant relationship exists between household size and the perceived effects of the pandemic (r=-0.17; P≤ 0.05). Since the rural households perceived severe effects of the pandemic on food availability, access, utilisation and stability, deliberate development of responsive packages by relevant local, state and federal government agencies to cushioning the effects is germane to averting severe food shortage and hunger in the rural areas.

Key Words: Impact, interrelated food pillars, perception, resource-poor households, strategies

INTRODUCTION

The COVID-19 pandemic is a global disaster that seriously affected agriculture and other sectors. The United Nations (2020) opined that the pandemic may have critical effect on household food security because of its time of occurrence which coincided with the prevalence of other negative forces such as climate change, natural disaster, conflict and pests' infestation that threatened food production. The situation became aggravated by the various measures (such as lockdown and movement restriction) imposed by government of various nations to limit the spread of the pandemic which drastically reduced availability of farm labour, caused delay of many agricultural activities (like land preparation, planting, fertilizer application, weed control, irrigation and harvesting; hindered free distribution of agricultural inputs to farmers and supply of agricultural raw materials to agro-allied industries as observed by Omekwe and Obayori (2020). Consequently, it resulted in hikes of food prices (Amare *et al.,* 2020). Inegbedion (2021) also observed that the extended stay at home and away from the farm endangered food security and resulted in social vices caused by hunger and deprivation.

According to Nigeria Centre for Disease Control (NCDC) (2020), the country recorded its first COVID-19 index case on the 27th of February 2020. Initially, an average Nigerians perceived COVID-19 as a virus of the wealthy and elite. This could be due to the fact that government officials and people with higher socio-economic status in Nigeria were the first set of those with established cases of COVID-19 pandemic in the country. Nwaubani (2020) reported that the prevalence of the pandemic among this class of people gave COVID-19 the tag "a disease of the mighty and rich" in Nigeria.

Food security as a concept is flexible in nature having several definitions. However, the explanation of the concept by its broadly accepted definition is that, there is food security only when everyone, every time, can economically and physically access safe, sufficient, and nourishing food to satisfy their food choices and dietary needs to live a healthy and active life (FAO, 1996; Idachaba, 2006). It is a multifaceted phenomenon comprising four interrelated pillars namely: availability of food, access to food, utilisation of food and food stability (FAO, 2009; Kent et al., 2022). Food availability refers to the situation when food is readily obtainable for consumption either through improved agricultural production or market access. It implies that food can be produced or bought to achieve food availability at the household level. In the light of this, Bene et al. (2015) opined that increased productivity will lead to more readily available food. In addition to food production, population movements, time of harvest, food storage and consumption of wild foods further determine food availability (Food Security and Livelihoods Handbook, 2020).

Food access implies individuals or households having adequate physical and financial access to food (Mark, 2012). Physical accessibility to food is determined by income, land, product of labour, inheritances, gift and location, while financial access implies having enough resources to purchase the appropriate quantity and quality of food. The indicators include being able to purchase or exchange goods for food, gifted foods and other social mechanisms that affect access. Food utilisation entails food processing and consumption. It refers to what people eat, how much they eat, and how they eat. It also concerns the body's ability to extract the utmost amount of nutrients from consumed food. Food must meet adequate nutritional requirements regarding calories, minerals, and other nutrients required by the body, and people must be able to obtain it regularly (Ojo & Adebayo, 2012). To accomplish this food security pillar, the consumed food has to be safe and sufficient to meet the physiological requirements of each person. Food stability is the steadiness of the other three pillars. It is being able to acquire food over time. It traverses and influences all other food security components. Food may be affordable, available, and efficiently used by individuals, however, this condition must be continuous and constant over time, not just a temporary fluctuating experience. Once any of the first three pillars is absent, there cannot be food stability and, consequently, no food security.

A household is said to have food security when all its members have access to adequate food every time. In other words, a household is regarded as food secure when its inhabitants are not living in hunger or gripped by the fear of starvation (FAO, 2001), while a household is regarded as food insecure when members are unable to afford or have access to quality and quantity of food that makes healthy living at all times (Obayelu & Orosile, 2015). It has been estimated that about 70 per cent of Nigerians in rural households are food insecure, thriving on less than a dollar per day (Akerele et al., 2013) and according to the National Bureau of Statistics (NBS) (Aljazeera, 2020), approximately 40% of Nigerians live in poverty. Also, statistics from the Intelligence Unit of The Economist ranked Nigeria as scoring 38 out of 100, based on its food

security status showing a low-ranking status of the country concerning food security (Owoo, 2020). Based on the Global Hunger Index (GHI) (2022), Nigeria has a GHI score of 27.3 on the severity scale of ≤ 9.9 (low), 10-19.9 (moderate), 20-34.9 (serious), 35 - 49.9 (alarming), and ≥ 50 (extremely alarming) which shows that Nigeria suffers from serious hunger. The effect of the COVID-19 pandemic will likely worsen the condition (Von Grebner et al., 2020).

This study was conceived to add to the existing body of knowledge on the effects of COVID-19 pandemic on food security status of rural households, knowing fully that most of the previous studies were conducted in the midst of the pandemic and due to the restriction and social distancing that characterised the pandemic period, participants were mainly online, leaving out the majority of rural dwellers in Nigeria who have limited or no access to internet facilities. Moreso, the effects of the pandemic on food security pillars might not have been adequately felt during the time, probably, due to the food reserve from previous harvests and other prevailing factors that could intervene in the proper assessment of the situation. The need to ascertain how rural households perceived the effects of COVID-19 on their access to food, availability, utilisation and stability of food after the pandemic necessitated this study. The study examined the knowledge level of respondents on the pandemic itself, their perception of the pandemic and the strategies they put in place to mitigate its effects on their food security with the aim of assessing how they perceived the post COVID effects of the pandemic on the four pillars of food security in the study area. One hypothesis was tested to know if there is significant relationship between selected socio-economic characteristics of the respondents and perceived effects of COVID-19 pandemic on pillars of food security.

METHODOLOGY

The study was carried out in Osun State, south-western Nigeria between the months of November 2021 and January 2022. The State covers an area of approximately 9,251 square kilometres and it is bound in the north by Kwara State, in the east partly by Ekiti State and partly by Ondo State, in the south by Ogun State and in the west by Oyo State. It lies in the coordinates of 7° 30' N and 4° 30' E. The major ethnic group in Osun State is Yoruba with sub-ethnic groups such as Ife, Ijesha. It has a population of 3,416,959 (Federal Republic of Nigeria Official Gazette, 2009). The State is agrarian with 20 out of its 30 local government areas being rural. The people are predominantly farmers with relatively small holding farms. Osun's economy is based mainly on agriculture with food and cash crops which include yams, cassava, maize, cowpea, plantains, cacao, and palm oil among others.

The population for the study comprised all the rural households in the study area. A 4-stage sampling procedure was employed to select respondents for the study. The first stage involved random selection of 20 percent of the 30 Local Government Areas (LGAs) in the state, translating to six LGAs followed by proportionate selection of 20 percent of the wards (2 wards) from each of the selected LGAs making a total of 12 wards. The next stage involved random selection of 2 rural communities from each ward while at the last stage 13 households were randomly selected from each of the communities to give a total of 156 rural households and the head of each household was purposively selected for interview which gives a total of 156 household heads as shown in Table I. Data collection for the study was done using a well validated and structured interview schedule containing questions relevant to the study's

objectives. Data were evaluated and analysed using descriptive statistics such as percentages, means, frequency counts, and standard deviation, while Pearson correlation analysis was used for the inferential purpose.

The dependent variable for the study was the perceived effects of COVID-19 pandemic on the four pillars of food security. Respondents were asked to respond to 24 statements related to how they perceived the effects of COVID-19 on each of the four pillars of food security (availability of food, access to food, utilisation and stability of food) using a 5-point Likert scale-rating to indicate whether they Strongly Agreed (5), Agreed (4), Undecided (3), Disagreed (2) or Strongly Disagreed (1) for the positive statements and vice versa for the negative statements. The total maximum and minimum obtainable scores were 120 and 24 respectively. An equal interval was used to categorise the perceived effect as high, moderate and low (i.e., 120-24 =96/3=32). Respondents with perceived effect scores equal to 32 and below were categorised as those that perceived that the effect was low, those with scores between 33 and 64 were categorised as moderate, while those with scores above 64 were categorised as high. The respondents' knowledge of the COVID-19 pandemic was examined using indicators such as their awareness of the pandemic, its incubation period, symptoms, mode of transmission and preventive measures. Their level of knowledge on the pandemic was determined by the number of accurate responses they were able to give to 27 parameters related to the pandemic. Their perception of the pandemic was also examined using a 5-point Likert scale rating to indicate whether they strongly agreed (5), Agreed) (4), Undecided (3), Disagreed (2) or Strongly Disagreed (1) to the positive perception statements and vice versa for the negative statements related to the pandemic. Mean and standard deviation was used to categorise their perception into right, indifferent and wrong. Strategies used by respondents to mitigate the effect of COVID-19 pandemic on their households' food security pillars were measured on four points Likert-like scale of Never Used (0), Sometimes Used (1), Often Used (2), Always Used (3) to determine their level of usage.

Table I. Sample selection

Local Government Area	**Number of wards**	**Number of selected wards**	**Communities selected/ward**	**Number of selected households**
Ife East	10	2	Koola	13
			Iyanfoworogi	13
Atakunmosa West	11	2	Osu	13
			Ifewara	13
Ede South	10	2	Sekona	13
			Owode	13
Irepodun	10	2	Erin	13
			Ilobu	13
Aiyedaade	11	2	Gbongan	13
			Odeomu	13
Isokan	11	2	Ikoyi	13
			Apomu	13
Total		12	12	156

Source: Computed from field survey, 2022

RESULTS AND DISCUSSION

Respondents' Knowledge of COVID-19 pandemic

Results in Table II showed that all (100%) of the respondents heard about COVID-19 pandemic, and the majority (92.9%) knew it was more than the common flu, which implies that they were well aware of the pandemic. This conclusion is in line with Olugbenga et al. (2020), who stated that most respondents were aware of COVID-19 infection. The majority (93.6%) knew that the incubation period for COVID-19 before showing symptoms in humans is between 1-14 days. The majority (98.1%) also knew the pandemic could infect anyone. Respondents identified multiple symptoms of COVID-19 pandemic, with all (100%) identifying dry cough, high fever, and difficulty breathing, while a majority (99.4% and 75.0%) also identified runny rose bleeding, respectively. This implies that the majority had good knowledge of the multiple nature of the symptoms of the pandemic. Respondents also identified multiple modes of transmitting the pandemic. These include sneezing/coughing (98.7%), close contact with the carrier (92.9%) and contact with a contaminated surface (75%). This implies that the majority were knowledgeable about the mode of COVID-19 transmission. This aligns with the discoveries of Rine et al. (2020), who stated that the people in the North-central Nigeria where they conducted their study had good knowledge about the transmission routes, incubation period and symptoms of COVID-19. Also, all (100%) of the respondents indicated washing of hands with soap and water, wearing nose masks, and social distancing, while a majority (98.7% and 95.5%) indicated cleaning surfaces with chlorine and use of alcohol-based sanitisers hand cleaning, respectively as the ways of preventing the spread of the pandemic. This implies that the majority of the respondents knew the preventive measures. This corresponds with the findings of Olugbenga et al. (2020), who reported that more than half of their respondents had a sound knowledge of the precautionary measures for COVID-19. The majority (76.9%) of the respondents also knew that the correct duration for hand washing was 20 seconds, according to NCDC's (2020) recommendation.

The result showed further that 57.7 percent of the respondents were highly knowledgeable about the pandemic, some (28.2%) were moderately knowledgeable, while few (14.1%) had low knowledge of the pandemic. The finding implies that the majority of the respondents had adequate knowledge of the COVID-19 pandemic. The observation indicates that the various public enlightenment programmes employed by both government and non-government agencies to curb the spread of the virus were able to reached the rural dwellers. This finding agrees with Akafa (2021), who reported that the majority of their respondents had good knowledge about the COVID-19 pandemic.

Table II: Knowledge of respondents on COVID-19 pandemic

Knowledge parameters	Frequency	Percentage	Mean	Standard dev.
Awareness on COVID-19				
Heard about COVID-19	156	100		
COVID-19 is the same as common flu	11	7.1		
Incubation period				
1-14 days	146	93.6		
15-21 days	4	2.6		
1-3 months	6	3.8		
Who can get infected?				
Anyone can be infected	153	98.1		
Older people only	2	1.3		
Teenagers and children	1	0.6		
People with chronic disease	0	0		
***Mode of transmission**				
Air-droplets from sneezing/coughing	154	98.7		
Close contact with the carrier	145	92.9		
Contact with contaminated surfaces	117	75.0		
Transmission through mosquitoes	76	48.7		
***Preventive measures**				
Social distancing	156	100		
Wearing nose mask	156	100		
Clean surfaces with chlorine	154	98.7		
Hand sanitizers	149	95.5		
Duration of hand washing				
20 seconds	120	76.9		
Less than 5 seconds	4	2.6		
Level of knowledge				
Low level (24.0 and below)	22	14.1	25.50	1.67
Moderate level (25.0-26.0)	44	28.2		
High Level (27 and ab6ve)	90	57.7		

***Multiple responses
Source: Computed from field survey, 2022

Perception of respondents about COVID-19 pandemic

Results in Table III showed that respondents agreed that COVID-19 can be prevented through hand washing and social distancing (mean= 4.33) and that COVID-19 is a deadly disease (mean= 4.32). This could reflect their knowledge about the pandemic through the persistence of enlightenment on radio and media. This finding corresponds with Olapegba et al. (2020), who revealed that regular hand washing and social distancing are the most common preventive measures and that many people know that COVID-19 is deadly. The results showed further that the respondents agreed that people showing the symptoms are considered COVID-19 carriers (mean= 3.89) and that COVID-19 is a rich man disease (mean= 3.81). This could reflect respondents' belief that those infected by the virus belonged to a high social rank in line with Ilesanmi and Afolabi (2020), who named the disease as that of the rich and mighty.

On the other hand, the respondents disagreed with the statement that COVID-19 does not exist (mean=4.27), aligning with Udomah et al. (2020), who explained that almost all their respondents agreed that COVID-19 is a disease that exists globally. However, the finding contradicts the findings of Umaru et al. (2020), who revealed in their study as perceived by the people in Kano state of Nigeria that COVID-19 is not real and believed that it does not exist. Also, respondents disagreed with the statements that COVID-19 is an older people's disease (mean= 3.92), COVID-19 cannot survive in Nigeria (mean= 3.81), and COVID-19 is a manmade disease (mean= 3.73), while most of them were undecided on whether COVID-19 is God's punishment (mean= 3.44) and whether COVID-19 can be cured (mean= 3.22).

Based on the cumulative perception scores of the respondents, the result in Table III showed further that some (30.1%) of the respondents had the right perception of COVID-19 pandemic, while more than half (53.2%) had an indifferent perception, and few (16.7%) had a wrong perception of the pandemic. This implies that many rural dwellers had a neutral judgement towards COVID-19 pandemic. This is similar to the findings of Famakinwa et al. (2023) who reported that rural households in Edo State, Nigeria had indifferent perception about the pandemic.

Table III: Respondents' perception about COVID-19 pandemic

Perception statements	**S.A. %**	**Agree %**	**Und. %**	**Disagree %**	**SDis. %**	**Mean**
COVID-19 can be prevented through hand washing and social distancing	35.9	62.8	0.6	0	0.6	4.33
COVID-19 is a deadly disease	35.3	62.8	0.6	1.3	0	4.32
COVID-19 does not exist	2.6	11.5	0	28.2	57.7	4.27
COVID-19 is an old people disease	0.6	11.5	1.3	68.6	17.9	3.92
People with symptoms are the COVID-19 carriers	14.7	69.9	7.1	7.1	1.3	3.89
COVID-19 is a rich man disease	4.5	8.3	5.8	64.7	16.7	3.81
COVID-19 cannot survive in Nigeria weather	1.3	12.8	7.1	61.5	17.3	3.81
COVID-19 is a man-made disease	0.6	14.1	12.2	57.7	15.4	3.73
COVID-19 is God's punishment	0.6	21.2	17.3	55.8	5.1	3.44
COVID-19 can be cured	28.2	67.9	1.9	1.9	0	3.22
Perception categories	**Freq.**	**%**	**Mean**	**S.D**		
Right (43.0 and above)	47	30.1				
Indifferent (37-42)	83	53.2	39.74	3.47		
Wrong (36.0 and below)	26	16.7				

S.A- Strongly Agree; Und.- Undecided; S.Dis.-Strongly Disagree
Source: Computed from field survey, 2022

Strategies put in place to mitigate the impact of COVID-19 pandemic on rural households' food security

Result in Table IV showed that prevention of food wastage (mean=2.08) was the only strategy respondents often used to mitigate the effect of COVID-19 pandemic on their households' food security. On the other hand, they sometimes used strategies like skipping meals (mean=1.04), engaging in backyard farming (mean=0.89), use of fertilizer to increase yield (mean=0.83), engaging in non-farm activities (mean=0.76), use of early maturing varieties of crop and animals (mean=0.73), intensive use of family labour (mean=0.73), borrowing money from relations and friends (mean=0.69), use of high yielding crop varieties (mean=0.64) and purchasing food on credit (mean=0.56) while getting palliatives from government/family (mean=0.15) was never used. The finding implies that respondents used multiple strategies to cope with the effect of the pandemic. These findings agree with Daudu et al. (2020), who reported that strategies used by household heads during COVID-19 lockdown include cutting down on food expenditure, engaging in home gardening, purchasing food on credit, reducing the number of times household members eat daily and borrowing money from friends and relatives.

Table IV: Strategies used in mitigating the effect of COVID-19 pandemic on rural households' food security

Strategies	Mean
Prevention of food wastage	2.08
Skipping of meals	1.04
Households engage in backyard farming	0.89
Use of fertilizer to increase yield	0.83
Households engage in non-farm activities	0.76
Use of early maturing varieties of crop and animals	0.73
Intensive use of family labour for production activities	0.73
Borrowing money from relations and friends	0.69
Use of high yielding varieties of crop	0.64
Purchasing food on credit	0.56
Getting palliatives from government	0.15

Source: Computed from field survey, 2022

Perceived effects of COVID-19 pandemic on pillars of food security

Results in Table V showed how respondents perceived the effects of COVID-19 pandemic on food availability, food accessibility, food utilisation and food stability. They perceived that COVID-19 pandemic caused situations that negatively affected food availability as it hindered transportation of farm produce (mean= 4.26), caused high cost of agricultural inputs (mean= 4.12), hindered transportation of agricultural inputs from one place to another (mean= 4.14), exposed farmers to health challenges (mean= 4.06), reduced rural households' access to agricultural credit (mean= 3.68) and reduced availability of farm labour (mean=3.64). The finding implies that respondents perceived that COVID-19 pandemic seriously disrupted food availability of rural households in the study area. This is because all their responses were pointing to reduction in agricultural productivity as a result of the pandemic, whereas, Bene et al. (2015) opined that increased productivity is a precondition to make food more readily available.

With regards to food accessibility, the results showed that respondents strongly agreed that the pandemic caused hike in prices of food items (mean= 4.75), reduced households' income (mean= 4.51) and caused limited supply of food items to the market (mean= 4.03). In addition, they disagreed to the statements that government provided palliatives for rural households (mean= 2.24) and that humanitarian assistance were received from family and friends (mean= 2.01). Based on these responses, the finding implies that rural households perceived that COVID-19 pandemic has reduced the various avenues that could enhance their access to food. For instance, with hike in food prices and reduced income, the households' purchasing power would be drastically reduced resulting to limited access to food. Food access as described by Mark (2012), is a situation when households have adequate physical and financial access to food, hence, their responses showed a negative perceived effect of the pandemic on their access to food.

Furthermore, the respondents perceived that the pandemic affected what they eat, how much they eat, and how they eat, as they strongly agreed that it forced them to manage whatever food that was available (mean= 4.63) and agreed that it made them to consume mostly starchy food (mean= 4.26) and caused their inability to take three square meals (mean = 3.67). They equally disagreed to the statements that they eat to their satisfaction (2.03) and that they eat balanced diet (1.94). The implication is that the pandemic seriously minimised their food utilization because

according to Ojo and Adebayo (2012), for a household to lay claim to food utilization, the food they consumed must meet adequate nutritional requirements in terms of the various nutrients required by the body and on a regular basis. Also, the result revealed that respondents perceived that the pandemic have effects on their ability to acquire food over time as they disagreed to statements that they have access to quality food at all times (mean= 1.90), able to purchase sufficient, adequate and quality food at all times (1.79), produced sufficient, adequate and quality food at all times (1.75), received sufficient, adequate and quality food as gifts at all times (1.65) and strongly disagreed that sufficient, adequate and quality food was stored before COVID-19 pandemic (mean= 1.33). It implies that the pandemic has negative effect on their food stability. Since the pillars of food security are interrelated and work as a system as described by Kent et al. (2022), it is not unexpected that once a pillar was affected it would definitely affect the others; hence summarily, the findings imply negative perceived effects of the pandemic on the rural households' food security.

Table V. Perceived effect of COVID-19 pandemic on pillars of food security

Food security pillars	**Mean**	**Stand. dev.**
Food availability		
COVID-19 pandemic hindered transportation of farm Produce	4.26	0.77
COVID-19 pandemic hindered transportation of agricultural inputs (fertilizers, pesticides, seeds etc)	4.14	0.86
COVID-19 pandemic caused high cost of agricultural input	4.12	0.88
COVID-19 pandemic exposed farmers to health challenges which hindered food supply to the market	4.06	0.76
COVID-19 pandemic reduced rural household access to agricultural credit	3.68	0.59
COVID-19 pandemic reduced availability of labour	3.64	0.91
COVID-19 pandemic changed agricultural production pattern	3.39	0.96
Food accessibility		
There is hike in prices of food as a result of the pandemic	4.75	0.43
There is reduction in households' income due to COVID-19 pandemic	4.51	0.85
There is limited supply of food items to the market due to COVID-19 pandemic	4.03	0.72
Government provides palliatives for rural households	2.24	0.90
Humanitarian assistances were received from family/neighbours	2.02	0.89
Food utilization		
Household members manage whatever food that is available	4.64	0.59
Household members consume mostly starchy food	4.26	0.79
Household members unable to take three square meals	3.67	0.97
Household members eat to their satisfaction	2.03	1.07
Household members eat balanced diet	1.94	0.77
Food stability		
Household members have access to quality food at all times	1.90	0.63
Household members are able to purchase sufficient, adequate and quality food at all times	1.79	0.60
Sufficient, adequate and quality food are produced for household members at all times	1.75	0.68

Sufficient, adequate and quality food were received as gifts at all times	1.65	0.55
Sufficient, adequate and quality food were stored by household members before the pandemic	1.33	0.55

Source: Computed from field survey, 2022

Level of the pandemic perceived effects on pillars of food security

The result in Table VI showed that the majority (89.1%) of the respondents perceived that the pandemic seriously affected the pillars of food security in the study area, while few (10.9%) perceived the effects to be moderate and none perceived the effects to be low. The findings imply that the majority of the rural households in the study area might have become food insecure based on their perceived effects of the COVID-19 pandemic. This agrees with the findings of Egwue et al. (2020), who reported that the majority of the households they studied were food insecure and Amare et al. (2020), who also reported that most of the households in their study area experienced a significant increase in measures of food insecurity as a result of the pandemic.

Table VI. Level of the pandemic perceived effect on pillars of food security

Level of perceived effect	Frequency	Percentage	Mean	Stand. dev.
High level (above 64)	139	89.1		
Moderate level (33.0-64.0)	17	10.9	75.30	4.75
Low level (32.0and below	-	-		

Source: Computed from field survey, 2022

Result of hypothesis test for significant relationship between selected socio-economic characteristics and the effect of COVID-19 pandemic on pillars of food security.

The result in Table VII showed that at $p< 0.05$, there was a negative but significant relationship between the perceived effect of COVID-19 pandemic on pillars of food security and household size ($r= -0.17$). This implies that household size influences how rural households perceived the effect of the pandemic on pillars of food security in the study area; that is, the larger the household size, the more the effect is negatively perceived and vice versa for those with smaller household size. Furthermore, this finding agrees with Egwue et al. (2020), who reported that household size had a negative impact on food security.

Table VII: Results of Spearman correlation analysis showing relationship between selected socio-economic characteristics of the respondents and perceived effects of COVID-19 pandemic on pillars of food security

Socio economic variables	Correlation (r)	P-value
Age	-0.13	0.87
Household size	-0.17*	0.04
Income before COVID-19 pandemic	0.01	0.89
Income during COVID-19 pandemic	-0.04	0.46

*Significant at $P\leq 0.05$

Source: Computed from field survey, 2022

CONCLUSIONS

The study revealed that rural households in the study area had a good understanding but neutral perception of the COVID-19 pandemic itself while they employed multiple strategies to cope during the pandemic. Their post-pandemic perspective of the pandemic showed that it seriously affected the pillars of food security and, by implication, their food security. Household size had a negative implication on the perceived effects of the pandemic. To recover from the various effects and prevent acute food shortage in the nearest future, there is the need for relevant policies that will effectively enhance rural households' food security. For instance, relevant government agencies at the three tiers should deliberately develop responsive packages capable of cushioning the pandemic's effect, including but not limited to provision of palliatives and subsidies on agricultural inputs. Financial institutions should also provide agricultural loans to farmers at affordable interest rates.

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