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Urban Food Security During Covid-19: Households Access to Food in High, Middle and Low Income Neighborhoods in Minna - Niger State, Nigeria

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Abstract

One of the key drivers of the 2030 Agenda for sustainable development is access to food which remains a global concern and a topic of debate at global level more importantly during the outbreak of Coronavirus disease (COVID-19) in urban communities. This paper focused on a cross-sectional study of access to food among urban households in high, middle and low income neighborhoods in Minna - Niger State. A simple random sampling technique was used to select 30 households for the study while the data collected through questionnaires were analyzed using descriptive statistics. Thematic analysis was employed on interview and observation data. In this study, findings revealed that only 43 % of the sampled households had physical access to food during covid-19 pandemic. The cross-sectional analysis revealed that only 10 % of the households living in low-income neighborhood were able to accessed food during the pandemic compared to household 70 % and 50% in middle and high income neighborhood respectively. Findings also revealed that 100% of low-income households had no stable access to food sources during the pandemic compared to 60% and 40 % in middle and high-income neighborhood who claimed not to have stable access to their food source during the pandemic. This study indicates that the urban households in low-income neighborhoods were more exposed to the pandemic and threatened by food insecurity compared to the middle and high income households. Thus this paper recommends a safety net program with a special focus on urban poor so as to ease the urban household food insecurity that arise from shocks of COVID-19 pandemic and another public health crisis and pandemics that may likely happen in the future.

Keywords: Urban households, food security, Covid-19, pandemic, food

INTRODUCTION

COVID-19 is a global catastrophe that has more severe impacts in middle and low income countries without the exemption of Nigeria. In order to contain the transmission of COVID-19 the Federal Government of Nigeria jointly with the thirty-six (36) state governments implemented preventive measures in two main areas (Omaka-Amari et al., 2020). The first is a total of eight travel and mobility measures. These included travel ban, closure of land borders, total lockdown, mandatory screening of vehicles and cargo drivers, overnight curfews, and reduction of number of passengers on public transport vehicles. Second, hygiene and sanitation measures were enforced. The hygiene and sanitation measures were four, namely social distancing, use of nose masks, practice of hand washing, and use of hand sanitizers. These pandemic preventive measures implemented in the country helped to prevent the spread of COVID-19 infection. However, the success of the preventive measures contributed to huge losses in the agricultural sector, a reduction in economic power, and labor shortage for agricultural production (Ilesanmi et al., 2021). The pandemic outbreak was in urban areas from where it spread quickly to communities in the urban fridges and outwards to rural areas. The corresponding government enforcement of response travel and mobility as well as hygiene restrictions were most intense in urban areas (Abay et al., 2020), while its impact differs by geography and type of household (Amjath-Babu et al., 2020). A study by Amare et al., (2021) on COVID-19 and food security reveals that lockdown measures in Nigeria led to deteriorated food security among poorer households, people living in remote and

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conflict-affected zones and households relying on non-farm businesses.

This work is therefore a study on access to food among different classes of urban neighborhoods during COVID-19 pandemic in Niger State, Nigeria in order to inform appropriate policy instruments that can secure continuous access to food by all urban households during and in post-pandemic era.

This paper focuses on understanding access to food among different classes of urban neighborhoods during COVID-19 pandemic. It begins with an introduction, which is followed by review of published literature on concepts, principles and practices which theoretical framework that inform accessing food by households in urban neighborhoods. Methods that were used to collect data for the articles in the Minna town follow before results of data are presented. Discussions of the findings on ways high, middle and low-income segment of the population accessed food before, during covid-19 pandemic and soon after is also presented. The papers end with conclusion from the discussion and recommendations.

THEORY

Classification of Urban Neighborhoods

Neighborhoods can be conceptualized using the physical traits or qualities of the locations. In terms of functional conceptualization, neighborhoods can develop to fulfill particular functions that give them a distinct character. Many neighborhoods in Nigerian cities have multiple functionalities, including residential, industrial, tourism, recreational uses etc. The size and population, of each Nigerian neighborhood vary from one another. Slums and other areas of high residential neighborhoods associated with low-income residents, concentrated poverty, and a dearth of essential services. Low Density residential neighborhoods is occupied with high incomes earners in areas such as Government Reserved Areas (GRA) or Gated Residential Areas, which represent increased wealth or affluence, and better services, such as electrical and water networks, electricity, adequate security, a good road system. Medium density residential neighborhood is characterized by the occupation of middle income earners with necessary basic facilities provided and lastly the High Density residential area, characterized by inadequate planning and utilities, high population density and poor environmental conditions, is dominated with low income earners.

Nexus between Covid-19 and Food Security

The sudden emergence of coronavirus disease (COVID-19) has affected the entire global system in an unprecedented manner with severe impact on global health outcomes, food systems and household food security (Syafiq, Fikawati and Gernily, 2020). Similarly, the global implementation of travel restriction as a preventive measure to contain the spread of Covid-19 had also generated layers of adverse effects on food security, and the overall functioning of food systems (Barrett, 2020 and Swinnen, 2020).

Presently, COVID-19 pandemic has destabilized food supply chains and also trigger instability in food prices (FAO, 2020), thus putting 270 million people at the risk of acute food insecurity due to loss of income, and disruption of food systems (WFP, 2020). According to FAO (2008), household food security can be assessed in four (4) dimensions namely availability (physical availability of food), accessibility (economic and physical access to food), stability (stability of food availability and food utilization over time), and utilization (dietary quality which ensures suitable selection and preparation of food). Jafri et al. (2021) noted that lack of access to food especially among vulnerable household could be as a result of loss of income and rising cost of food. In Nigeria, the study of Obayelu et al., (2021) found that the COVID-19 pandemic has destabilized the Nigerian food systems thus weakening availability of, and access to food.

Balana et al., (2022) notes that provision of livelihoods capital and social networks determines the level of vulnerability to shocks and effects of the shocks on food security of the households. An empirical study reveals that economic shocks in the context of loss or decline in income have adverse effect on household food security (Rufai et al., 2021) while the poor and vulnerable households are the most affected (Obayelu et al., 2021; and Ogunmodede et al., 2020). Mbugua and Nzuma (2020) has suggested that the ability of a household to produce its own food and its financial capacity to purchase foods in developing countries influences its food security. Mbugua and Nzuma (2020) also observed that the strength of

social networks and bonds between a household and the community where it belongs minimizes the severity of food insecurity in times of shocks.

Empirical study reveals that food insecurity in Nigeria is primarily access-driven. Food access is the capacity of people or households to obtain adequate quantity(s) and quality of food to satisfy all members of the household's dietary needs (Langsworthy et al., 2003). Odusina (2014) assessed households' food access and food insecurity in low, medium and high population density areas of Lagos-Nigeria during hunger and harvest period. In his study, Odusina (2014) found that the percentage of food insecure households rose by about 50% in the low-income Agege settlement area during the hunger period following the harvest period; the percentage of food insecure households increased by 30% in the medium-income Surulere; and, by about 45% in the high-income Ikoyi settlement area.

Considering the nature of shocks posed by COVID-19, which is likely to affect every household in both urban and rural community, the severity of the shocks on urban household among high, middle and low-income households remain undocumented partly because the pandemic containment measures have been relaxed and countries are now dealing with post-pandemic realities. Against this backdrop, this study examines access to food among urban households living in high, middle and low income neighborhoods in Minna - Niger State.

RESEARCH METHODS

The Study Area

This study is carried out in Minna a city in Middle belt of Nigeria on latitude 9.5835546 of the equator, and longitude 6.5463156 of the Greenwich meridian and elevation of 251meters above the sea level. It is the administrative capital of Niger State **Figure 1**.

Minna is located 151 km away from Abuja, the Federal Capital Territory of Nigeria. The Gbagyi people who are indigenous population in the area are known for their (conservative African culture that has promoted farming) which made them gain prominence since the creation of the state in 1976. Due to rapid urbanization and development of urban infrastructure and services such as the development of Kano-to-Baro railway, extension of the Lagos-to-Jebba line, Federal University of Technology in Minna, Teachers Training College, Radio Broadcasting Centre, Stadium, housing estates, Bosso Dam, Chanchaga Dam, among other complementary developments, the city has witnessed increase in urban population [Niger State Urban Policy Diagnostic Report 2020). As at 1970, the population of Minna was about

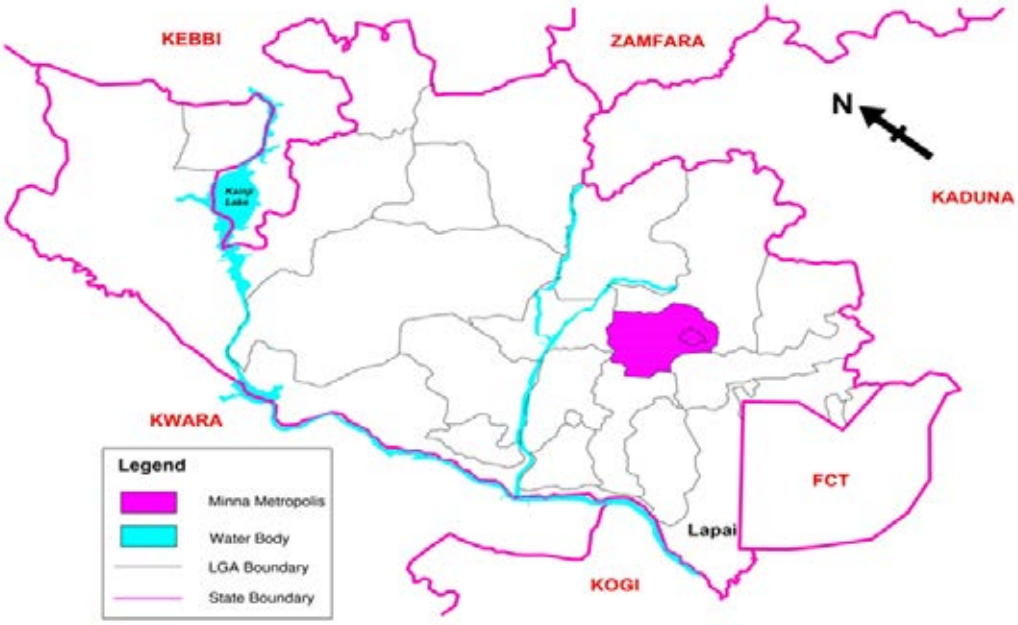

FIGURE 1
Location of the Study Area: Minna Metropolis in Niger State Context
Source: Authors Digitized Map, 2022

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30,000 (Maxlock, 1980) and this increased to about 78,480 in 1979 barely three years after the creation of the state. The population of Minna further grew to 192,413 in 1991 to 287,608 in 2006 (National Population Commission, 2006), 360,000 in 2015 and 506,000 in 2017 (Niger State Bureau of Statistics, 2017). Administratively, Minna covers 2 Local Government Areas (LGAs) namely Bosso Local Government Area and Chanchaga Local Government Area with an area of 1679.5 square kilometers. There are four major access routes to the City of Minna, including; Bida, Suleja, Gwada and Beji Roads which connect the city to several other towns and cities in Niger State. The city is also connected to other part of Nigeria by the Lagos-Kano Nigerian railway line and Minna Airport serves as a hub for air transport to other part of Nigeria and beyond.

Approach of Data Collection and Sampling Technique

Field survey method was used to identify, access and collect data. Primary and secondary data was collected for the study. Household and key informant questionnaires were used to collect the primary data. The secondary data was collected through review of policy documents of Federal and State governments, pamphlets, laws, newspaper articles, retrieval from internet sources on Covid-19 containments measures in Nigeria. Three categories of urban neighborhood namely, High (unplanned), Middle and Low-Income (planned) Neighborhoods were purposively selected for the study. Ten household were randomly selected from each of the 3 Urban Neighborhoods. Therefore a total of 30 respondents were used for the study **(Table 1).**

Method of Data Collection and Data Analysis

Primary data for the study was collected with the aid of questionnaire administered to the household heads at the selected urban neighborhoods. Data were collected over a period of one week by the authors and trained enumerators. Data were collected on household socio-economic characteristics and access to food in the neighborhood during covid-19 lockdown. The data collected were analyzed and presented in tables, percentages, and illustrative maps. This method was employed because of its' simplicity in analyzing data and easy differentiation of result according to percentage share of each.

RESULTS

Socio-Economic Characteristics

The gender, age and marital status analysis as shown in **Table 2,** revealed that the majority of the respondents were male (81per cent), while the female are 19 %. The result of the gender analysis does not truly reflect the gender ratio in the study area; but indicates that male respondents were more available for interview. The **Table 2** also shows that 97% of the respondents were married while 3 per cent are single. In education attainment, all the respondents had formal education ranging from 60 per cent with tertiary education to 31 per cent with post-secondary education. Others include 6 per cent with secondary education and 3 per cent with primary education. The mean age of the all the respondents interviewed is 50 years.

Furthermore, the majority (53 per cent) of the sampled urban households were in full-time salary employment; 13 per cent were self-employed, 3 per cent are in part-time salary employment, 6

TABLE 1
Showing sample distribution

Neighborhood Category	Neighborhood	Sample Size by Category of Neighbourhood	
		No.	%
High Income	GRA	5	16.7
	Bosso Estate	5	16.7
Middle Income	Talba Estate	5	16.7
	M.I. Wushishi Estate	5	16.7
Low Income	Kpagungu	5	16.7
	Bosso Town	5	16.7
Total		**30**	**100**

Source: Authors, 2022

per cent are unemployed while 25 per cent were engaged in other occupations. Out of 25 per cent that were engaged in other types of occupation, 75 per cent were retired civil servants while 12.5 per cent work as community vigilante groups and the other 12.5 per cent work at a barber shop.

Physical Access to food Prior Covid-19

To better understand the variation associated with physical access to food prior covid-19, households in all the three categories of neighborhood were asked the location where they usually purchase household food items. The response is contained in **Table 3**. For High-income neighborhood, households purchase food items from designated local authority markets, neighbourhood stores, and supermarkets. For Middle-income neighbourhood, households buy food items from designated local authority markets and neighbourhood stores while the low-income neighborhood purchase food items from designated local authority markets and the neighbourhood informal food vendors.

Household Access to Food during Covid-19 Pandemic

The proportion of urban households with physical access to food is presented in **Table 4.** Results revealed that majority (57 per cent) of sampled households did not have physical access to food during Covid-19 pandemic while 43 per cent of the households were able to access food during the period.

Stability of food availability

Analysis of stability of food availability as presented in **Table 5** shows that all the sampled households 67 per cent of the urban households did not have stable access to food source during the pandemic while 33 per cent had stable access to food during the period.

TABLE 2

Characteristics of the sampled households

Characteristics	Sampled Respondents	
	No	Percentage (%)
Gender		
Male	24	81
Female	6	19
Total	**30**	**100**
Marital Status		
Single	1	3
Married	29	97
Total	**30**	**100**
Education Level		
Primary	1	3
Secondary	2	6
Post-secondary	9	31
University	18	60
Total	**30**	**100**
Occupational status		
Self-employed	4	13
Full-time salary employment	16	53
Part-time salary employment	1	3
Unemployed	2	6
Others	8	25
Total	**30**	**100**

Source: Field Survey (2022)

TABLE 3
Household physical access to food prior Covid-19

Household category	Location of purchase of household food
High Income Neighborhood	• Designated Local Authority Markets • Neighbourhood Stores • Supermarkets
Middle Income Neighborhood	• Designated Local Authority markets • Neighbourhood Stores
Low Income Neighborhood	• Designated Local Authority markets • Neighbourhood informal food vendors

Source: Authors, 2022

TABLE 4
Household Physical Assess to food

Physical Access to Food	Physical Access to Food Across different Neighborhood Densities							
	Low		Middle		High		Total	
	No	%	No	%	No	%	No	%
Yes	1	10	7	70	5	50	13	43
No	9	90	3	30	5	50	17	57
Total	10	100	10	100	10	100	30	100

Source: Authors, 2022

TABLE 5
Stability of food availability

Stability of Food Availability	Stability of Food availability across different Neighborhood Densities						Total	
	Low		Middle		Income			
	No	%	No	%	No	%	No	%
Yes	0	0 %	4	40	6	40	10	33
No	10	100	6	60	4	60	20	67
Total	10	100	10	100	10	100	30	100

Source: Authors, 2022

TABLE 6
Access to variety of food

Access to Variety of Food	Access to variety of Food across different Neighborhood Densities							
	Low		Middle		High		Total	
	No	%	No	%	No	%	No	%
Yes	0	0	8	80	4	10	12	40
No	10	100	2	20	6	60	18	60
Total	10	100	10	100	10	100	30	100

Source: Authors, 2022

Access to variety of food

As at the time the household survey was carried out, majority (60 per cent) of the total sampled households reported not to have access to variety of food during the COVID-19 lockdown. This outcome shows that the quantity and quality of food consumed by urban households in Minna have been impacted negatively.

DISCUSSION

The spread of COVID-19 pandemic and its containment measures have destabilized food supply chains and also cause food insecurity in different countries more importantly in the urban areas where the virus emerged. Thus this paper has examined issues relating to urban food security during covid-19 in an urban community in Niger State, Nigeria.

Household Access to Food during Covid-19 Pandemic

In Niger State, the travel and mobility measures (lockdown order and curfews) implemented has been found to have significant impact on access to food by urban households. Basically, the transportation of food items from rural farms to the markets were hindered as a result of travel and mobility restrictions put in place. Similarly, the closure of markets as a measure to prevent the transmission of COVID-19 has significant impact on households' food security. However, this study found that majority (57 per cent) of urban households did not have physical access to food during Covid-19 pandemic. The study also found that only 10 per cent of the urban households living in low-income neighborhood had physical access food during the pandemic compared to 70 per cent in the middle-income neighborhood. Meanwhile, there are an equal proportion of households who had physical access to food and those who did not have in the high-income neighborhood. This study indicates that the urban households living in low-income neighborhoods experienced higher exposure to the pandemic and food insecurity. "The pandemic really affected food supply because of the restrictions put in place, thus accessing the food from the market was a nightmare" (Transcribed Interview at Bosso Town, 2022).

Stability of food availability

Stability of food availability is also recognized as one of the key variables that affects food security. Findings from this study showed that during covid-19 pandemic, majority (67 per cent) of households do not have stable access to food. Similarly, the study found that all households (100 per cent) living in low-income neighborhood do not have stable access to food source during the pandemic while majority (60 per cent) of the households living in middle -income neighborhood reported not to have stable access to food. Also 40 per cent of the households living at the high-income neighborhood also claimed that they do not to have stable access to food during the period. From this cross-sectional analysis, this research found that only households living in high-income neighborhood have low exposure to the shocks of Covid-pandemic more importantly in the aspect of access to food. This may be attributed to the fact that the high-income households has access to food commodities from different options compared to household living in low and middle income neighborhoods. "As a result of the lockdown, we hardly had enough food stuff to buy, even if when you had the means of buying it" (Transcribed Interview at Bosso Town, 2022).

Access to variety of food

As COVID-19 containment measures lingers, the flow of varieties food commodities (perishable and non-perishable) between and within urban areas became a challenge thus affecting access to variety of food by urban and rural households. The study revealed that all the households (100 per cent) living in low-income neighborhood of Minna does not have access to varieties of food during the pandemic. 60 per cent of households in high -income neighborhood also reported not to have access to varieties of food during the same period while only 20 per cent of the households at the middle-income neighborhood claimed lack of access to varieties of food during the pandemic. "As a Gbagyi man I enjoy eating pounded yam, but because I can't regularly get yam from farm or at the market I changed my diet to rice and some other food available during that period". (Transcribed Interview at Bosso Town, 2022); "We eat anything available; because we couldn't get fresh farm products" (Transcribed Interview at Bosso Estate, 2022).

The study has shown that disruption in food supply chain has negative impact on household food security. Similarly, this study also found that the Covid-19 hits the urban households more in

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Niger State however the low-income households were more exposed to the shocks and severity of food (in)security during the COVID-19 pandemic. This study however establishes that the main cause of variation in access to food among urban households during the COVID-19 pandemic may be attributed to the fact that prior the pandemic, households living in low-income neighborhoods largely purchase food items at some designated local authority markets and as a result of mobility restrictions, they were unable to go the market to buy food commodities compared to household living in middle and high income neighborhood who has options of accessing food at neighborhood stores and supermarkets.

CONCLUSION AND RECOMMENDATIONS

Although Covid-19 pandemic is gradually disappearing, however, its impacts on cities and urban households is likely to last for decades to come. Based on the research outcome in Minna Niger State in Nigeria and cross-sectional analysis of access to food in high, middle and low-Income households, this study provides a nuanced understanding of food (in) security among categories of urban neighborhoods. This study found that the detection and spread of the corona virus, as well as mobility restrictions 'curfews and lockdown' enforced, had varying impacts on food security in different categories of urban neighborhoods. In our study, we found that urban households living in low income neighborhoods were more exposed to severe food insecurity than those living in middle and high-income neighborhoods. In practical terms, households living in low income neighborhoods had little or no access to food 'physical access to food, access to variety of food, and food stability' during the covid-19 pandemic compared to middle and high income urban households. The findings of this study is consistent with a review of literature (Béné 2020) indicating that poorest households mostly feels the impacts of the pandemic with direct effects loss of income and access to food.

Despite the effort of the Niger State Government to contain the spread of Covid-19, findings from the research revealed that Covid-19 pandemic posed significant threat to urban food security with huge impacts on low-income households that bore the largest burden. Based on these findings, this paper has suggested three areas of policy interventions (propositions). First, a safety net programs should be activated with a special focus on urban poor so as to ease the urban household food insecurity that arise from shocks of COVID-19 pandemic and another public health crisis and pandemics that may likely happen in the future. Second, there is need to establish an efficient communication platform to aid direct linkage and flow of food commodities from the farmers or food transporters to the urban household to ensure continuous flow of food commodities across urban-rural continuous and strengthen urban household food security. Finally, in the face of similar crisis, food supply chains should be protected by giving special consideration to continuous transportation of food commodities. The food market should also be kept opened and more emergency food marketing area created within communities so that urban household will have unlimited access to food.

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