Humanities & Social Sciences Communications

ARTICLE

https://doi.org/10.1057/s41599-024-03799-4 OPEN

Urbanization factors and the vagaries of the rural health care industry in Nigeria: an analysis of the accessibility of healthcare services by older adults in the Nsukka Local Government Area

Helen. C. Nnadi[1], Onyinyechi. G. Ossai[2] & Victor C. Nwokocha[2]✉

This study sought to determine the effects of urbanization on access to healthcare services by older adults in Nsukka Local Government Area. The Nigerian healthcare industry is organized under the three tiers of government: Federal, State and Local governments. As such, most of the healthcare facilities are located in urban areas while majority of older adults reside in different local governments in rural communities where there are a few of the facilities. This has led to poor utilization of medical services by older adults in rural areas. This study adopted a mixed method approach. While questionnaire was used to collect quantitative data, interviews were used to collect qualitative data for the study. Questionnaire survey was used to collect data from 1180 older adults between the ages of 60 years and above from six communities in the study area. Descriptive statistics and Chi square were used to analyze the data while frequency distribution tables and percentages were used to present the results. The research showed that there are inadequate health facilities for the older adults in rural communities in Nsukka LGA. It also found that the older adults suffered challenges arising from lack of medical doctors, nurses, equipments, and drugs for effective healthcare delivery. It is recommended that more efforts should be geared towards providing adequate health facilities and health workers by government at public hospitals in rural communities to increase accessibility and adequate utilization by the older adults.

[1] Sociology Department, University of Nigeria, Enugu, Nigeria. [2] Department of Geography, University of Nigeria, Enugu, Nigeria.
✉email: victor.nwokocha@unn.edu.ng

Introduction

Globally, Nigeria has one of the largest supplies of health resources in Africa. However, the industry still suffers from an acute shortage of medical professional needed to deliver health services effectively to the citizens (Ahmat, Okoroafor and Kazanga et al., 2022). This is more pronounced in rural areas especially among the older adults. In Nigeria, healthcare services is the responsibility of all tiers of government to provide for the health needs of the populace. However, at least 70% of healthcare is provided by private hospitals; while 30% is supplied by federal, state, local, and even community-funded healthcare facilities. Approximately 70% of the Federal Ministry of Health's money is often allocated to city centers that provide residency for about 30% of the populace. According to Abdulraheem, Olapipo, and Amodu (2012), "in order to ensure that people and communities have access to productivity, social well-being, and a high quality of life, the Federal Ministry of Health should provide a National Health Policy that would be targeted at providing healthcare access to all Nigerian". Abby (2016), opined that an equitable, accessible, and efficient health care delivery system is the hallmark of a country's success.

Since 2012, the rate of Nigeria's urbanization has increased rapidly. During this period, the urbanization rate in Nigeria has grown from 45.25% in the year 2012 to 52.52% in the year 2022, an increase of nearly 7.27% (Statista, 2022). However, one of the issues of urbanization is that it attracts healthcare experts to urban centers where there are better facilities, higher salaries, and more opportunities for career growth. This can result in a shortage of healthcare workers in rural areas, leading to reduced access to healthcare services by older adults (Abimbola et al., 2015). Urbanization leads to general improvements in healthcare infrastructure, such as hospitals, and other healthcare facilities. These improvements however, are primarily concentrated in urban areas, leaving rural regions with inadequate infrastructure and limited access to modern healthcare facilities.

For instance, poor health outcomes are a result of the fact that, globally, only 25–38% of all physicians and nurses render medical services to the people in the hinterlands and city centers, respectively (Chankova et al., 2006). In Nigeria, rural areas only have access to an estimated 12 and 19% of all doctors and nurses, respectively, despite making up almost half of the country's population (World Bank, 2019 cited in Nwankwo et al., 2022). Because of this unequal distribution, rural residents' indices of health are substantially lower than those of their urban counterparts in every category. Again Amedari and Ejidike (2021) in their studies revealed that in rural communities with high rate of morbidity and mortality from disease, there are several obstacles to efficient health spending and service utilization. These include inadequate or nonexistent cost sharing programs, a lack of properly operating Primary Health Centers (PHCs), and unethical practices within the health industry. Nwankwo et al. (2022) found that "three factors such as socio-cultural, healthcare system, and personal healthcare workers intrinsic factors accounted for the healthcare inequality the rural and urban areas". According to the study, while socio-cultural factors include symbolic capital and stigma, healthcare system and governance issues include poor human resources for health policy and planning, work resources and environment, salary differences, skewed distribution of tertiary health facilities to urban area and political interference as well as intrinsic factors which include career progression and prospect, negative effect on family life, etc all affect healthcare delivery (Nwankwo et al., 2022). Comparatively, Guo et al. (2020) found that there was a positive disparity in outpatient and inpatient services in rural and urban area of China. The study revealed that there was a greater disparity of outpatient service in urban than that in rural areas.

Given the concentration of health facilities and skilled personnel in the urban areas, the aged in the rural area find it challenging to utilize basic healthcare services. Nigeria is the most populous black nation on earth and economic power house in Africa. She has the highest proportion of older adults on the continent and ranks 19th globally and by 2050, the number of Nigerians between 65 years and above is expected to triple (Mbam et al., 2022). This increase is in spite of the severe poverty, unresolved development issues, socioeconomic inequality, decline in the traditional care that older individuals that these segment of the population have had to face in their life time. Eniola (2020) asserts that long-term care and services for senior citizens in both urban and rural areas should ideally support their capacity to "Age in Peace" in their houses or communities. However, this is not the case, though, considering how dispersed Nigeria's healthcare system is and how little of it originates from cohesive, well-run facilities in the country's rural areas. This makes the older adult population in the rural areas to be vulnerable due to their inability to access health facilities in the urban areas following the high cost of health services in these areas. This is against the 2023 and 2024 World Health Day themes which were predicated on "Heath for All" and My Health, My Right. These themes were targeted at achieving good health for all including the rich, poor, urban and rural dwellers as well as promoting the rights of all people to adequate health care, education, information, clean air, safe drinking water, healthy diet, decent housing, respectable working environmental circumstances, and the absence of prejudice (WHO, 2023, 2024).

Similarly, unlike the developed countries where there is a structure that provides health and care giving services for older adults, the Nigerian healthcare delivery services to the ageing population is non existent (Nnadi and Ezeh, 2023). The greater percentages of the older adults reside in rural areas particularly those who have retired from their places of work (Adebowale et al., 2012). Following the existing urban-rural disparity in the establishment and provision of healthcare facilities or amenities, this large proportion of the older adults are living in rural areas where healthcare delivery services are not provided. This has also resulted in Nigeria's health indicators to have either stagnated or worsened during the past decade despite government's efforts to improve healthcare delivery in the country (Eteng et al., 2013). A number of studies (Adewoyin Chukwu and Sanni, 2018; Aliyu and Amadu, 2017; Effiong et al., 2021; Mbam et al. (2022); have examined urbanization and the healthcare services in Nigeria. As laudable as these studies are, they did not to show the effect of urbanization on access to healthcare services by the older adults in Nigeria. Hence, this paper examined the effect of urbanization on access to healthcare services by older adult in Nsukka Local Government Area, of Nigeria. This is an attempt to proffer some possible ways to improve adequate utilization of healthcare services in the study area. This study will be carried out with the following research question:

A. Does urbanization affect accessibility to healthcare services by older adults in Nsukka Local Government Area of Enugu State?

Literature review

Urbanization is the movement of people to the cities from the rural and hinterlands and the steady rise in the percentage of urban residents (Eckert and Kohler, 2014, Adewoyin, Chukwu and Sanni, 2018). The proportion of persons residing in the cities worldwide have had a steady rise between 13% in 1900, 29% in 1950, 49% in 2005, and it is predicted that by 2030, 60% of people would be urban dwellers (Aliyu et al., 2017, Aliyu and Amadu, 2017). The urban population grew from 220 million in 1900 to

732 million in 1950, and this trend reflects that rise. Overtime, urban areas have served as the global hubs for industry, commerce, and economic growth. Urban areas provide significant opportunities for social and technological advancement as well as enhance the spread of information through cross-cultural interaction provided they are administered correctly. They have served as hubs for political activity, legal frameworks, effective government,employment social and physical infrastructural facilities such as roads, pipe borne water, hospitals ans healthcare centers. In Nigeria, there is more than 5% gap between the rate of urbanization and the rate of natural population growth. This is because of the conception that urban areas provide better opportunities for health care services, education, work, and research which serves as the "pull" factor. Research has found that when compared to urban communities, rural areas have worse health outcomes including challenges with mental health, substance abuse, physical health, and sexual health. For instance, the work of Liu et al. (2018) demonstrated that when selecting healthcare facilities in the urban areas of China, factors such as the severity of the disease, the availability of drugs, medical staff, and accessibility of transportation all played significant roles. To boost primary care utilization in rural regions, however, it might be beneficial to strengthen primary care in proportion. Using a descriptive, cross-sectional and random-sample survey, the work of Oladapo et al. (2010) advocated for a better medical services for the management of Cardiovascular disease CVD and other chronic non-communicable diseases, as they indicate a significant prevalence of cardiometabolic risk factors in a rural Nigerian community. This is reiterated by the work of Nwankwo et al. (2007). which found that Nigerian rural communities have greater prevalence rates of cardiovascular risk factors than Nigerian metropolitan areas, suggesting the need for preventive and intervention measures to lessen the burden of these risk factors.

In view of this, Sivakumar et al. (2020) in their study found that all kinds of health care facilities are not being accessed by rural communities in India. Furthermore, Mariolis et al. (2008) found that the three most frequent reasons for people choosing health centers in the urban areas are low waiting time, proximity to residence and satisfaction with the services provided in previous visits. Erlyana, Damrongplasit and Melnick (2011) also showed that when making a decision about which healthcare providers to see, urban dwellers consider both distance and the expense of the treatment as indicated by the medical fee. Using a bivariate analysis and logistic regression, the work of Lutfiyya et al. (2013) revealed that adults above 40 years of age in the rural areas of United States have a higher prevalence of arthritis and other health service deficits among those with arthritis.the study showed that many individuals with arthritis experience a health service deficit and rural residents are at greater risk when compared to their urban counterparts. The work of Banerjee (2021) found that rural-urban inequality and lack of healthcare infrastructure contribute to the 7% point higher healthcare utilization among the older adults in urban India compared to rural India. Thakur, Banerjee and Nikumb (2013) in their studies also found that rural areas and marginalized groups have a high number of unmet health requirements, including untreated cataracts, uncontrolled hypertension, uncorrected hearing impairment, and tobacco use. In poorer nations, these require health interventions and priorities should also be given to preventive programs like initiatives to help older people quit smoking.

In a cross-sectional study, Miao et al. (2021) discovered that, as a result of their poor willingness and the crisis workforce in the areas, older persons living in remote communities had a high demand for chronic disease management. Rural residents are insensitive to medical fees, but they are sensitive to the non-medical component of care costs as determined by travel distance. Effiong et al. (2021) demonstrated that while urbanization has a negative and large impact on death rates, it has a positive and significant impact on life expectancy. While the work of Nnadi and Ezeh (2023) highlighted that older people experience issues like loneliness, isolation, and abandonment in the healthcare system in the rural areas, Mbam et al. (2022) emphasized the significance of putting in place efficient government policy interventions for the training of gerontological experts for the assistance of older adults in Nigeria. Ogidigo et al. (2023) found that geographical disparity and structural inequalities in rural Nigeria contribute to poor awareness, diagnosis, and care for older adults with Alzheimer's disease and related dementias (ADRD).

Furthermore, there have been a series of arguments on access to healthcare by citizens of various countries, studies have shown that even with the increasing number of private healthcare facilities, it is still worrisome that there are lapses in the provision of quality healthcare facilities and access to these facilities are somewhat limited, therefore, there is a need to provide and/or equip healthcare centers in the rural communities to mitigate the impact of moving a long distance to access healthcare facilities in Nigeria (Mbam and Emma-Echiegu, 2018; Olasehinde et al., 2023). A thorough study on healthcare access found that 43.3% of the world's population (or 3.16 billion people) cannot walk to a healthcare facility within an hour, and 8.9% of the population (or 646 million people) cannot reach healthcare within an hour even if they have access to motorized transportation (Weiss et al., 2020). According to Khakh and Fast (2017), urban environments need to be improved in order to increase the accessibility of healthcare for all residents, and Loera (2008) proposed that telemedicine could have a positive impact on enhancing access to healthcare services for both users and providers. Access to healthcare is also needed more in rural areas where majority of the older adults who are not among the workforce needed in urban areas resides. According to Ramanadhan et al. (2022), service delivery for tobacco control in India is often influenced by socio demographic characteristics. Despite this, guidance is frequently lacking in low-resource systems. According to Santamaría-Ulloa et al. (2019), making healthcare services available to everyone, regardless of location, is necessary to achieve Sustainable Development Goals.

In Nigeria, accessibility and usage of healthcare facilities go hand in hand because the majority of community health initiatives concentrate on raising awareness of the importance of utilizing the delivery services that are offered at the healthcare facility (Arogundade et al., 2021). According to Chukwuani et al. (2005), the facilities that are now available do not offer all the services that are expected of them, are not well-maintained, do not have enough competent health personnel, and do not have a budget. According to the poll, the two biggest problems facing Nigeria's public healthcare facilities are low PHC utilization and subpar service delivery. Furthermore, a study by Ekenna et al. (2020) demonstrated that at least 50% of the recommended infrastructure/basic services and the presence of a medical officer were connected with the urban location of the facilities. More specifically, Onwujekwe et al. (2021) emphasized the key ideas that support social inclusion and fair access to health services, with the provision of functioning and upgraded health infrastructure being of the utmost importance. Other issues with the healthcare facilities that are available in Nigeria include a lack of skills, subpar care, dubious recognition, and immense difficulties in administering a diversified health system (Onwujekwe et al., 2022). According to Kabir (2022), while more than 55% of women had access to media, just 26.9% of women used mobile to get health services. Access to the media has a strong correlation

with prenatal and postpartum care. Chun and Nam (2019) suggested that, in order to promote social equity, patient welfare should be given top priority. Studies on older individuals' access to healthcare facilities concentrate mostly on the barriers that prevent them from gaining access to high-quality healthcare facilities. Studies like those by Akanji et al. (2002) advice giving older people's health needs more attention through better budgetary allocation, change of the training curriculum for all cadres of health staff to include geriatrics, and exploitation of existing healthcare resources (Correia et al., 2022).

According to Khakh and Fast (2017), four aspects of healthcare access for the older adults were found to be deficient: availability, appropriateness, approachability, and affordability. The primary obstacles were the following: the present financial situation and pension cuts; the inadequate provision and increased user fees in primary care; the lack of long-term care facilities; the increased out-of-pocket costs; and the poor, unadapted housing conditions for older adults people. More older adults healthcare users are being advised to use the phone internet for easy health accessibility, through which they are given sufficient information to help them make informed decisions regarding their health, according to other studies that have shown a gap between old and young users of computers and the Internet for information appears to have widened in recent years (Lorence and Park, 2006; Lothian and Philp, 2001). In order to ensure fair access to residential care resources among the senior population, the spatial optimization of residential care facility locations is urgently required (Tao et al., 2014). According to (Thorpe et al., 2011), older individuals who live in rural areas and do not get a pension are more likely to face access barriers to healthcare facilities. This is the reason Woo et al. (2002) stated that there has to be an improvement in services for older people, namely in areas such as medical service adequacy, accessibility, and affordability, coordination of health and social care, long-term care quality, unfavorable views, and training requirements.

The majority of research has shown that older persons who live in rural locations have difficulty accessing healthcare facilities due to the concentration of the majority of functional public healthcare facilities in urban areas. The issues in older patients' access to healthcare have been extensively discussed in previous studies, but only a limited number of those studies have recognized urbanization as a barrier to access to healthcare services, which is the focus of the current study.

Theoretical framework

Social action theory and Health Belief Model served as the theoretical framework for the current study. The social action theory emphasizes action approach to the analysis of social phenomena, that is, the environment as being the reality of everyday life (Ewart, 1991). In hospital environment for effective utilization of health services and resultant reduction of age related problems, there should be adequate facilities, skilled medical personnel's with incentives to workers, equitable distribution of facilities between the urban and rural allocation to health sectors—all these will go a long way to the utilization of health services by older adults in rural community. The Health Belief model on the other hand looked at an individuals actions to treat and prevent diseases through consideration of three central variables. These variables according to the theory are:

1. An individual's perceived susceptibility to a particular health problem: An individual will seek preventive health services (going for treatment) if they are susceptible to ill health,
2. An individual's perception of illness severity: An individual's perception of the seriousness of the ill health will make him/her to seek health care services for treatment or prevention,
3. An individual's rational perception of benefits versus costs: An individual will not take action unless the treatment or prevention is perceived as having greater benefits than costs.

According to the Health Belief Model, individual perception such as perceived seriousness in ideal healthy ageing, benefits and barriers are more likely to affect the preventive actions such as adequate health care with government hospitals which will reduce age related problems go a long way in preventing problems like anxiety, depression, delirium, dementia, personality disorders, and substance abuse and other age related complications that cannot be effectively handled. These theories were used in this study because their understanding would help in equal distribution of health facilities between the urban and rural communities in the study area.

Methods

Study location and design. This study was carried out in Nsukka Local Government Area, Enugu State in the South-east geopolitical zone of Nigeria as was shown in Fig. 1.

The area has a total population of 309,448 (National Population Commission, 2010). Nsukka is mainly dominated by rural communities that are mostly inhabited by farmers and artisans.

The study adopted a mixed method approach. While a questionnaire survey 1180 respondents was used to collect quantitative data, interviews and participant observation was used to collect qualitative data. Six communities were selected by simple random sampling. A total of 12 hospitals were purposely selected from the six communities. Two (2) hospitals each (Public and Private hospitals) were selected from each of the sampled community. This was to account for the accessibility of healthcare service by older adults in both institutions. The research design was cross-sectional survey deign. This was used to show how urbanization affect healthcare access by older adults in the study area.

Sampling. A multistage sampling technique involving stratification, simple random and purposive samplings were adopted to select a representative sample from the study populations. The Cochran (1963) formula was used to statistically identify a total of 1180 older individuals at a confidence interval of 95% within an estimated percentage error margin of 0.04. A total of six sample area were selected for the study through simple random sampling (balloting system) from the 14 LGAs. Ten (10) informants were purposively selected for in-depth interview. The in-depth interview was carried out in the year 2023.

Study instrument. The questionnaire used in this study had structure and semi structured questions. The section A of the questionnaire focused on the socio- demographic data while the section B focused on the main research issues. The questionnaire was distributed through direct delivery technique with two research assistant. This technique was used in order to enhance participation, response rate, and to minimize language issues that may arise from the questionnaire. A total of 1180 questionnaires was correctly filled and returned. The IDI guide was used for the IDI section after respondents have been notified, verbal consent was also obtained and appointment scheduled prior to the interview.

Data analysis. Both the quantitative and qualitative method of data analysis was employed using the Statistical Package for the

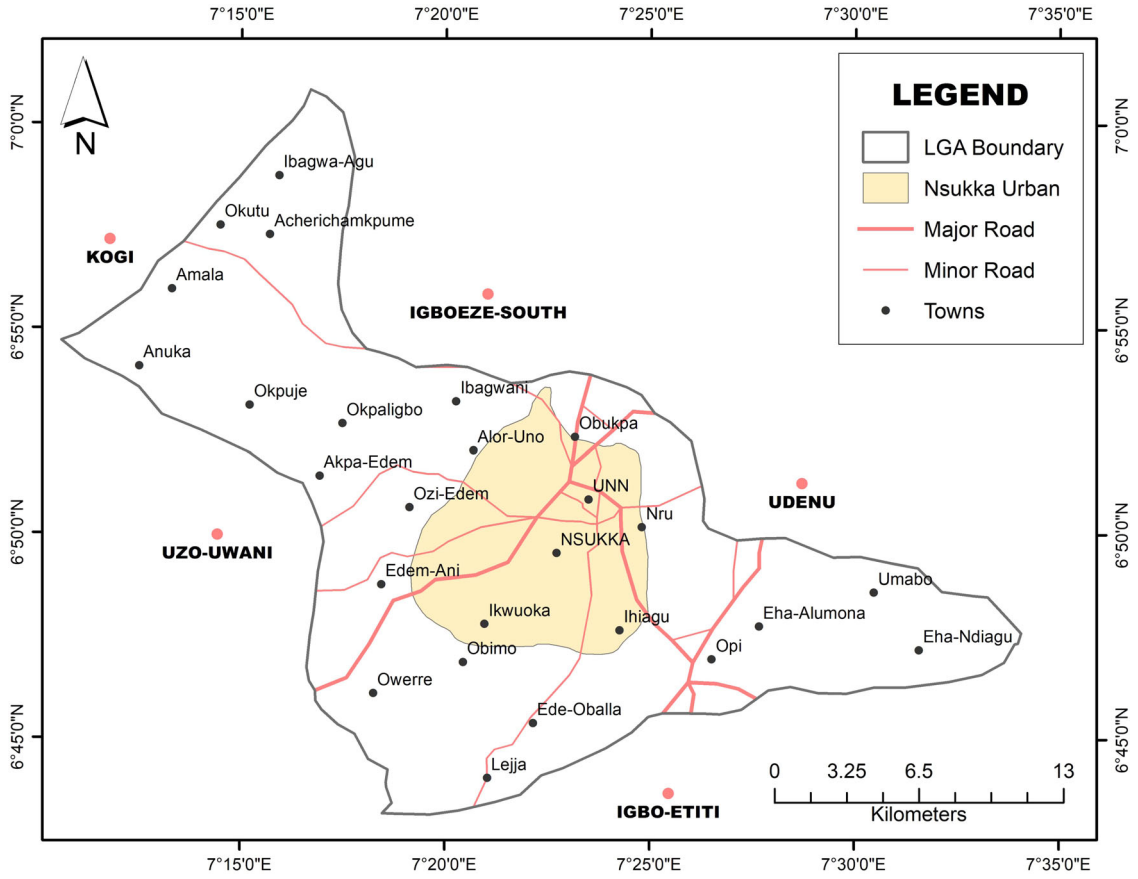

Fig. 1 Nsukka Local Government Area. Distribution of respondents by those who care for them at home presently and if the older adults were able to access these healthcare services. Source: Nsukka Town Planning Authority.

Social Sciences (SPSS version 20). Whereas to assess the proportion of different responses to issues, the descriptive statistics of frequency distribution, tables and percentages were used, the variable of the hypothesis was tested using Chi square (x^2) statistics. The qualitative data collected from the IDI were dully edited, interpreted and analyzed using thematic method, where each item were discussed and necessary illustrative quotes were used to support the quantitative data.

Results

Distribution of respondents by sociodemographic characteristics and access to healthcare services. The table below indicates the relationship between the sociodemographic characteristics of respondents and access to healthcare services.

The result showed that 53.7% and 46.3% of the respondents have been admitted in a healthcare facility before. This shows that older adult seek for health services when they are sick. The result also showed that 53.7% of the older adults person admitted into a hospital/health facility before by sex were males while 46.3% were females. Similarly, the result showed that 45.3% and 54.7% of the respondents have not been admitted in a hospital/health facility. This indicates that some older adults in the study area engage in self medication. This from our observation include taking unprescribed drugs, visiting roadside chemist to mix drugs for them and the use of traditional herbs which most times compound their situation (Table 1).

In the area of place of residence, 67.7% of the older adults who have been admitted in a hospital/health facility reside in rural community while 19.0% and 13.3% reside in urban community and semi-urban community respectively. In the area of education, 21.2% of the older adults persons who have been admitted in a hospital/health facility before have no formal education while 34.0%, 27.0% and 17.8% attended primary school, respectively. For those that have never been admitted, 31.2% have no formal education while 33.2% 29.1% and 6.5% attended primary school, secondary school and tertiary institution. This also showed that a good number of the older adult persons who have been admitted in the hospital have no formal education. Lastly the respondents by the present health condition and monthly income, among the respondents who are healthy, 46.3% earn less than N18,000 in a month, 37.5% earn between N18,000 and N44,000 in a month, 8.8% earn N45,000 and N75,000 in a month and 7.4% earn N76,000 and above. For the respondents who are on medication, 61.6% earn less than N18,000 in a month, 22.6% earn N18.000- N44.000 in a month, 10.3% earn N45.000-N75,000 in a month and 5.5% earn N76.000 and above. The result showed that a greater percentage of the respondents who are on medication earn less than N18,000 per month.

The financial demand of healthcare delivery for the older adults is a strong factor that hinders healthcare services to the older adults. This was further corroborated with the qualitative data from IDI older adult as he stated thus:

Health problems associated with the older adults come in different forms, and stages. Nobody at my age can say he is healthy, although everybody is praying that it should not be too much. Most times I experiences blurred vision. I am unable to see someone clearly, unable to sleep well; I have arthritis, west pain-sometimes I feel like I carry a heavy load., but because of financial constraints we cannot boast of taking adequate care of ourselves. Also poor income makes most of the older adults not to keep to

Table 1 Sociodemographic characteristics of respondents and access to healthcare services.

Sex	Have you ever been admitted in a hospital/health facility before?		Total
	Yes	No	
Male	302 (53.7)	280 (45.3)	582 (49.3)
Female	260 (46.3)	338 (54.7)	598 (50.7)
Total	562 (100)	618 (100)	1180 (100)
Place of residence			
Rural	67.7%		
Urban	19.0%		
Semi- urban	13.3%		
Total	100		
Level of education			
No formal education	119 (21.2)	193 (31.2)	312 (26.4)
Primary school	191 (34.0)	205 (33.2)	396 (33.6)
Secondary school	152 (27.0)	180 (29.1)	332 (28.1)
Tertiary education	100 (17.8)	40 (6.5)	140 (11.9)
Total	562 (100)	618 (100)	1180 (100)
Monthly income	**Present health condition**		
	Healthy	**On medication**	
Less than 18,000	268 (46.3)	370 (61.6)	638 (54.1)
18,000–44,000	217 (37.5)	136 (22.6)	353 (29.9)
45,000–75,000	51 (8.8)	62 (10.3)	113 (9.6)
76,000–above	43 (7.4)	33 (5.5)	76 (6.4)
Total	579 (100)	601 (100)	1180 (100)

Source: Authors Computation, 2024.

education they got on the necessary diets meant for people of their age. The most common food within their area is starchy food. We resort to such foods because of poor earnings. What I receive as my monthly payment is so minimal that if the government should select trustworthy people that will go into villages and treat older adult people and also distribute drugs free or at reduced price, this will help to supplement the poor income of many people in the community. (*IDI, older adult, male 67years,Opi community*)

Another older adult man also complained thus:

I worked and retired as a University of Nigeria staff. I was admitted at Dr. Ezenwa hospital for treatment, but as I was not getting better, the doctor referred me to the university of Nigeria Teaching Hospital for further treatment, There was improvement but the major problem that I encountered along with many other patients admitted in the hospital is that of financial help. My monthly income which I receive as pension cannot foot the medical bills in the hospital. I therefore plead for financial support from the government, and free drugs for the older adults or drugs at reduced price for the drugs (IDI, older adult, male, 70years Obollo Afor community).

The result showed that 44.2% of the older adults were able to access healthcare services while 55.8% were unable to access healthcare services in the rural area. In the area of care giving to the older adults, 39.3% of older adult spouses are able to access the health services while 60.7% were unable to access healthcare services for their older adult. This also applied to the children/grandchildren of older adults. About 37.1% of the children and grandchildren were able to access health services for their older adults, while 62.9% were not. It can be seen that majority of the caregivers were unable to access the healthcare services for their older adults.

Places older adults access healthcare services and effect of urbanization on utilization of healthcare delivery services. The result showed that 44.4% of the older adults who cared for themselves in the rural areas have been admitted to the hospital, while 55.6% have not as was shown in Table 2.

The result also showed that 55.3% of those that were cared for by their spouse have been admitted to the hospital while 46.7% have not been admitted. Older adults that were taken care-of by their children/grandchildren showed that 41.3% have been admitted to the hospital, while 58. 7% have not been admitted to a hospital.

In the course of the IDI in Ogbede community a caregiver to her grandmother complained thus:

> "My grandmother needs care and regular attention given to her in the hospital through regular check-ups, I know that this may only be achieved in private hospitals but the cost of treatment is always high, this normally restrict us from going to hospital for treatment" (IDI, a Caregiver, 30yearsOgbede Community).

> Also on the older adults who have ever been admitted in a hospital/health facility before and how often they visit the hospital, those respondents who said that they have been admitted in the hospital/health facility, 2.8% visit the hospital weekly, 23.7% visit the hospital monthly 7.1% visit the hospital twice yearly and 66.4% rarely visit the hospital. Those who said that they have not been admitted in the hospital/health facility,4.5% visit the hospital weekly, 14.2% visit the hospital monthly, 6.8% visit the hospital twice yearly and 74.4% rarely visit the hospital. We can see from this table that majority of the older adults who said that they have not been admitted in the hospital/health facility before 74.4%, rarely visit the hospital.

Furthermore, on the places the older adults go for treatment, the study revealed that 37.0% of the respondents visit the hospitals in their localities, while 42.5% patronize the chemist shops. The result also showed that Similarly, the result also showed that 20% of the older adults visit prayer houses to receive healing /treatment for their ailments.

Discussion of results. The result in the study has shown that about 37.7% of the older adults in the study area have been admitted into the hospital/health facility before the time of this study. This observation was due to the constant absence/lack of drugs, nurses and doctors in the health facilities. This has also made the older adults to go into self medication by visiting chemist shops and using traditional herbs to take care of their health. In the area of accessing healthcare services, the study found that 65.6% of the respondents who indicated that they have been admitted in the hospital/health facility were unable to access the healthcare services. The study showed that the older adults in the rural community that have been admitted in the hospitals had no access healthcare services. These findings are in agreement with that of MedPAC (2014), who noted that the older adults' health care needs for coping with multiple chronic conditions that account for a vast majority of Medicare expenditures are poorly managed. This was supported by the work of Rowe et al. (2016) which stated that the health care system is unprepared to provide the medical services needed for previously unimagined numbers of sick older persons. This was also corroborated by the work of Eniola (2020) which found that long term care and healthcare provisions for older adults in both rural and urban communities should assist ideally their ability to" Age in Place" within their homes or communities.

Table 2 Distribution of respondents by those that care for the older adults at home presently and whether the respondents have been admitted to health facility before.

Whether the respondent have been admitted in hospital/health facility before	Those that cares for the older adults at home presently			Total
	Self	Spouse	Children/ grandchildren	
Yes	162 (44.4)	282 (53.3)	118 (41.3)	562 (47.6)
No	203 (55.6)	247 (46.7)	168 (58.7)	618 (52.4)
Total	365 (100)	529 (100)	286 (100)	1180 (100)

How often do you visit the hospital?	Have you ever been admitted in a hospital/health facility before?		Total
	Yes	No	
Weekly	16 (2.8)	28 (4.5)	44 (3.7)
Monthly	133 (23.7)	88 (14.2)	221 (18.7)
Twice yearly	40 (7.1)	42 (6.8)	82 (6.9)
Rarely	373 (66.4)	460 (74.4)	833 (70.6)
Total	562 (100)	618 (100)	1180 (100)

Homes/Number of children	Places they go for treatment					Total
	Traditional healers	Pharmacy/chemist shop	Private hospital/ clinic	Government hospital/ health center	Prayer houses	
None	13 (5.5)	16 (4.1)	7 (4.7)	14 (3.7)	2 (7.7)	52 (4.4)
1–4	122 (51.9)	174 (44.8)	67 (44.7)	196 (51.4)	9 (34.6)	568 (48.1)
5–8	87 (37.0)	165 (42.5)	64 (42.7)	156 (40.7)	13 (50.0)	485 (41.1)
9–above	13 (5.5)	33 (8.5)	12 (8.0)	15 (3.9)	2 (7.7)	75 (6.4)
Total	235 (100)	388 (100)	150 (100)	381 (100)	26 (100)	1180 (100)

Source: Authors Computation, 2024.

Similarly, the study revealed that 42.5 and 20% of the respondents patronize chemist shops and prayer houses while 37% visit the hospitals in their localities. The study observed that the chemist and prayer houses were filling the gap created by the healthcare services. Most of the older adults visit prayer houses and patronize the chemist because they are likely to get quick response to their health challenges in these places more than the hospitals and other health facilities. It was also observed that the older adults take these options because of their inability to travel to the cities/ urban centers to seek medical attention. The study showed that majority of the older adults receive less than N20,000 income monthly. This can hardly cover their basic expenses of feeding, clothing and shelter. This also explains why they visit chemists and prayers houses to receive medical attention. They engage in low paid jobs like petty trading and as such cannot afford the cost of drugs. This corroborates the work of Adebowale et al. (2012) which found that aging in Nigeria is occurring against the socio-economic background of wide spread poverty, hardship, the HIV/ AIDS pandemic, and the rapid transformation of the traditional extended family structure to modern nuclear family structure.

This was also corroborated by an IDI session with an older adults widow in Opi community, Nsukka local government area who stated that: she lack source of income because she was not trained by her parent and this has affected her healthcare utilization.

This answers the research question which sought to ascertain the influence of urbanization on the healthcare accessibility by older adults in Nsukka Local Governement Area of Enugu State since most of the older adults resort to self-help following the inadequate health care services in the study area.

Conclusion

This study examined the effect of urbanization on the accessibility of healthcare service by older adults in Nsukka Local Government Area. It found that older adults in the study area had limited access to health care services. This was due to the migration of medical personnel to the urban areas. The study also showed that the traditional family system which helps in the care of older adults especially in rural area has collapsed due to the absence of institutional support and people's penchant for urban health care services. This situation calls for concerted strategies that would improve rural heath care system for older adults in rural areas. Government is enjoined to provide the necessary supports for the rural health care facilities in the rural areas. This can be in the area of drugs and equipments which can enable these facilities to take care of the older adults residing in the study area.

Limitation of study

Limitation of the study and future research. This study has shown that majority of the older adults admitted in the hospitals had not access to health services following the migration of medical personnel to the urban areas. This study however had a number of limitations. Firstly the study was limited to one Local Government Area (LGA) in Enugu State Nigeria. This means that the result of this study cannot be generalized or used to appraise the effect of urbanization on the accessibility of health care services by older adults in all the rural areas across other LGAs in the 36 states of Nigeria. Similarly this study dwelt more on the older adults without considering the other segments of the population in the rural areas. This also means that very little is known about the effect of urbanization on the accessibility of health care services by other members of the population (children and Adults). Consequently, it is essential that future research in this area of study be done to include more than one LGA and state. This would ensure that the outcome of the research can be used to account for the situation in other areas. It is also important for

other members of the population to be examined in this area of research. This would not only give room for comparison, it will also show whether lack of access to health care services in the rural areas is general or limited to the older adults.

Data availability

Data used in this study will be made available on request.

Received: 28 November 2023; Accepted: 16 September 2024;
Published online: 11 October 2024

References

Abby M (2016) Health care delivery in America why Canada does it better. Wilson Center, Washington

Abdulraheem RS, Olapipo AR, Amodu MO (2012) Primary health care services in Nigeria: critical issues and strategies for enhancing the use by the rural communities. J Public Health Epidemiol 4(1):5–13. https://doi.org/10.5897/JPHE11.133

Abimbola S, Olanipekun T, Igbokwe U, Negin J, Jan S, Martiniuk A et al. (2015) How decentralisation influences the retention of primary health care workers in rural Nigeria. Glob Health Action 8:26616. pmid:25739967

Adebowale SA, Atte O, Ayeni O (2012) Older adults well-being in a rural community in north central Nigeria, Sub-Sahara Africa. Public Health Res 2(4):92–101. https://doi.org/10.5923/j.phr.20120204.05

Adewoyin Y, Chukwu NA, Sanni LM (2018) Urbanization, spatial distribution of healthcare facilities and inverse care in Ibadan, Nigeria. Ghana J Geogr 10(2):96–111

Ahmat A, Okoroafor SC, Kazanga I et al. (2022) The health workforce status in the WHO African Region: findings of a cross-sectional study BMJ Global Health 7(1):1–8:e008317

Akanji BO, Ogunniyi A, Baiyewu O (2002) Healthcare for older persons, a country profile: Nigeria. J Am Geriatr Soc 50(7):1289–1292. https://doi.org/10.1046/j.1532-5415.2002.50319.x. PMID: 12133027

Aliyu AA, Amadu L (2017) Urbanization, cities, and health: the challenges to Nigeria, a review. Ann Afr Med 16(4):149–158. https://doi.org/10.4103/aam.aam_1_17

Amedari MI, Ejidike IC (2021) Improving access, quality and efficiency in health care delivery in Nigeria: a perspective. PAMJ—One Health 5(3):1–8. 2021

Arogundade K, Sampson J, Boath E, Akpan U, Olatoregun O, Femi-Pius O, Orjih J, Afirima B, Umar N (2021) Predictors and utilization of health institution services for childbirth among mothers in a southern Nigerian city. Obstet Gynecol Int 7;6618676. https://doi.org/10.1155/2021/6618676

Banerjee S (2021) Determinants of rural-urban differential in healthcare utilization among the older adults population in India. BMC Public Health, 21. https://doi.org/10.1186/s12889-021-10773-1

Chankova S, Nguyen H, Chipanta D, Kombe G, Onoja A, Ogungbemi K (2006) A situation assessment of Human Resources in the Public Health Sector in Nigeria. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc. Available from: https://pdf.usaid.gov/pdf_docs/pnadh422.pdf

Chukwuani CM, Olugboji A, Akuto EE, Odebunmi A, Ezeilo E, Ugbene EA (2005) Baseline survey of the Primary Healthcare system in south eastern Nigeria. Health Policy 77(2):182–201. https://doi.org/10.1016/j.healthpol.2005.07.006

Chun S, Nam K (2019) A public health scape framework for assessing geriatric long-term care public hospitals in South Korea by a Delphi expert consultation. Build Environ 165:2019. https://doi.org/10.1016/j.buildenv.2019.106291. 106291, ISSN 0360- 1323

Cochran WG (1963) Sampling technique (2nd edition) New York: John Wiley and Sons Inc

Correia RH, Grierson L, Allice I et al. (2022) The impact of care of the older adults certificates of added competence on family physician practice: results from a pan- Canadian multiple case study. BMC Geriatr:840. https://doi.org/10.1186/s12877-022-03523-4

Eckert S, Kohler S (2014) Urbanization and health in developing countries: a systematic review. World Health Popul. 2014;15(1):7–20. https://doi.org/10.12927/whp.2014.23722

Effiong UE, Okijie SR, Muhammad Ridwan (2021) Urbanization and health conditions in Nigeria: dealing with the urban health challenges. SIASAT 6(4):190–203. https://doi.org/10.33258/siasat.v6i4.104

Ekenna A, Itanyi IU, Nwokoro U, Hirschhorn LR, Uzochukwu B (2020) How ready is the system to deliver primary healthcare? Results of a primary health facility assessment in Enugu State, Nigeria. Health Policy Plan 5(1):i97–i106. https://doi.org/10.1093/heapol/czaa108

Eniola OC (2020) African research on sciences. CARTA+ (Consortium for Advanced Research Training in Africa+) Developing Excellence, Leadership, and Training in Sciencein Africa (DELTAS Africa) programs

Erlyana E, Damrongplasit KK, Melnick G (2011) Expanding health insurance to increase health care utilization: will it have different effects in rural vs. urban areas? Health Policy 100(2–3):273–281. https://doi.org/10.1016/j.healthpol.2010.11.008

Eteng I, Etobe I Utibe, E Etobe (2013) The National Health Insurance Scheme and its implication for older adults care In Nigeria.Int J Sci Res ISSN (Online): 2319–7064. Index Copernicus Value: 6.14/Im: 4.438 4(2), pp 186–132

Ewart CK (1991) Social action theory for a public health psychology. American Psychologist, 46(9), 931–946. https://doi.org/10.1037/0003-066X.46.9.931

Guo B, Xie X, Wu Q, Zhang X, Cheng H, Tao S, Quan H (2020) Inequality in the health services utilization in rural and urban china: a horizontal inequality analysis. Medicine 99(2) https://doi.org/10.1097/MD.0000000000018625

Kabir MR (2022) How do traditional media access and mobile phone use affect maternal healthcare service use in Bangladesh? Moderated mediation effects of socioeconomic factors. PLoS One 17(4):e0266631. https://doi.org/10.1371/journal.pone.0266631

Khakh AK, Fast V (2017) Measuring spatial accessibility of healthcare services in Calgary (poster). J Transp Health 7(Supplement, 2017):S13–S14. https://doi.org/10.1016/j.jth.2017.11.023. ISSN 2214-1405

Liu Y, Kong Q, Yuan S, Van de Klundert J (2018) Factors influencing the choice of health system access level in China: a systematic review. The Lancet, 392, S39

Loera JA (2008) Generational differences in acceptance of technology. Telemed J E Heappalth 14(10):1087–1090. https://doi.org/10.1089/tmj.2008.0028. PMID: 19119831

Lorence DP, Park H (2006) New technology and old habits: the role of age as a technology chasm. Technol Health Care 14(2):91–96. PMID: 16720952

Lothian K, Philp I (2001) Maintaining the dignity and autonomy of older people in the healthcare setting. BMJ 322(7287):668–670. https://doi.org/10.1136/bmj.322.7287.668. PMID: 11250856; PMCID: PMC1119851

Lutfiyya M, McCullough J, Saman D, Lemieux A, Hendrickson S, McGrath C, Haller I, Lipsky M (2013) Rural/Urban differences in health services deficits among U.S. adults with arthritis: a population- based study. J Nurs Educ Pract 3:43. https://doi.org/10.5430/JNEP.V3N11P43

Mariolis A, Mihas C, Alevizos A et al. (2008) Comparison of primary health care services between urban and rural settings after the introduction of the first urban health centre in Vyronas, Greece. BMC Health Serv Res 8:124. https://doi.org/10.1186/1472-6963-8-124

Mbam KC, Halvorsen CJ, Okoye UO (2022) Aging in Nigeria: a growing population of older adults requires the implementation of national aging policies. Gerontologist 62(9):1243–1250. https://doi.org/10.1093/geront/gnac121

Mbam EP, Emma-Echiegu, NB (2018) Determinants of healthcare utilization among older adults in Igbeagu community, Ebonyi State Nigeria. J Psychol Sociol Stud 2(1)1–34

MedPAC (Medicare Payment Advisory Commission) (2014) MedPAC data book. Washington, DC: MedPAC. Retrieved from http://www.medpac.gov/document/publications/June14databookentirereport.pdf?sfursn=1

Miao X, Bai W, Zhao Y, Yang L, Yuan W, Zhang A, Hu X (2021) Unmet health needs and associated factors among 1727 rural community-dwelling older adults: a cross-sectional study. Geriatr Nurs 42(3):772–775. https://doi.org/10.1016/j.gerinurse.2021.04.003

National Population Commission (2010) Fedral Republic of Nigeria Oficial Gazette. Retrieved from https://archive.gazettes.africa/archive/ng/2009/ng-government-gazette-dated-2009-02-02-no-2.pdf

Nnadi HC, Ezeh PJ (2023) Psycho-social experiences and healthcare delivery for older adults in Nigeria. Sage Open, 13(2). https://doi.org/10.1177/21582440231166646

Nwankwo ONO, Ugwu CI, Nwankwo GI, Akpoke MA, Anyigor C, Obi-Nwankwo U et al. (2022) A qualitative inquiry of rural-urban inequalities in the distribution and retention of healthcare workers in southern Nigeria. PLoS ONE 17(3):e0266159. https://doi.org/10.1371/journal.pone.0266159

Nwankwo E, Ene A, Biyaya B (2007) Some cardiovascular risk factors in volunteers for health checks: a study of rural and urban residents in the Northeast Nigeria. Internet J Thorac Cardiovasc Surg 5(2). 10.5580/32d

Ogidigo O, Okpalefe O, Omeje K, Anosike C (2023) Understanding the current location disparities in adrd and its determinants in nigeria. Innov Aging 7:158–158. https://doi.org/10.1093/geroni/igad104.0519

Oladapo O, Falase A, Salako L, Sodiq O, Shoyinka K, Adedapo K (2010) A prevalence of cardiometabolic risk factors among a rural Yoruba south-western Nigerian population: a population-based survey. Cardiovasc J Afr 21:26–31

Olasehinde N, Osakede UA, Adedeji AA (2023) Effect of user fees on healthcare accessibility and waiting time in Nigeria. Int J Health Gov 28(2):179–193. https://doi.org/10.1108/IJHG-07-2022-0062

Onwujekwe O, Mbachu C, Onyebueke V et al. (2022) Stakeholders' perspectives and willingness to institutionalize linkages between the formal health system and informal healthcare providers in urban slums in southeast, Nigeria. BMC Health Serv Res 22:583. https://doi.org/10.1186/s12913-022-08005-2

Onwujekwe O, Mbachu CO, Ajaero C et al. (2021) Analysis of equity and social inclusiveness of national urban development policies and strategies through the lenses of health and nutrition. Int J Equity Health:101. https://doi.org/10.1186/s12939-021-01439-w

Ramanadhan S, Xuan Z, Choi J et al. (2022) Associations between socio-demographic factors and receiving "ask and advise" services from healthcare providers in India: analysis of the national GATS-2 dataset. BMC Public Health 22:2115. https://doi.org/10.1186/s12889-022-14538-2

Rowe JL, Berkman L, Fried T Fulmer J, Jackson M, Naylor W Novelli J Olshansky, Stone R (2016) Vital directions for health and health care series. National Academy of Medicine, Washington, DC

Santamaría-Ulloa C, Montero-López M, Rosero-Bixby L (2019) Diabetes epidemics: inequalities increase the burden on the healthcare system. Health Policy Plan 34(2):ii45–ii55. https://doi.org/10.1093/heapol/czz109

Sivakumar I, Manimekalai K, Ranjithkumar A (2020) Accessing public health facilities: rural and urban disparities. J Crit Rev 7(3):382–388

Statista (2022) Nigeria: Statistics and Facts. Retrieved from https://www.statista.com/topics/2386/nigeria/#topicOverview

Tao Z, Cheng Y, Dai T et al. (2014) Spatial optimization of residential care facility locations in Beijing, China: maximum equity in accessibility. Int J Health Geogr 13, 33. https://doi.org/10.1186/1476-072X-13-33

Thakur R, Banerjee A, Nikumb V (2013) Health problems among the older adults: a cross- sectional study. Ann Med Health Sci Res 3:19–25. https://doi.org/10.4103/2141-9248.109466

Thorpe JM, Thorpe CT, Kennelty KA et al. (2011) Patterns of perceived barriers to medical care in older adults: a latent class analysis. BMC Health Serv Res 11:181. https://doi.org/10.1186/1472-6963-11-181

Weiss DJ, Nelson A, Vargas-Ruiz CA et al. (2020) Global maps of travel time to healthcare facilities. Nat Med 26, 1835–1838 (2020). https://doi.org/10.1038/s41591-020-1059-1

Woo J, Ho SC, Yu AL (2002) Lifestyle factors and health outcomes in elderly Hong Kong Chinese aged 70 years and over. Gerontology, 48, 234–240

World Bank (2019) Rural population (% of total population). World Bank; 2019. Available from: https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS

World Health Organization (2023) World Health Day 2023. Accessed from https://www.paho.org/en/campaigns/world-health-day-2023-health-for-all. Accessed date 7 August 2024

World Health Organization (2024) World Health Day 2024. Accessed from https://www.who.int/campaigns/world-health-day/2024. Accessed date 7 August 2024

Author contributions

The methodology, results and discussion of the paper were handled by the Dr Victor Nwokocha while Dr. Helen Chinedu Nnadi handled the background and literature review of the paper. Mrs Onyinyechi Ossai handled the theoritical framework, limitation of the study and future research as well as the conclusion.

Competing interests

The authors declare no competing interests.

Ethical approval

This article does not contain any studies with human participants performed by any of the authors' and does not require ethical approval.

Informed consent

This article does not contain any studies with human participants performed by any of the authors and therefore does not require any inform consent.

Additional information

Correspondence and requests for materials should be addressed to Victor C. Nwokocha.

Reprints and permission information is available at http://www.nature.com/reprints

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.