International Journal of Environmental Studies and Safety Research
ISSN: 2536-7277 (Print): 2536-7285 (Online)
Volume 9, Number 1, March 2024
http://www.casirmediapublishing.com

Housing Conditions and their Health Impacts on the Residents of Abakaliki Metropolis of Ebonyi State, Nigeria

*[1]Hyacinth O. Eze; [2]Celine Chukwunweme & [3]Cornelius U. Ozuomba
[1]Department of Urban and Regional Planning, Caritas University Enugu, Nigeria
[2]Dept. of Environmental Management, Ebonyi State University (EBSU)
[3]Department of Architecture, Caritas University Enugu, Nigeria
*Email:ezeho747@gmail.com

ABSTRACT
This study is aimed at assessing housing conditions and their health impacts on the residents of Abakaliki Metropolis of Ebonyi State, Nigeria. It has the objectives of examining the prevailing environmental and housing conditions in the study area; appraising the perception of residents about their housing and environmental sanitation; and exploring their health impacts and possible actions that can be taken towards sustainable environmental, housing, sanitation and healthy living in the area. The research adopted a survey research design which helped in elucidating vital information from the respondents on the effects of housing conditions in the selected area of study. Purposive and simple random sampling techniques were adopted and a total number of 387 respondents were fit for the study. Structured questionnaire instrument, interview and personal observation facilitated in the gathering of information. Collated data were presented and analyzed using tables, percentages, and means; while the hypothesis was tested using Chi-Square in determining the relationship between housing condition and the health of the residents. Major findings from the study revealed that majority of buildings in the study area were rented tenement buildings with over 40 years of age. There were cases of broken floor, broken doors and windows, leaking roof, poor electricity and water supply, cracked wall and indiscriminate waste disposal constituted the housing and environmental problems. Available health issues' responses include skin disease, malaria fever, typhoid fever, diarrhea, cholera, depression and anxiety and genitourinary tract infection as the prevalent health challenges faced in the study area. The respondents were satisfied with the refuse collection and disposal method; but were dissatisfied with the toilet location, very dissatisfied with the drainage and sanitation conduct in the area. Based on the six identified significant measures for improving housing conditions in the study area, relevant recommendations were made for implementing development plans and planning schemes.

Keywords: Housing, Environment, Waste, Sanitation, and Health.

INTRODUCTION
Housing is more than a mere structure for provision of shelter. This is being regarded as one of the three basic needs of mankind and it is the

most important requirement for the physical survival of man after food (Owolabi, 2017). It determines to a large extent the success and identity of man and is also seen as a tool for social advancement (Agbola, 2015). Housing is defined as the process of providing functional shelter in a neighbourhood day-to-day living and activities of individuals and families within the community with its services and utilities (National Housing Policy, 2006). Housing condition on the other hand is the totality of the physical, environmental and the satisfaction level of a particular dwelling unit measured against some variable of livability at a particular time (Owolabi, 2017). Researchers over the years have established the fact that good housing conditions are indispensable in improving household health (Ekpetere, Ekeh and Eziechi, 2019). Poor housing and environmental conditions can predispose to adverse health problems including infectious diseases (respiratory disorders), stress and depression. Taking New York as a case study, Althoff, Karpati, Hero and Matte (2019) opined that poor housing and neighbourhoods conditions such as overcrowding, toilet breakdown, heating breakdown, presence of rats and mice, cracks and broken plaster resulted in all-mortality rates, diabetics, chronic lung disease and asthma. Using a more detailed analysis, the world health Organization (WHO) in 2016 conducted a study in 8 European cities to reveal disparities in housing and housing hazards. The study revealed that low-income housing had more than one type of hazard and the prevalence of hazards was much higher compared to other forms of housing types.

In the Philippines, more than 70 million people live in substandard housing and this is projected to grow to 113 million people by 2030 (Stanford, 2022). This ugly situation had resulted in the spread of diseases, infant mortality and a reduced health status of its citizens both in urban and rural areas of the Philippines (World Bank, 2019). This statistic resonates that of the World Health Organization (2019) who reported that people with poor health and negative wellbeing are more likely to live in poor housing and that improving housing conditions will improve health and save money.

In Africa, the housing problem is both quantitative and qualitative (Oladapo, 2016). Quantitative in the sense that there exist massive

housing deficits and qualitative in the sense that available housing units were devoid of basic amenities and services leading to the proliferation of slums (Aribigbola and Ayeniyu, 2014; Omede, 2014). In Nigeria, the Federal Housing Authority's (FHA) failure to adequately provide decent housing for its populace means that available units would be overcrowded, dilapidated and unfit for human habitation (Onibukun and Faniran, 2015). It is estimated that almost 75% of Nigeria's urbanities live in slums (Olotuah and Bobadoye, 2019) where access to basic amenities and services proves impossible. In Ebonyi State and Abakaliki Metropolis in particular, the decaying and dilapidated housing units in the Old and New Kpiri-kpiri areas point to the fact that all is not well with the health and wellbeing of residents living in the area (Nwofe, 2015). This can be attributed to poor state of physical planning, attitude of residents, substandard building materials and poor maintenance culture by the local authority and residents. Many studies have confirmed that there was a positive correlation between the population's quality of life and the quality of its houses and suggested that improving the standards of existing houses should be the main focus of housing policies (Odalapo, 2016; Ozdemir, 2014). This is necessary since poor housing conditions could in time lead to major health problems for residents (Adetunji and Isah, 2015; Wan and Su, 2016). In this study therefore, efforts were made to overview the housing conditions of the Abakaliki area of Ebonyi state, and establish their relationship with the health of the residents.

REVIEW OF RELATED LITERATURE

The concept of the term housing, its conditions and relations to health status of the residents, nature of housing problems in Nigeria and the research gaps in this area formed the main focus of this review of related literature.

Concept of Housing and Housing Conditions

The World Health Organization (WHO) (2014) describes housing as residential environment which includes the physical structure used for shelter, all necessary services, facilities, equipment and devices needed or desired for the physical and mental health and social well-being of the family and individuals. The United Nations Ad-Hoc Group of Experts

on Housing and Urban Development equally asserted that housing is neither a mere shelter nor household facilities alone (United Nations, 2015). It is an essential need that comprises essential services and facilities, which makeup a physical environment that link such individuals and his family to the community in which it evolves. Therefore, environmental amenities like waste disposal, water supply, road access and location services implied by the special links between necessary economic and social infrastructure like education, health and recreation are all parts of the package of services designated as housing (Aribigbola, 2015).

Housing is essential to meet basic needs, such as being sheltered from extreme weather and climate conditions. Housing should offer people a suitable place to sleep and rest, where they are free of risks and hazards. In addition, housing should give a sense of personal security, privacy and persona space. Finally, housing is important to satisfy other essential needs, such as having a family. All these elements make a "house" a "home" and are intrinsically valuable to people. Housing is a basic human need that Maslow explained in the hierarchy of needs; and it is the first level of need similar to food and drink (Manitoba, 2015). Housing is not just a physical shelter of four walls and a roof; it is about the quality and condition that was expanded in the second level of Maslow hierarchy of need. At this level, Maslow's theory demonstrates on how important adequate housing is for the security and positive development. Housing usually has a significant impact on dweller's safety and wellbeing. This study is aimed at discussing in detail the concept of housing and housing conditions. In fact, any definition of housing condition needs to encompass on a range of factors that determine the house to be good/bad (Barnes, 2016). The obvious one is the physical condition; housing may be deemed to be bad if it is damp, infested, cold, or in a bad state of repair. Housing may also be considered too bad if it is unable to accommodate the number of people inhabiting it. The environment in which the housing is located is also important.

Relevant neighbourhood factors include access to amenities, and environmental pollution is also essential. Security of tenure, the status people attach to housing and the levels of community safety and cohesion

in an area are all important features. Housing size, quality, neighbourhood, location and household composition in any analysis of housing seems to be very important measure (Rowley and Ong, 2015). According to Stone (2016) "Housing quality cannot be ignored". The wider concept of "housing" need encompasses many of subjects like housing size, quality, neighbourhood, location, and household composition (Stone, 2016). Indeed, many more can be said on housing condition, but the important argument is on the relationship between housing conditions and wellbeing.

Housing Condition and Health Status of Occupants

The impact of housing situation does not only affect a person's state of bodily health, but also their feelings of wellbeing and general ability to cope with everyday life. The World Health Organisation defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). The exact relationship between poor housing and health is complex and difficult to quantify. Research based on the various sources of housing and health data indicates that poor housing is associated with increased risk of cardiovascular diseases, respiratory diseases; depression and anxiety, rheumatoid arthritis, nausea and diarrhea, infections, allergic symptoms, hypothermia, physical injury from accidents and food poisoning (Center for Disease Control and Prevention, 2005).

Good physical and mental health depend on having homes that are safe and free from physical hazards. Krieger and Higgins (2002) and Shaw (2004) opined that adequate housing can protect individuals and families from harmful exposures, provide them with needed privacy, security, stability, control and capable of making significant contribution to health; contrariwise, when the condition of housing is poor and inadequate, it may result in infectious and chronic diseases, injuries and poor childhood development. British Medical Association (2003) observed that ill health may serve as disincentive while seeking regular employment and the purchase of life insurance; these are common prerequisites for obtaining a mortgage. Even if they are successful to obtain a mortgage, those with poor health may be limited in choice to the cheaper and less attractive part of the sector.

According to WHO (2009), people with poor health and negative wellbeing are more likely to live in poor housing and that improving housing conditions will improve health and save money. There are many diseases that have been linked with poor housing conditions. Deteriorating paint in old homes has been identified as the primary source of lead poisoning for children, who are exposed to paint chips and inhale lead-contaminated dust (Jacobs, 2002). It was reported by WHO in 2009 that those living in homes that are damp and mouldy are at increased risk of experiencing health problems such as respiratory infections, allergic rhinitis and asthma. Presence of mould in building can pose health risk to babies, young children, elderly people, those with skin diseases and the people undergoing chemotherapy. The most susceptible among these groups are children (Spengler et al., 2004). Tomlinson (2007) described the link between poor housing conditions, HIV and AIDS as multiple and complex. For example, high densities, overcrowding and housing conditions increase the risk of opportunistic infections. Inadequate water and sanitation increase the probability of being infected and pose challenges to provision of home-based care. Cooper et al. (2008) established that overcrowding and some other aspects of a poor home environment contribute to mental stress and reduce people's sense of general wellbeing. House design, poor state of maintenance and climatic condition of buildings environment can expose residents to excessive cold. Krieger and Higgins (2002) attributed cold indoor conditions with poorer health and increased risk of cardiovascular disease.

A study by Asenso-Okyere (2014) of malaria in Kojo, Ashong, Barelcuma and Oyereko all from the Greater Accra Region of Ghana revealed amongst others that the factor that were perceived as causing malaria include mosquitoes, flies, dirty surroundings, unsafe water, bad air and poor hygiene. All these have link with poor housing condition. Substandard housing conditions are associated with a wide range of health conditions such as asthma, lead poisoning respiratory infections, injuries, and mental health, Rat infestations is an indication of a disadvantaged and unkempt environment and studies have shown an association with older housing in poor condition; homes in multiple occupation; ageing infrastructure; and poor environments in neighbourhoods of social and economic deprivation. Bamgboye (2006) in

a with the level of indoor hygiene, sanitation being practiced by the students and overcrowding.

Nature of Housing Problems in Nigeria and Empirical Review Gap

In Nigeria, even without accurate data on the nation's housing stock, earlier studies and observations strongly suggest quantitative and qualitative housing problems across the country (Agbola, 2018). Ademiluyi (2017) opined that policymakers in Nigeria are not really aware of the magnitude of the housing problems facing the low-income earners in the country. Awotona (2017) on the other hand was of the view that the alarming increasing high rent is a pointer to the fact that there is a shortage in housing stock. Most scholars on Nigeria's housing issues have assessed the condition of housing in urban centers as inadequate. Onibokun (2017) found that 22.3% of houses nationwide were dilapidated. More importantly, there is need to determine the health implications of this inadequacy and lowering standards.

ABAKALIKI METROPOLIS – THE STUDY AREA

Location: Abakaliki is the capital city of Ebonyi State in Southeastern Nigeria (Figure 3.1). It is located 64 kilometres (40 miles) southeast of Enugu (Dale, 2014). It lies between latitudes 6°34′20″ to 6°41′20″N and longitudes 7°34′20″E to 8°05′30″E. It is bounded to the North by Izzi and Ebonyi Local Government areas; to the East by Ezza North; to the West by Cross River state and to the South by Ikwo and Ezza Sotuh Local government areas.

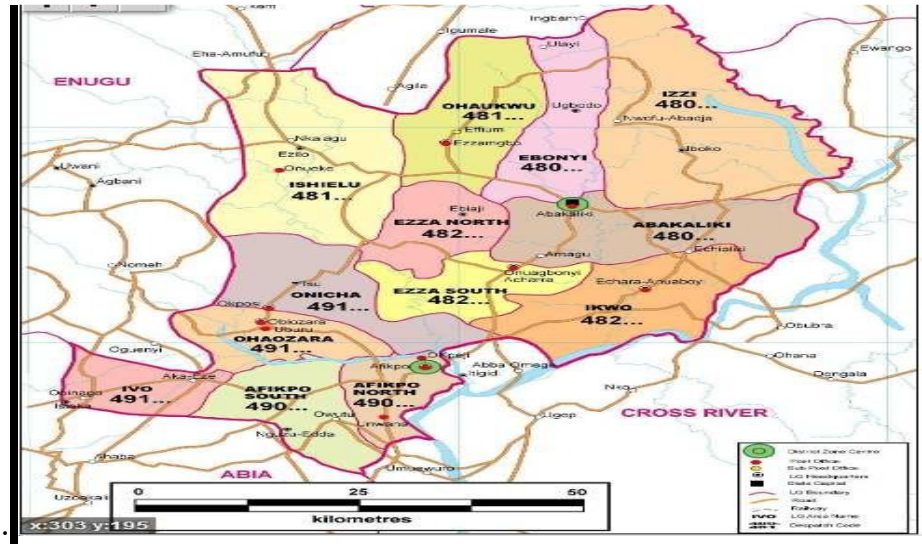

Figure 3.1: Map of Ebonyi State showing Abakaliki and Other LGAs
Source: ResearchGate.net, Publication (2013)

Origin, Physiography and Climate

The name Abakaliki originated from 'Aba Nkaleke' which is name of a community in Izzi land (Nkaleke) (Dale, 2014). The relief of the area is generally undulating and no location exceeds 400 m above-sea-level. A major relief structure is hills formed by the pyroclastic bodies. Two main seasons exist in the Abakaliki area, the dry season which lasts from November to March and the rainy season which begins in April and ends in October with a short period of reduced rains in August commonly referred to as "August break" (Aghamelu, Nnabo and Ezeh, 2017). Temperature in the dry season ranges from 20 to 38°C, and results in high evapotranspiration, while during the rainy season temperature ranges from 16 to 28°C, with generally lower evapotranspiration. The average monthly rainfall ranges from 31mm in January to 270 mm in July, with the dry season experiencing much reduced volume of rainfall unlike the rainy season, which has high volume of rainfall. Average annual rainfall varies from 1,500 to 1,650 mm. These climatic conditions are responsible for the development of thick lateritic soils in the area.

Geology and Hydrology

It is underlain by the Abakaliki Shale Formation of the Asu River Group (Reyment, 2015). The Asu River Group sediments are predominantly

shales, and localized occurrences of sandstone, siltstone and limestone intercalations (Ofoegbu and Amajor, 2014). The Major River that drains the area is the Ebonyi River and its tributaries: Udene and Iyiokwu Rivers. Both tributaries are perennial and usually overflow their banks at the peak of the rains.

Major Economic Activities

The major economic activity within the Abakaliki area is subsistence agriculture. Statistics show that more than 60% of the population is engaged in it. One of the main cash crops grown is rice. This has necessitated setting up of rice milling industries in the Abakaliki area. The available land for agriculture is fertile and supports rice and cassava cultivation. The main industries in the area, apart from rice milling industry, are quarrying and rock crushing. Lead-zinc mining occurs around Enyigba and Ameka; in the outskirts of Abakaliki metropolis. The traffic comprising mainly of heavy-duty vehicles, resulting from the transportation of agricultural produce and other economic activities, mount pressure on the existing road and highway networks in the area.

Population and Ethnic Composition

The population of Abakaliki was estimated to be 915,438 in the year 2019. This was 0.253% of total Nigerian population. Also estimated in 2021 as about 1,179,280 (Dale, 2014). The population for the study areas had recently being experiencing significant increase due to the massive infrastructural development in the state. For Agbaja-Nnuphu, the population is put at over 300,000 persons while Ntezi-Aba is put 298,000 while Nkaliki-Unuphu population is put at 278,000 (World Population Review, 2023).The area is generally populated by the Igbo people. Abakaliki is predominantly populated by the Northeastern Igbo of the Afikpo-Abakaliki axis. Abakaliki is also used to refer to people of old Abakaliki political block comprising Ohaukwu-Ishielu-Izzi-Ezza-Ikwo.

Infrastructure

Abakaliki lies at the intersection of the Enugu, Afikpo and Ogoja Roads (Dale, 2014). It hosts a Federal hospital, which has largely contributed to the affordability of public healthcare delivery in the city and the state. There has been a massive infrastructural development ongoing in the

urban center; these include road construction, shopping malls and market places, trans-Sahara fly-over bridges at presco and spera-in-deo junctions amongst others.

RESEARCH METHODOLOGY

The research population included residents, informal sector operators, town planners and other stakeholders of the built environment domiciled in Abakaliki metropolis. The study location was delimited to Agbaja-unuphu, Ntezi and Nkaliki-Unuphu using the 2006 population figures and (National Population Commission, 2006) and projected to 2022 with growth rate of 3% as recommended for Nigeria by the United Nations Population Fund (UNFPA, 2001) as contained in table 4.1:

Table 4.1: Projected population of selected areas of Abakaliki Metropolis

Area	2006 Population		2022 Population		Total
	Male	Female	Male	Female	
Agbaja-Unuphu	17,706	18,526	26,028	27,233	53,261
Nteze-Aba	13,534	18,516	19,895	27,219	47,114
Nkaliki-Unuphu	15,364	18,759	22,585	27,575	50,160
Total	**46,604**	**55,801**	**68,508**	**82,027**	**150,535**

Source: National Population Commission (2006) and Researchers' Projection

The study employed the survey research design involving qualitative and quantitative method with special attention paid to the issue of sampling. Data were obtained through primary and secondary sources. Primary data source include a well-structured questionnaire, oral interview and personal observation. Secondary data source for the study include web pages, journals, periodicals, newspapers and textbooks.

The primary sources of data included the following:

In determining the sample size for the study, Taro Yameni (1976) method was employed. Purposive and simple random sampling techniques were employed for the study. Purposive sampling entailed that only indigenes of the selected areas of Abakaliki were available for sampling. Simple random sampling ensured that respondents were chosen randomly thereby giving no room for bias. Following this pattern, 399 questionnaire were administered in the areas selected with the help of field assistants to gain vital information in arriving at veritable findings and conclusion. Collation shows a 97% return on questionnaire.

The research analyses results were compiled in a data base using the Statistical Package for Social Sciences (SPSS). The analysis was carried out using SPSS. Two types of statistical tools were employed in the study, descriptive and inferential statistics. Descriptive statistics inform of frequencies, mean were employed with 5-point rating linkert scales indicating the level of responses for goodness/poor, Level of satisfaction, and significance. For the inferential statistics, Chi-Square (X^2) test facilitated achievement of the aim of the study. Chi-square is a statistical tool used in testing hypothesis when the data are in nominal or ordinal form. The chi-square test is an important tool in hypothesis testing when there is need to compare cultural or observed distribution with a hypothesis or anticipated one, and this is often referred to as goodness of fit. The computation is based on the difference between the actual and expected value.

Data Presentation, Analyses and Discussion of Findings

The analyzed data were presented, and findings discussed accordingly in this section.

Environmental and Housing Conditions and Sanitation in the Study Area

The housing condition in the three (3) selected areas, at Agbaja-Nnuphu, out of 139 houses investigated the majority (30%) were in fair states. 26% were poor; 19% in good conditions; 14% in very poor conditions while 11% in very good condition. For Ntezi-Aba, analysis revealed that out of the 122 houses studied, only 9% of them were in very good conditions. Majority (54%) of the houses were in fair conditions; 14% in good conditions; 13% in poor conditions and 10% in very poor conditions. For Nkaliki-Nnuphu, results showed that majority (36%) of the 126 houses investigated were in poor conditions. 25% were fair; 17% were good; 15% were very good while 6% were very poor. Overall, it can be deduced from the analysis that majority (36%) of the houses in the selected areas of Abakaliki Metropolis were in fair conditions while only 12% were in very good conditions. This therefore implies that urgent intervention measures like repairs and rehabilitation is required in the selected areas of the study area.

Residents Perception of their Housing and Environmental Quality and in the Study Area

Satisfactory level of toilet location shows that 4% of the cases surveyed had their toilet location very satisfied, 9% of the respondents had their toilet location fairly satisfied and 27% of the surveyed area are satisfied in the location of their toilet, while 34% are dissatisfied while 26% are very dissatisfied with their toilet location. As for sanitation, 4% of the residents are very satisfied, 10% of the residents are fairly satisfied in their sanitation conduct, 14% are satisfied based on their sanitation conducts, 25% are dissatisfied in their sanitation conduct, while 47% of the residents are very dissatisfied. On the quality of their environment, 8% are satisfied, 18% are fairly satisfied, 20% are satisfied, 29% are dissatisfied, 25% are very dissatisfied. The study also has it that 97% of the respondents regarded maintaining their house and the entire surroundings as important and necessary notwithstanding the state of housing conditions.

Housing and Environmental Problems' Analysis of the Study Area

Results from table 5.22 shows that out of the 10 identified housing and environmental situations, 6 were significant in the selected areas as they recorded mean scores above the benchmark of 2.49. These include broken floor (m=4.0), broken doors and windows (m=3.70), leaking roof (m=3.60), poor electricity and water supply (m=3.18), indiscriminate waste disposal (m=2.81) and cracked wall (m=2.52). However, presence of mould in room (m=1.70), foul and polluted air (m=1.80), poor ventilation (m=1.70) and outbreak of disease (m=1.80) were not significant in the selected areas of Abakaliki Metropolis as their mean scores were below the cutoff point of 2.49. The above result shows that more attention is needed to improve the living condition of urban dwellers in the selected areas.

Table 5.24: Prevalent Diagnosis and Frequency Analysis in the Study Area

Diagnosis	Very often 5	Often 4	Sometimes 3	Rarely 2	Never 1	Mean	Remark
Respiratory disease	23	63	25	102	174	2.12	Accepted
Skin disease	222	56	65	36	8	4.16	Accepted
Malaria fever	169	102	96	17	3	4.10	Accepted
Typhoid fever	152	98	93	28	16	3.90	Accepted
Genitourinary tract infection	65	96	59	93	74	2.90	Accepted
Diarrhea	68	79	103	93	44	3.10	Accepted
Cholera	56	53	98	153	27	2.90	Accepted
Asthma	23	22	19	235	88	2.10	Not accepted
Depression and anxiety	63	122	96	59	47	3.25	Accepted

Source: Field Survey, 2023

Table 5.24 shows the prevalent diagnosis and its frequency among respondents in the study area. From the analysis, skin disease (m=4.16), malaria fever (m=4.10), typhoid fever (m=3.90), depression and anxiety (m=3.25), diarrhea (m=3.10), cholera (m=2.90) and genitourinary tract infection (m=2.90) were prevalent diagnosis among the respondents of the study area. However, respiratory disease (m=2.12) and asthma (m=2.10) were not common health challenges faced by the residents of the areas. The majority (62%) of the respondents also agreed that housing and environmental conditions influences their health status. 25% strongly agreed; 8% were indifferent; 4% disagreed; while only 1% strongly disagreed.

Measures for Improving Housing and Environmental Conditions in Abakaliki Metropolis

From the results of the analyses, it was also revealed that all the six (6) identified measures for improving the conditions were significant in improving the housing conditions in the study area as they all recorded means cores above the benchmark score of 2.49. These include reduction in the cost of building materials (m=4.50), timely rehabilitation of ageing buildings (m=4.41), effective and strict implementation of development control and planning guidelines (m=4.10); provision of adequate housing

and environmental facilities in homes and neighbourhoods (m=3.60), improvement in the education and income level of residents (m=3.60) and implementation of housing policies (mass housing development) (m=3.22). Results from the interview of town planners in the state were also in tandem with the results of the study. Measures as elucidated from town planners include urban renewal programme for the area, strict adherence to the 2006 Building Codes (building materials, height, building type, etc.), heavy fines on tenants and landlords whose houses constitute nuisance to the public, the discouragement of open defecation and indiscriminate waste disposal.

Testing of Hypothesis: The details were provided in the table as summarized below.

Table 5.27: Chi-Square Results from the test Hypothesis:

	Value	Df	Asymptotic significance (2-sided)
Pearson Chi-Square	648.604[a]	16	.000

Chi-Square Value = 648.604
P Value = .000
Level of significance (α) = 0.05

Decision Rule:

Reject Ho, if p value is less than level of significance and accept Ho if otherwise.

Since P value = .000 and Level of significance = 0.05; Therefore, Ho is rejected because p value (.000) is < (less than) level of significance which is 0.05. The implication of this result is that the null hypothesis (Ho) was not accepted, which states that there is no significant relationship between the housing conditions in Abakaliki metropolis and the health conditions of the dwellers and H_1 is accepted which means that there is significant relationship between the housing and the health conditions of the residents.

DISCUSSION OF FINDINGS

Analysis revealed that majority of the respondents resided in rented tenement buildings of over 40 years. The result also showed that majority of the buildings were deteriorated and in fair conditions needing urgent rehabilitation. This result is in line with that of Onibokun (2017) and Olotuah (2016) who found that majority of buildings were in poor conditions not suitable for human habitation in Nigeria in Akure respectively. It is also to note that the age of buildings, occupancy level and educational background of respondents contributed greatly to the state of the buildings as opined by Olotuah (2016), Yoade (2015) and Yoade et al (2015).

On the residents' perception of their housing and environmental sanitation in the selected area, analysis revealed that respondents were only satisfied with the refuse collection and disposal methods employed in the selected areas. They were dissatisfied with the toilet location, quality of environment and resident's behavior. However, the respondents were very dissatisfied with the drainage and sanitation conduct in the area. The result also showed that the maintenance of houses and surrounding was very necessary as opined by the respondents. From the research, it was evident that the indicators of housing quality (the physical condition of buildings, environmental sanitation, accessibility and availability of facilities, building materials among other) were low in the selected areas. This result is also in tandem with the result of Ibem and Amole (2017) who averred that majority of residents are very dissatisfied with the general condition of their houses, facilities and neighbourhoods.

The analysis also showed that majority of the respondents had taken ill while residing in the area with skin disease, malaria fever, typhoid fever, diarrhea, cholera, depression and anxiety and genitourinary tract infection being the prevalent diagnosis in the selected areas. The study also revealed that majority of the respondents agreed that their housing and environmental conditions greatly influence their health status. This result corroborates that of Ilesanmi (2014) who averred that majority of buildings in Lagos had a number of defects which requires urgent maintenance, repairs and renovations. On the prevalent diagnosis, the

findings reverberates that of Ahianba (2018), and Asenso-Okyere (2014) who opined that decayed housing impacts the health of city dwellers causing sicknesses like malaria and mental stress among others.

On the measures for improving housing and environmental conditions in the selected areas, the result of the analysis revealed that all the identified measures were significant in improving the housing conditions in the study area. Notable among them include reduction in the cost of building materials, timely rehabilitation of ageing buildings, effective and strict implementation of development control and planning guidelines among others. Result from the interview session with town planners also indicated urban renewal, heavy fines on offending tenants and landlords among others. This result is in tandem with that of Ibem and Amole (2017), Olotuah and Taiwo (2019) who stated that more attention should be placed on providing adequate facilities and the use of local construction materials in buildings which is less expensive and durable.

CONCLUSION

This study has focused on the impact of housing condition on the urban dwellers of Abakaliki Metropolis, Ebonyi State, Nigeria. The condition of housing and environmental sanitation in the study in the study area is deteriorating due to inadequate infrastructure such as, drainage, refuse disposal system, lack of proper maintenance of buildings, the age of the buildings and the socio-economic status of the respondents such as their level of education, occupational status and income level. The study has again brought to the fore, crucial matters regarding housing and the deplorable conditions in which the vast majority of Nigerians live. The truth of the matter is saddening, and is not an issue to be taken with levity. It is unfortunate however, that this situation has persisted for too long without any hope of alleviation in sight. It is hoped that in the next too distant future, when a similar study is carried out, the result will depict a different situation.

RECOMMENDATIONS

In line with the findings and conclusion of the study, the following recommendations were put forward for adoption.

1. Standard timely repairs and renovation of building fabric and components should be enforced as mandatory activity for landlords in order to ensure reduced rate of deterioration and dilapidating in buildings, in the study area.
2. Total compliance with monthly sanitation exercises should be adhered strictly by the residents and heavy fines imposed on defaulters.
3. Building of new houses with local and environmentally friendly building materials in the area will be encouraged to reduce rapid environmental deterioration, health and mental problems associated with poor housing condition.
4. The governments at all levels should enforce laws like the 2006 Building Codes and the Nigerian Urban and regional Planning Law of 1992 which makes for good living conditions without further delay.
5. Private sector organizations and individuals should be encouraged to go into mass housing schemes to augment the efforts of governments. This will help to reduce the high rent and overcrowding being experienced in urban centers of Nigeria.
6. Town planners must insist that development plans and planning schemes are implemented to the latter. Also, officers on development control must carry out their duties accordingly without fear or favor. This will help to reduce encroachment, proliferation of slums and unwanted vices in the area.
7. The involvement of Environmental Health Officers should be made more active in housing and environmental planning and development.
8. Mortgage and loans facilities should be extended to the residents of the area to afford them the opportunity to build their own houses, while planning schemes should be prepared and implemented in the study area to ease the burden on existing housing stock.

REFERENCES

Ademiluyi, I.A. (2017). Public Housing Delivery Strategies in Nigeria: A Historical Perspective of Policy and Programme. *Journal of Sustainable Development in Africa12* (6): 153-161

Adetunji, M. A., Isah I. O. (2015). Urban housing quality and its health implications in Nigeria: An example of Lokoja, Kogi State, Nigeria. *Ethiopian Journal of Environmental Studies and Management 8*(5): 570-578.

Agbola, T. (2018). The Housing of Nigerian: A review of policy development and Implementation. Research Report No. 14.

Agbola, T. (2015). Assessing Private Sector Participation in Housing Delivery in Nigeria" A paper presented at a One Day Continuing Professional Development Workshop of the Ogun State Chapter of the Nigerian Institution of Estate Surveyors and Valuers, in Gateway Hotel, Abeokuta. October 28, 2015.

Aghamelu, Nnabo and Ezeh (2017). Geotechnical and environmental problems related to shales in the Abakaliki area, Southeastern Nigeria. *African Journal of Environmental Science and Technology 5*(2), 80-88

Ahianba, J. E. (2018). *Built environment decay and urban health in Nigeria,* Journal of Human Ecology 23(3): 259-265.

Althoff, T., Karpati, D. A., Hero, R. and Matte, B. (2019). Large-scale physical activity data reveal worldwide activity inequality. *Nature; 547*: 336–339.

Aribigbola, A., Ayeniyo, O. I. (2014). Sites-and-services as a strategy for achieving adequate housing in Nigeria in 21st Century. *International Journal of Humanities and Social Science 2*(2): 126-132.

Asenso-Okyere, K. (2014). Socio-economic factors in malaria control, *World Health Forum, 15*(3), 265 – 268

Awotona, A. (2017). A contextual analysis of architectural, planning and housing development in rural Nigeria. *Journal of the Nigerian institute of architects, 4*(1), 13-20

Bamigboye, A.P. (2006). Rat Infestation in a Typical Nigerian University Halls of Residence: Implications for Hygiene and Sanitation. *Research Journal of Agriculture and Biological Sciences,2*(6): 328-331

British Medical Association (2003). Housing and health: building for the future. *London: British Medical Association.*

Coker, A. (2018). Challenges of urban housing quality and its associations with neighborhood environments: Insights and experiences of Ibadan City, Nigeria. *Journal of Environmental Health Research 7*(1): 21-30.

Cooper, R., Boyko, C. and Codinhoto, R. (2008), "The effect of the physical environment on mental wellbeing", State-of-Science

Review: SR-DR2, Mental Capital and Wellbeing: Making the Most of Ourselves in the 21st Century, Government Office for Science, London.

Dale, H. (ed) (2014). *Abakaliki*. Encyclopedia Britannica. Vol. 1: A-ak Bayes (15th ed.) Chicago, IL

Ekpetere, O. K., Ekeh, O. F. and Eziechi, M. N. (2019). Housing Conditions in the FCT, Abuja-Nigeria: A Case Study of Gwagwalada Satellite Town. *Journal of Environment and Earth Science 9*(4), 105-118

Ibem, E. O., Amole O. O. (2017). Assessment of the qualitative adequacy of newly constructed public housing in Ogun State, Nigeria. *Property Management 29*(3): 285-304.

Ilesanmi, A. O. (2014). Post-occupancy evaluation and residents' satisfaction with public housing in Lagos, Nigeria. *Journal of Building Appraisal 6*: 153-169.

Jacobs, D. E. (2002). Environmental health disparities in housing. *Journal of American Public Health Association.101 Supplementary 1*: S115–22.

Krieger, J. & Higgins, D.L. (2002). Housing and Health: Time Again for Public Health Action. *American Journal of Public Health*, 92(5), 758 - 768.

National Population Commission, (2006). Nigeria's over 167 million Population: Implications and Challenges. Retrieved from: www.population.gov.ng/index.php/84-news/latest/106-nigeria-over-167-million-population-implications-and-challenges

Nwofe, P. A. (2015). Determination of the Generation Rate of Solid Waste in Abakaliki Metropolis, Ebonyi State, Nigeria. *Continental Journal of Environmental Sciences 7* (2): 1 – 3

Ofoegbu, C. O. and Amajor, L. C. (2014). A geochemical comparison of the pyroclastic rocks from Abakaliki and Ezillo, southeastern Benue Trough. *Journal of Minerals and Geology, 23*(1 - 2): 45-51.

Oladapo, A. A. (2016). A study of tenants' maintenance awareness, responsibility and satisfaction in institutional housing in Nigeria. *International Journal of Strategic Property Management 10*: 217-231

Olotuah, A, O. (2016). The physical and socio-economic dimension to housing quality: an empirical investigation of a city suburb. *African Journal of science, 4*(1): 799-810.

Olotuah, A. O. and Bobadoye, S. A. (2019). Sustainable housing provision for the urban poor: A review of public sector intervention in Nigeria. *The Built and Human Environment Review 2*: 51-63.

Olotuah, A. O. and Taiwo, A. A. (2019). Housing the urban poor in Nigeria through low-cost housing schemes. *International Journal of Physical and Human Geography 1*(3): 1-8.

Omede, K. F. (2014). An assessment of housing conditions and socio-economic life styles of slum dwellers in Akure, Nigeria. *Contemporary Management Research 6*(4): 273-290

Onibokun, P. (ed) (2017). *Urban Housing in Nigeria.* NISER Ibadan.

Onibokun, A. andFaniran, A. (2015). *Urban research in Nigeria*. Institute Francais de Recherche en Afrique, Ibadan.

Owolabi, B. O. (2017). Effect of Housing Condition and Environmental Sanitation on the Residents of Oyo State, Nigeria. *International Journal of Research in Environmental Science 3(3) 20-36*

Ozdemir, O. B. (2014). *Reinvestment decisions and rehabilitation of housing*, in Ural, O., Abrantes, V., Tadeu, A. (Eds.), Conference Proceedings on Housing Construction – an interdisciplinary task, Coimbra, Portugal, 3, 1927-1934.

Reyment, R. A. (2015). Aspects of Geology of Nigeria. Ibadan University, Ibadan, 145.

Spengler, J.D. (2004). "Housing characteristics and children's respiratory health in the Russian Federation", *American Journal of Public Health, 94:* 657–662.

Stanford, J. (2022). Resilient Housing in the Philippines, in the Era of COVID-19. Available Online: https://buildchange.org/resilient-housing-in-the-philippines-in-the-era-of-covid-19/ [Assessed 23/02/2023]

Stone, M. E. (2016). What is Housing Affordability? The Case for the Residual Income Approach. *Housing Policy Debate, 17*(1), 151-184

Tomlinson, (2007). Impact of HIV/ AIDS at the local level In South Africa, Report commissioned by UMP/ UNCHS.

Wan, C. and Su, S. (2016). Neighborhood housing deprivation and public health: Theoretical linkage, empirical evidence, and implications for urban planning. *Habitat International 57*: 11-23

World Bank (2019). *Sustainable Sanitation.* Available at: http://www.NETSSAF.net. Accessed 11 March 2023

World Health Organization (2019). International Workshop on Housing, Health and Climate Change: Developing guidance for health protection in the built environment mitigation and adaptation responses. Geneva, 13 – 15, October 2019.

World Health Organization (2016). WHO Country Cooperation Strategy (CCS). Federal Republic of Nigeria 2002 - 2014. WHO Regional Office for Africa Brazzaville.

WHO (2009). Global Health Risks - World Health Organisation. www.who.int/healthinfo/... /GlobalHealthRisks_ report_full.pdf.

Yoade, A. O. (2015). Physical characteristics of core area of Ife-Ile, Nigeria. *Analele Universitatii din Oradea, Seria Geografie 25*(2): 137-147.

Yoade, A. O., Adeyemi, O.O. and Adeyemi, B.B. (2015). An assessment of housing and neighborhood quality condition in Ilesa, Nigeria. *Analele Universitatii Oradea, Seria Geografie 25*(2): 242-252.