

HOUSING CONDITIONS AND HEALTH OF RESIDENTS IN IBADAN NORTH LOCAL GOVERNMENT AREA, IBADAN, OYO STATE, NIGERIA

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ABSTRACT

Many health issues can be traced to housing condition. Building material, household equipments, size of building and building design are direct or indirect drivers of many human health problems. The study examined relationship between housing condition and the health status of the residents in Ibadan North Local Government area. Questionnaire was administered using household sampling technique. Simple random sampling was employed in carrying out the research to select samples for the study. This involves numbering of the buildings in the localities and ballot system was used to select 308 buildings out of 28,020 buildings in the study area for this research. Findings revealed that the housing condition of many of the houses observed can be said to be in poor state. Over 150 sampled household do not have adequate or adhere to the stipulated housing standard of 3cm air space, while half of the sampled household lacked adequate solid waste disposal method. Hospital records revealed that the illness often complained and diagnosed are plasmodiasis, typhoid, infections, and headache among others. Many of which can be traced to poor housing and environmental condition. The study recommends that inhabitants must ensure adequate space and protection against the following adverse conditions such as cold, damp, heat, rain, wind or other threats to health or structural hazards. Planning authorities must improve monitoring of newly constructed building to ensure they comply with the set space standards. The role of housing unit landscape in providing visual satisfaction, which has a profound effect on the psychological nature of man and also serve as carbon sink resulting from human activity within the environment also needs to be well reinstated.

Keywords: Housing, Condition, Health, Residents

INTRODUCTION

Housing goes beyond the materials used in its construction but a collection of facilities that makes the designed building efficient, functional and livable by human all and individual human standards. Housing represents a place of satisfaction, safety, characterised by human protection, a place of human abode and dwelling. It encompasses the totality of the environment and infrastructure which provide human comfort, enhance people's health and productivity as well as enable them to sustain their psycho-social or psycho-pathological balance in the environment where they find themselves [1]. Housing is one of the most important necessities of mankind and is known to tremendously affect human well-being. It is widely acknowledged that adequate housing is essential for good life, is a key requirement for an efficient and satisfied labour force and the foundation of satisfactory community life.

Health can be defined as a state of a complete physical, mental and social well-being and not merely the absence of disease or infirmity [44]., while environmental health encompassing those elements of human health that are influenced by physical, social, chemical, biological and psychological factors in the environment[43]. The relationship between human health and the environment cannot be over-emphasized, studies established that housing can affect mental and physical health, both positively and negatively [20; 21;23;24]. Health hazards and various incidences have been traced to the human housing condition. The intimate connection between housing and health has been well known for more than a century [11]. Sequel to this, Jeff [25] observed the relationship between inadequate housing infrastructure (in terms of inadequate supply of potable water, sanitation) and housing, which is to the risk of human health and the environmental in general. Poor housing conditions are associated with a wide range of health conditions, including respiratory infections, asthma, lead poisoning, injuries, and mental health. Addressing housing issues offers public health practitioners an opportunity to tackle an important social determinant of health. Public health has long been involved in housing issues. In the 19th century, health officials have targeted poor sanitation, crowding and inadequate ventilation to reduce infectious diseases as well as fire hazards to decrease injuries. Human health status is often a reflection of their dwelling unit, World health organisation [43] observed that dwelling unit overcrowding have great impact on the health of children, particularly in terms of respiratory conditions, skin infections and meningitis, and possible mental health. Most of which has been traced to housing poverty. Okewole and Aribigbola [37] stated that the quality of housing within any neighbourhood should not only satisfy minimum health and good living standards, but should also be affordable to all categories of households. The type of house, settlement pattern, the housing conditions [including lighting, ventilation, heating] and the presence of domestic animals all leads to human ill health condition [28]. Okewole and Aribigbola [37] also argue that changes in the built environment can result in profound alterations of disease condition. The quality of housing conditions plays a decisive role in the health status of the residents; it defines the outlook of a city and the state of human health. The housing infrastructures are an integral component of the environment. Thus, to understand the effect of the environment on human well

being, it is imperative to establish the role played by housing units on human health. The aim of this research is to assess the health of the residents in relation to their housing conditions. The specific objectives are to examine the housing condition in the study area; examine whether ill- health is as a result of housing condition; assess the relationship between housing condition and health of the residents in the study area and recommend sustainable solutions on how to improve housing condition in order to ensure uncompromised health.

CONCEPTUALIZATION AND LITERATURE REVIEW

Concept of Healthy Housing and Theory of Affordable Housing

Healthy housing covers the provision of functional and adequate physical, social and mental condition, for health, safety, hygiene, and comfort and privacy. In developing countries Nwaka [31;32] opined that only about 25 to 30 percent inhabitants' mainly top government officials and other rich and privileged people enjoy decent quality housing. Informal settlement dwellers are the most affected in the quality of housing due to their level of income. The relevance of this concept to the study is to ensure that people keep their housing in a good state of repair in order to avoid diseases and it will also contribute to the physical, mental and social well- being of the occupants. On the other hand, the state and condition of the available facilities should be noted whether it is in good state or not, with the expectation of using it for an extended period of time.

Affordable housing has long been an important planning and design concern in large urban areas and around the peripheries of major cities where population growth has led to an increasing demand for decent housing environments. The point at which demand for housing and residents income along with standard of living meet is the design and planning for affordable housing. The issue of affordability has attracted researchers and scholars to explore planning and design determinants, financing mechanisms, cultural and social issues, as well as construction and building techniques. Housing costs are increasing in most cities and incomes are not increasing at the same rate. Governments, on the other hand, are unable to provide sufficient housing stock to bridge the gap between demand and supply due to decreasing housing budgets and the lack of investment [4]. In Nigeria, housing schemes and new town establishment are two means through which the government has met up with the demand for housing.

LITERATURE REVIEW

Housing Needs in Nigeria

The inherent contradictions between the individual housing needs and the collective needs, was surmounted, in all the social systems before modern times [29]. According to Mabogunje, an individual is recognizable only by and through his status in the family, the clan, and society in the ideology of the modern [capitalist] world. The devastating effects of this ideology are sometimes contained by the co-existence of other ethical principles, mostly of religious origin or inherited from earlier social forms. Doxiadis [14] went further by stating that in most cases man's housing needs are tied down to several other needs. He identified psychological needs, physiological needs, social needs as well as the cultural needs to be the basic needs of man. Housing quality embraces many

factors which include the physical condition of the building and other facilities and services that make living in a particular area conducive. The quality of housing within any neighbourhood should be such that satisfies minimum health standards and good living standard, but should also be affordable to all categories of households [37]. The aspects of the physical environment that affects human health include the supply of adequate and safe water, air quality, noise pollution, overcrowding, access to electricity, sewage and drainage and solid waste collection, factors are also known as health 'hardware' [15;40]. The hardware of health often determines the level of vulnerability to certain health condition. People who are vulnerably housed face physical and mental health issues, barriers to self-care, barriers to health care, and more hospital visits. From the health perspective, Aysan [9] affirm that housing must be decent (good quality), stable (affordable), and appropriate (offers needed supports).

Relationship between Housing and Health

The relationship between housing and health is multi-faceted. A healthy home needs to have sound structure, to be free of hazards, and provide adequate facilities for sleeping, personal hygiene, the preparation and storage of food, to be an environment for comfortable relaxation, for privacy and quiet, and to provide the facility for social exchange with friends, family and others. Places differ in characteristics, thus the local environment plays a vital role in promoting social interaction and good housing condition. Agbola [2] noted that housing is a combination of characteristics which provide a unique home within any neighbourhood; it is an array of economic, social and psychological phenomena. In other words, housing could be seen as a multidimensional package of goods and services extending beyond shelter itself. Housing is however an issue that touches on the life of individuals as well as that of the nation; a great importance is therefore ascribed to the role it plays in engendering human comfort by both nature and society. This is why Eldredge [19] concludes that housing represents a bundle of goods and services which facilitate and enhance good living; and a key to neighbourhood quality and preservation. The relationship between poor housing and ill health is a complicated one which involves many different factors. Evidence suggests that living in poor housing can lead to an increased risk of cardiovascular and respiratory disease as well as to anxiety and depression. Problems such as damp, mould, excess cold and structural defects which increase the risk of an accident also present hazards to health. Olechnowicz [35] established linkages between poor housing and its detrimental effects on health with particular emphasis on the mental health of residents. The same study also provides evidence to support the view that poor housing can exacerbate existing health problems.

In Nigeria, Oluwande [36] concluded that children's progress is stunted by damp, overcrowded, ill-ventilated and poorly lit accommodation, Egunjobi [18] buttressed that the association between housing and health shows itself in the value it places on the promotion and maintenance of good quality of life and the emphasis it places on preventive rather than therapeutic measures. Meade and Earickson [28] affirm that the type of house, settlement pattern, the housing conditions [including lighting,

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ventilation, heating] and the presence of domestic animals are all consequence to health. They also argue that changes in the built environment can result in profound alterations of disease condition. In a recent development, 25 slums in Port-Harcourt have been earmarked for demolition and replacement with new housing units by the Rivers State government [22]. This support Gemmell [21] documented a link between poor housing, infant mortality, and overall mortality rates. Among the diverse environmental concerns facing developing countries including Nigeria, the issue of housing is probably the most fundamental. Housing is not just a roof over one's head; it is the conjunction of the dwelling, the home, the immediate environment and the community [42]. Housing is described as "inadequate" if it does not have basic facilities, infrastructure and services such as adequate space, ventilation, waste collection and disposal facility, sanitation, electricity, water supply and general environmental quality [10; 26;42]. Substantial scientific evidence gained in the past decade has shown that various aspects of the built environment can have profound, directly measurable effects on both physical and mental health outcomes, particularly adding to the burden of illness among ethnic minority populations and low-income communities [16]. Adequate housing therefore remains critical to human health, comfort and general well-being [24].

Astrolabe [6] further noted, adequate housing satisfy a trinity of needs in an occupant. [24] have linked inadequate provision of water, electricity, sewage and waste facilities, drainage and ventilation in the home to increased incidence of chronic diseases. In the same vein, humidity, crowding, poor ventilation and insect/pests infestation have been associated with failing respiratory health [30;11]. The presence of mould and pest proved to increase the risk of Asthma and Bronchitis [27]. In another study by Polack *et al.*,[38], overcrowding and poor neighbourhood environment were found to be critical to the health of renters group among sampled households. Furthermore, indoor air pollution, arising from cooking stove, mould and fungi growth, mosquito repellent burning, tobacco smoking and insecticide spray in the home showed significant effects on the respiratory symptoms [Cough, Wheezing, Pneumonia, Bronchitis and Asthma] among children [12; 23]. Ahianba *et al.*,[5] observed that poor ventilation in building has diverse effect on health and reduced productivity and that life span of any one exposed to excessive heat for long is shortened; thus, the quality of housing is a key determinant in maximizing health outcome, Bashir [10], though often overlooked as an important determinant of health; housing quality has important impacts on health of adults and children alike.

STUDY AREA

The present Ibadan North Local Government was created by Federal Military Government in September 27, 1991. It was carved out of the defunct Ibadan Municipal Government [IMG] along with four others, namely Ibadan North West, Ibadan South West, Ibadan South East and Ibadan North East. The Local Government headquarter is located at Gate area of Ibadan. The name Ibadan North Local Government was derived from the geographical location of the region [on the Ibadan-Ilorin axis]. The local

government is believed to fall within the developed area of the Ibadan municipal which is as a result of efficient road network [34]. The local government covers the metropolitan sections of Ibadan, namely, Bere Roundabout through Oke- Are to Mokola, Oke-Itunu and Ijokodo. From Beere roundabout to gate, Idi-ape-Basorun-Lagos-Ibadan Expressway- state secretariat – Bodija – University of Ibadan and Agbowo Area. Ibadan North Local Government is located within Log 3°59' E and Lat 7°20' N. The total land area is about 2633199 m² with a population of about 306,795 at the 2006 census [33]. The local government area is subdivided into 12 wards. The local government is the transitional zone between the high forest and the savanna belt of Nigeria. The local government area shares boundaries to the north with Akinyele Local Government area, in the east with Ido, Ibadan South-West and Ibadan South-East Local Government areas, on the west with Ibadan North-East and Lagelu Local Government areas and on the south with Ona-Ara Local Government area. It is a metropolitan community and it is the most populated in the state

METHODOLOGY

Household sample survey was adopted for this study. Questionnaire was administered to residents of the study area and the clinics in Ibadan North local government area. Data was also collected during the field survey in the 12 wards of Ibadan North local Government through oral interview with the residents. Data of illness records were collected from Alafia Hospital which covers from January 2014-December 2014. The sample frame is the total number of houses built in all the wards in Ibadan North local government Area. According to national population commission 2006, a total number of 28,020 houses were counted via each ward of the communities in the study area. From the sample frame of 28,020 residential housing units, 1.1% was selected as the sample size. Therefore 308 households were sampled and interviewed. Random sampling was employed to select the samples for this study. This involves numbering of the buildings in the localities and ballot system was used to select buildings for this study. Table 1 shows the sample size in communities according to the ward

FINDINGS AND DISCUSSION

Housing Conditions and Locational Characteristics of Sampled Communities

The quality of housing within any neighbourhood should be such that satisfies minimum health standards and good living standard, but should also be affordable to all categories of households [37]. The condition of the houses sampled was ranked good, fair and poor. The hierarchy was based on a check list of the building appearance, facilities available and the general housing and environmental condition of the building. Findings from the study revealed the general condition of respondent's buildings. 36% of the respondents accounted that the general condition of their building was good, and majority of the respondents said it was just fair while 12.3% submitted that the general condition of their buildings was poor [See figure 2]. Findings revealed that most houses in poor condition are majorly found in Beere, Inalende and part of Samonda area. These communities can be classified as a slum or low-income earners community. The general conditions of the buildings and their environment are in poor state, as

housing does not comprise of the building alone but together with its surroundings, a house whose drainage is dirty and blocked, has no sewerage system, has a bad waste disposal method, sagging roof, peeling wall paint, cracked walls is definitely in poor condition which can indirectly affect the health of those living in such housing facility [See plates 1 and 2]. Dwelling unit environmental and outlook is a reflection of housing component or facilities such as toilet, bathroom, and drainage that are not available within the housing unit. During the survey the study reveals that 89.9% of the respondents in their various houses have toilet facilities while only 10.1% houses do not have toilet facilities, but adopt other means of waste disposal [such as burying, disposal along river channels and disposing along with refuse along the road median] [See figure 3].

Analysis revealed that 71.1% of the houses uses water closet type of toilet, 17.2% uses pit latrine, 4.9% uses bucket type of toilet. Majority of the houses uses the modern type of toilet which is more hygienic for health. Houses that do not have toilet facilities use other means of waste disposal such as short put method where waste are catapulted into bush or uncompleted buildings, disposes their waste by burying it, while a single respondent said he package his waste together with refuse bin and dispose. Analysis for the study revealed that 9.1% of respondents have very good water supply, 23.7% was having good water supply, and vast majority of 46.8% had fair water supply and 15.3% with poor water supply. 5.2% do not have water supply facilities what so ever shows the electricity supply in the area, 6.2% of respondents enjoyed electricity in very good condition, 21.4% said the electricity was good, 48.1% said electricity was fair, 19.2% said it was poor while 5.2% said it was not available. It implies that the electricity in the study area was poor. The study revealed that 54 respondents dispose their waste through burning, 115 respondents make use of the common communal collection [skip-bin], and 121 respondents make use of waste disposal contractor, while the remaining 18 respondents dispose through any of the available means. These methods of waste disposal are unhygienic and expose residents to one illness or the other. Majority [71.8%] of the sampled house have bathroom inside their houses recorded, 26% of respondents had their bathroom located outside the house but within the compound which are located at the backyard while 2.3% had no bathroom at all. This shows that more than half of the respondents have bathroom. The main source of water in the study area is well and this has an indirect effect on the sanitary condition of the area. The result of the cross tabulation analysis shows that 87 respondents had their kitchen located within the house and make use of gas as their cooking energy, 11 respondents that uses gas had their kitchen located outside, while 10 respondents had no kitchen but cook in the passage, this is mostly found in students hostels. 127 of respondents use kerosene as their cooking energy and had their kitchen located within the house, also 35 of the respondents acclaimed that their kitchen are located at the back or in front of the house but uses kerosene as source of cooking, it was also revealed that 8 respondents had no kitchen but uses kerosene as source of cooking. Only 3 respondents whose kitchens are located inside uses electricity as source of cooking energy, 5 respondents whose kitchens are located outside uses coal as cooking energy,

a respondent cooks inside with wood, 17 outside while 4 respondents had no kitchen. The result shows that kerosene users had the highest percentage [55.2%], followed by gas users [35.1%], due to the electricity situation in our state; electricity user had the least respondents [0.9%]. See table 2.

Health Status of Respondents and Relationship between Housing Utilities and Health Condition

In-depth interview and field observations revealed that most of the sampled communities have clinic [public or private] situated in their area either far or close and they can easily assess any in case of any complexity. The study revealed that majority [77.3%] of the respondents attest that the clinics in their area are affordable, while 22.7% could not hide their feelings that most clinic charges are exorbitant. This shows that more than half of the respondents can afford the charges of clinic which is still reasonable. Respondents revealed the diseases and illness mostly experienced in the building they live, among which are; internal and external heat, respiratory illness, skin disease, stomach problems among others. Less than one third of the respondents fall sick often, some say they only fall sick sometimes and least respondents of 28 sampled say they cannot recollect when last they fell sick. It was also revealed that those that do not have access to potable water contact water borne disease like cholera, diarrhea, and typhoid and so on. Those that have access to potable water also recorded cases of water borne diseases. During the survey and from analysis carried out, vast majority of respondents attest that their ill health or ailment is not as a result of where they live but can be due to weather condition or might have contacted such sickness from outside their house or environment. While 123 respondents agree to the fact that their housing condition contributed immensely to their illness due to improper housing maintenance, untidy environment, stinking drainage system and lack of housing facilities that can enhance healthy living.

Clinical Findings of Residents Ill Health

It was revealed from the sampled hospitals and the review of hospital document that 15.4% of patient patronizes them from near distance, where 61.5% visit from both far and near. Medical officials opined that most sickness that afflict patient are mostly from what they eat into their body system, where 38.5% patient illness or ailment is caused by their housing condition where dirt, pollution of any type can be found while a least percent say sicknesses are mostly caused by weather condition for example during dry season people tends to have catarrh, dry throat and the likes. 61.5% agreed that housing condition can cause residents ill health if not taken care of, 15.4% strongly agree that most illness are contacted within the environment and house while 23.1% says it cannot be so in all cases. Research findings [Carter,13; AGDHA,8 and Stansfeld & Matheson,39] established that noise pollution affects human health. The residents perception of neighbourhood noise level is summarized as that 96 buildings [31.2%] are highly polluted with noise either from home base appliances generating noise , heavy machines used in producing products , machine used in grinding, 52.9% on the medium level and 15.9% low level. The noise level in most of the areas is defined by the

type of people living in such area. It was observed that high income neighbourhood such as Bodija was more conducive when taking into consideration noise pollution compared to areas such as Agbowo and Samonda. The survey showed the level of vulnerability of buildings to flood. 34.1% of the respondent's buildings are vulnerable to flood while 65.9% lives in homes that are not vulnerable to flood. Table 3 shows the water borne disease experienced in the study area, it was revealed that 35 respondents normally have cholera out of which 12 have potable water while 23 do not have potable water. 47 that experience diarrhea have potable water while 59 do not have potable water. Out of the 99 respondents that have typhoid; 59 of them have potable water while 40 do not have. Meanwhile other experience other water borne diseases like; polio which affects children, ring worm or Tinea. 34 respondents do not experience any water diseases. This reveals that water quality and availability influences the water borne diseases experienced by respondents.

From table 4, the respondents attributed the cause of their ailment to some factors. 18 respondents that live in good environment attested that the cause of their ailment is nothing else but the weather condition of the environment as dry season comes with different sickness, likewise 43 respondents in fair environment and 13 in poor environment. Also those that attributed their sickness to dirty environment are 111 out of which 13 lives in good environment, 64 from fair environment, and 16 from poor housing condition. 42 answered air pollution related questions, out of which 24 are from good environment, 14 from fair environment and 4 from poor environment. 39 respondents say their ailment is as a result of stress encountered during their daily activities. 7 respondents that live in good environment attributed theirs to noise pollution. 35 respondents' failed to respond to question. The overall result shows that the major cause of their ailment is dirty environment. Table 5 presents the response on question if housing condition is as a result of residents' ill health. Further analysis of respondents responses that perceive illness is as a result of housing condition shows; 25 respondents are from good environment, 69 from fair housing environment while 29 from poor environment. Meanwhile some respondents still believes that their illness is not as a result of where they live out of these, 82 are from good environment, 86 from fair and 9 from poor environment. This shows that residents' illness could either be as a result of where they live or not. The information collected from medical officers at Alafia hospital revealed that, 38.5% of the clinic workers attested that patient ill- health is as a result of dirty environment, 46.2% accorded that unhygienic food or water taken by the patient can cause ill-health or ailment, while 15.4% recorded that weather condition can be a cause to patient's ill-health. It can be deduced that intake of contaminated or unhealthy food can result to residents ill- health. Analysis of data gotten from the clinic [Alafia hospital] revealed that 61. % of the respondents agrees that the house in which one lives can cause ill-health or ailment, while 15.4% strongly agree that housing condition can cause residents ill- health, meanwhile 23.1% of the clinic respondents claims that illness may not definitely be as a result of their housing condition that it might be other factors like place of work and weather condition. It was revealed that 3.2% of the respondents visit clinic once a week, 29.9% visit clinic in their various

neighbourhood once a month while 22.1% visit clinic just once a year while a larger percentage of 40.6% visit the clinic very rarely. Table 6 shows the relationship between community and residents perception of relationship between illness and housing environment. 12.5% of respondents in Agbowo community attest that their ill-health is as a result of the environment and condition of their house which can be dirty surroundings like indiscriminate dumping of refuse, dirty drainage which breeds mosquitoes' and causes unwanted sickness; while 87.5% of the respondents say their ill health has nothing to do with the house they live in. In Ajibade community 33.3% says their ill health or ailment is as a result of their environment, while majority of 66.7% say their housing condition is not a factor of their illness. 61.9% of respondents in Ashi accounted that their ill health is associated with their housing condition while 38.1%, attested that their housing condition is not as a result of their ill-health. In Beere 58.1% of the respondents says their ill health is as a result of housing condition which has to do with their dirty environment, inadequate air space, uses of fire wood and coal that causes air pollution among others, while 49.1% of the respondents says it cannot be associated with their environment. Analysis revealed that 26.9% of the respondents in Bodija attest their ill health is as a result of where they live while 73.1% in Bodija says their ill health is not as a result of housing condition. Moreover in Inalende 60% of respondents in the study area accounted that their ill health is caused by their housing condition while 40% claims not to be affected. In Mokola 37.9% of the respondents recorded for those to be affected by their housing condition while 59.3% claims not to be affected. In Oke Apon 50% were affected while 50% were not affected. 68.8% accounted that their ill health are caused by where they reside, while 31.2% said their housing condition has nothing to do with their health. 25.5% in Samonda said their health condition is as a result of their housing condition while vast majority of 74.3% has said their housing condition has nothing to do with their health. It was established that in Sango 50% of the respondent's claims that housing condition has a lot to do with their health while the other 50% said there is nothing of such. It was discovered that 37.5% of those sampled in Yemetu recorded for those that agrees that their health condition is connected to their environment while 62.5% denies not to be affected by environment. Low-income and/or ethnic minority communities already burdened with greater rates of disease, limited access to health care, and other health disparities are also the populations living with the worst built environment conditions [16]. The survey shows that 40.3% of respondents indicated that they spend below N1000 per month on medical bills, 37% indicated they spend between N1000- N2000 per month, 11% spend between N2000-N3000, and least percentage of respondents 5.2 spend above N3000 per month on medical bill. This is shown in Table 7.

Relationship between Ill Health and Poor Housing Condition

The result of the regression analysis above gives the detail of the calculated value of the regression at degree of freedom [df] =3 and at the probability value [P value] = 0.05, having an f-ratio of 3.961. The P value of $P \leq 0.05$ suggests that the result is significant at significant levels lesser or equal to 0.05. On the other hand, a P value of $P \geq 0.05$ suggests that the result is not significant at significant levels greater or equal to 0.05.

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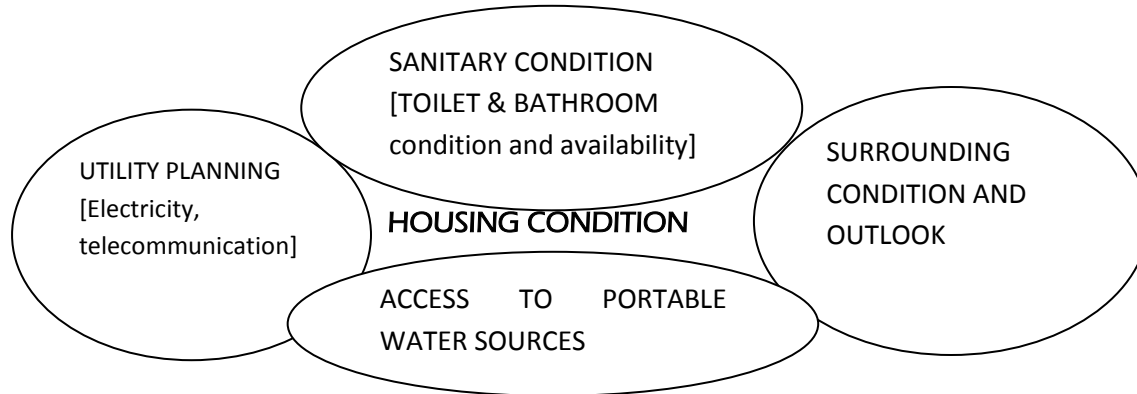
Based on the significant value of 0.05 [alpha level of significant], the calculated significant value shown on the regression Table is 0.000. This means that the calculated value of 0.000 is lesser than reference significant value of 0.05 [constant]. As such when the calculated value is lesser than the reference significant value, which is this case is 0.05, the null hypothesis is rejected and the alternative is accepted. As the case stands in this study, it means that the Null hypothesis [Ho] which states that "Residents' ill health is not a function of poor housing condition" will be rejected and alternative hypothesis [Hi] which states that "Residents' ill health is a function of poor housing condition" is accepted. This therefore establishes the fact that general housing often times affect residents ill health.

Study Recommendations

Housing unit congestion remains an important factor in reducing the resultant effect of pressure on housing facility on the environment. It is revealed that for environmental friendly and human health safety, housing unit should not be over congested as this can promote the widespread of disease and pressure on housing infrastructure such as toilet, bathroom and source of water. Thus the study suggests a two [2] person occupant per standard room. For housing to be considered healthy and adequate, it must be habitable. Inhabitants must ensure adequate space and protection against the cold, damp, heat, rain, wind or other threats to health or structural hazards. Hundreds of millions of the world dwellers reside in housing that does not meet the habitability criteria. Planning Authorities must improve the monitoring of newly constructed building to ensure they comply with the set standards of space, drainage facilities and well-being enhancement. Healthy housing requires access to clean and affordable drinking water, energy for cooking, heating and lightning, sanitation and washing facilities, food storage, refuse disposal, site drainage and emergency services. When one or more of these attributes of healthy housing are not available, the right to adequate housing is not fully placed, therefore strict regulating and monitoring of new constructions to ensure adherence to building regulations and availability of amenities cannot be compromised. Good landscaping is a powerful tool to achieve a pleasant environment. Landscaping contributes to visual satisfaction, which has a profound effect on the psychological nature of man. A green environment absorbs carbon dioxide released into the atmosphere through the activities of man and thereby releases oxygen in exchange this process gives fresh air into the environment. Therefore developments should attempt to provide for aesthetics and beautification especially through the creation of open spaces of a design quality to accompany such development. In planning for the management of waste generated, government has a vital role to play. Although Oyo State government have been trying to manage waste and ensure clean environment but most people are still complaining not to have benefitted because the collection depot is very far from their houses which left them no choice than to dump anywhere or burn their refuse. Different methods can be adopted for the collection of urban solid waste. These are door to door collection; collection from centralized depots; and back/pick up collection. When all these methods are adopted or are made provision for by the government every household would benefit. In choosing vehicles for waste

transportation, certain factors must be considered; enclose the waste and use vehicles that can easily load and unload. Efficiency factor also has to be taken into account in the course of transporting waste. The housing affordability principle stipulates simply that the amount a person or family pays for their housing must not be so high that it threatens or compromises the attainment and satisfaction of other basic needs. Affordability is an acute problem throughout the world and a major reason why so many people cannot access affordable formal housing, and are forced as a result to live in informal settlements. The lack of affordable housing is also a major problem in Nigeria where individuals and families living in poverty finds it increasingly difficult to find affordable adequate housing. When rental housing is unaffordable, tenants security of tenure is threatened as they can often be legally evicted for non- payment of rent. Therefore the provision of low-cost affordable housing should be the focus of the government, as well as creating an enabling environment for private investors to provide affordable housing. The level of maintenance or lacks of it speaks volume about the people who inhabit or have anything to do with housing. This is particularly so as lack of regular maintenance can render a building and its auxiliary facilities and services unhealthy for living and drastically depress the quality of life and contribute to some measure of anti- social behaviour [44]. People should be enlightened through seminars and landlord- tenant association on the need for proper maintenance in order to ensure sound health of the people in the area. House owners should adhere to National Building codes in order to ensure standard buildings especially for residential uses. Apart from this, Town and Planning regulations of each locality are adhered to and any defaulters found should be sanctioned. Improvement in urban housing is of utmost importance in urban development.

Housing is in short supply and therefore a comprehensive review of the urban areas is imperative. Most importantly the housing needs of the low income earners, who constitute the vast majority of urban dwellers, have to be clearly discerned to engender adequate planning for them. Noise pollution and its resultant effect can be prevent or reduced to the minimal through introduction of noise pollution act [thus determining a standard for housing unit and environmental noise level] and also integrate noise control into planning processes, for all levels of government [with attention to future noise research findings]. Also, slum areas, low income neighbourhood, and highly populated areas should be discouraged from over head noise pollution from speakers and commercial enterprises. Public awareness and education as regards the effect of housing and human health should be made available. Based on study findings and field observation, the study thus proposed a model for defining housing condition, which will serve as a bench mark for housing liveability in Ibadan.



Model for housing condition in Ibadan North Local Government area, Ibadan

CONCLUSION

Residents' livelihood [housing inclusive] is highly dependent on income. A major factor constraining individuals or household's access to decent housing is poverty. Poverty in this case is the inability to afford the basic housing requirements, thus subject them to adapt to "sub-standard housing structure". Poverty plays a major role in individual health status and also in environmental health, as a wide variety of housing features may influence the physical, social and mental well-being of occupants. Experiences of the respondents revealed that disease incidences within the study area are a reflection of poor housing condition. Although some residents that lives in a dirty environment claims not to fall sick in the house they live, but according to medical experts that say; such illness might not show forth immediately but can be accumulating into their body system and once it force itself out, the sickness might go beyond control. So as to avoid untimely death it is advisable for people to live in an environment worthy of living. Finally, the above measures are imperative, for us to have a harmonious, attractive and aesthetic pleasing environment devoid of health hazards. It is believed that if these recommendations are implemented, our house, environment and city at large will grow in an environmentally harmonious way, where unplanned growth and decay would be checked and prevented. These measures would save untimely death and improve the life expectancy of the average Nigerian.

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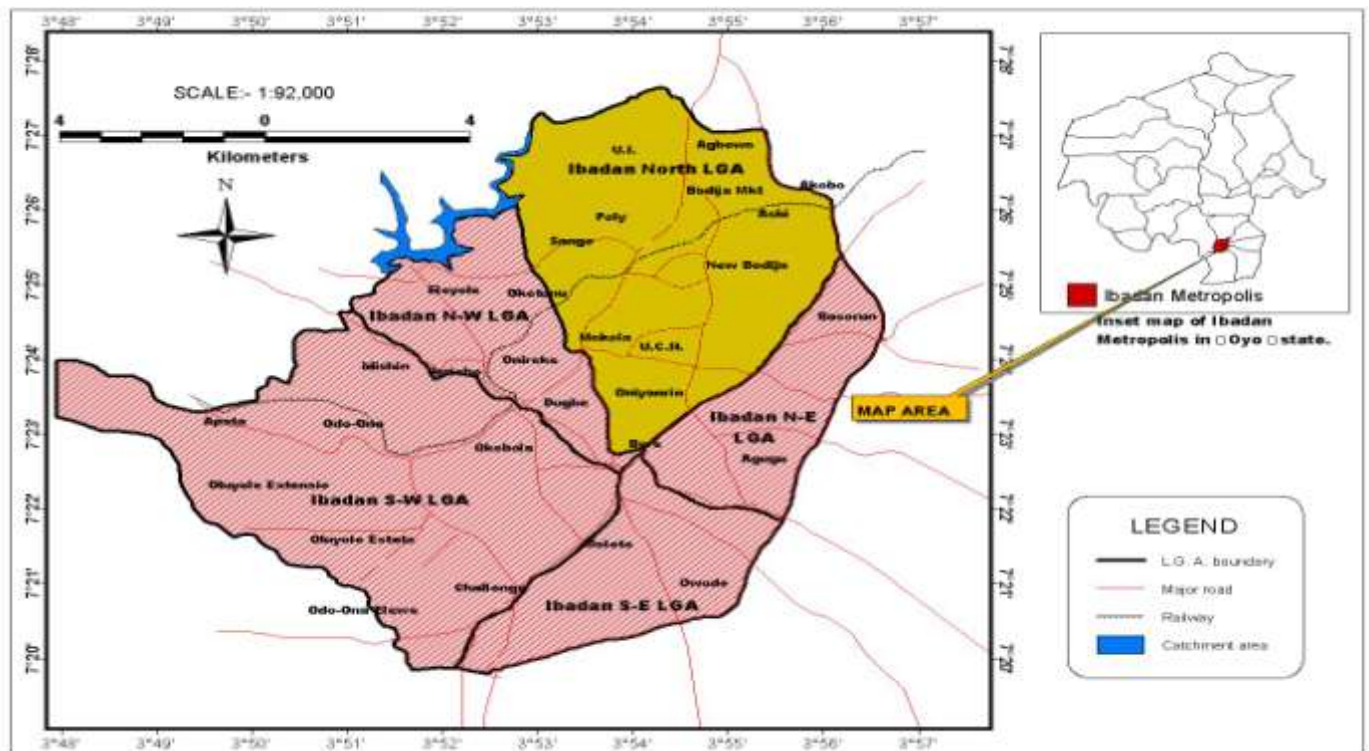


Fig. 1: Map of Oyo state showing Ibadan North Local Government
 Source: Department of Geography University of Ibadan.

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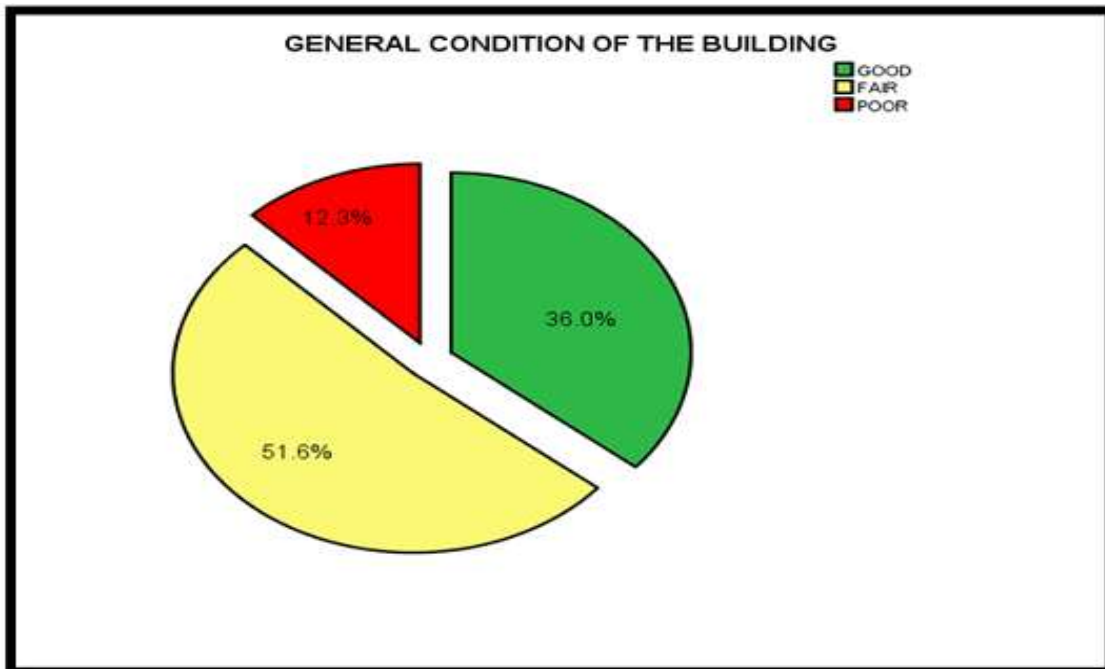


Fig 2: General Condition of Building
Source: Author's Field Survey, 2015

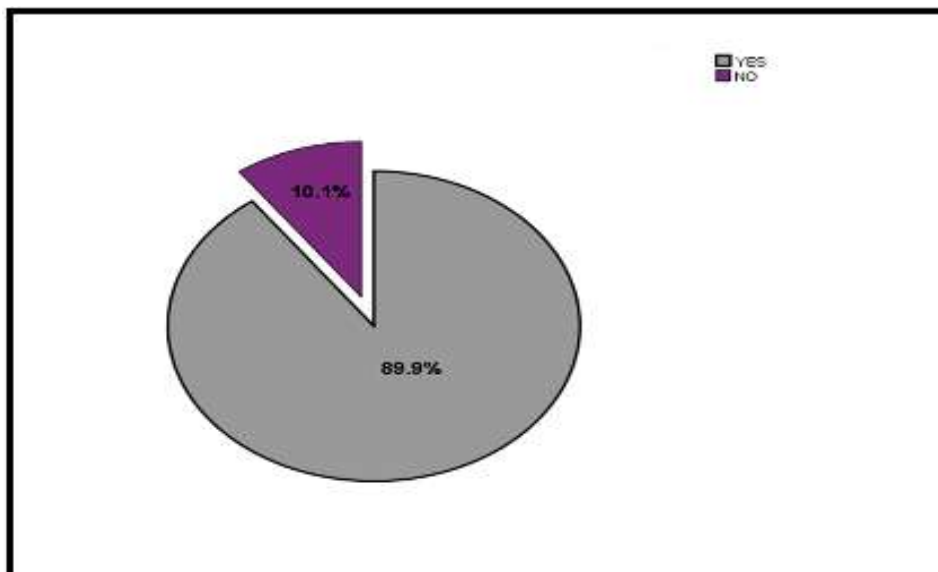


Fig 3: If respondents have toilet facilities in their homes
Source: Author's Field Survey, 2015

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Table 1 Sample Size and Sample Frame of Respondents

<i>Wards</i>	<i>Communities</i>	<i>Sample size (1.1% of the housing stock)</i>
1	Beere, Agbadagudu, Oke-Are, Odo-Oye, kanike	31
2	Odo-Oloo, Inalende, Oniyanrin	26
3	Adeoyo, Yemetu, Oke-Aremo, Isale Afa	24
4	Idi- Omar, Oje- Idosun, Kube, Oke – Apon	24
5	Bashorun, Oluwo-Nla, Ashi, Akingbola, Ikolaba, Gate	21
6	Sabo, Oke- Isu	15
7	Oke- Itunu, Coca- Cola area, Oremeji	24
8	Sango, Ijokodo	21
9	Mokola, Ago- Tapa, Premier Hotel area	26
10	Bodija, Secretariate, Awolowo, Obasa, Sanusi	26
11	Samonda, Polytechnic Ibadan, University of Ibadan area	36
12	Agbowo, Bodija market, Ojurin, Barika, Iso-pako, Lagos- Ibadan Express area.	34
Total		308

Table 2: Cross Tabulation of Kitchen Location and Sources of Cooking Energy.

kitchen Location	Within the house	Outside house	the	No kitchen	Total
Sources of Cooking Energy					
Gas	87	11		10	108
Kerosene	127	35		8	170
Electricity	3	0		0	3
Coal	0	5		0	5
Wood	1	17		4	22
Total	218	68		22	308

Source: Author's Field Survey, 2015

Table 3: Cross Tabulation Water Quality and Water Diseases

Water quality	Potable	Not potable	Total
Water borne diseases			
Cholera	12	23	35
Diarrhea	47	59	73
Typhoid	59	40	99
Others	39	21	60
None	24	10	34
Total	110	159	308

Source: Author's Field Survey, 2015

Table 4: Cross Tabulation of General Condition of Building and Causes of Illness or Injury.

General condition	Good	Fair	Poor	Total
Sickness				
Weather condition	18	43	13	74
Dirty environment	31	64	16	111
Air pollution	24	14	4	42
Stress	10	24	5	39
Noise pollution	7	0	0	7
No response	21	14	0	35
Total	111	159	38	308

Source: Author's Field Survey, 2015

Table 5: Cross Tabulation of General Condition of Building and if Housing Condition is as a Result of Illness.

General condition	Good	Fair	Poor	Total
Sickness				
Records of sickness [Yes]	25	69	29	123
Records of sickness [No]	82	86	9	177
No response	3	4	1	8
Total	107	155	39	308

Source: Author's Field Survey, 2015

Table 6: Cross Tabulation of Sampled Communities and Residents' Perception on if Housing Condition Affects Human Ill Health.

GENERAL CONDITION	Dirty Environment [Yes]	%	Dirty Environment [No]	%	NO RESPONSE	Total
COMMUNITY						
Agbowo	4	12.5%	28	87.5%	0	32
Ajibade	8	33.3%	16	66.7%	0	24
Ashi	13	61.9%	8	38.1%	0	21
Bere	18	58.1%	13	41.9%	0	31
Bodija	7	26.9%	19	73.1%	0	26
Inalende	12	60.0%	8	40.0%	0	20
Mokola	10	37.0%	16	59.3%	1	27
Oke Apon	12	50.0%	12	50.0%	0	24
Sabo	11	68.8%	5	31.2%	0	16
Samonda	9	25.7%	26	74.3%	0	35
Sango	10	50.0%	10	50.0%	0	20
Yemetu	9	37.5%	15	62.5%	0	24
/Adeoyo						
Total	123		176		1	300

Source: Author's Field Survey, 2015

Table 7: Medical bill per month [naira].

Medical Bill	Respondents	Percentage
Below ₦ 1000	124	40.3
₦ 1000--₦2000	114	37.0
₦2001--₦3000	36	11.0
₦3000 above	16	5.2
No response	18	5.8
Total	308	100

Source: Author's Field Survey, 2015

COEFFICIENTS^A

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1	[Constant]	1.511	.137		
	Congestion of building	.042	.046	.054	.914
	General condition of the building	-.114	.038	-.171	-2.992
	Dirty environment	.031	.056	.032	.554

A. Dependent Variable: Are your ill health as a result of your housing condition?

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	
1	Regression	2.678	3	.893	3.961
	Residual	68.058	302	.225	
	Total	70.735	305		

A. Predictors: [constant], General condition

B. Dependent Variable: Attribution of Disease to Housing condition.

LIST OF PLATES



Plate 1: Blocked Drainage System in Samonda.



Plate 2. : A Very Poor Condition of Wall and Roof in Beere

Reference to this paper should be made as follows: Popoola, Ayobami et.al., (2015), Housing Conditions And Health of Residents in Ibadan North Local Government Area, Ibadan, Oyo State, Nigeria. *J. of Environmental Sciences and Resource Management*, Vol. 7, No. 2, Pp. 59 – 80.
