

HOUSING CONDITION AND HEALTH OF THE AGED IN THE CORE AREA OF IWO, NIGERIA

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Abstract: In the recent period there has been renewed interest by scholars in discerning the seeming relationship between housing quality, environment and the health of the elderly. It is on this premise that this paper attempts an examination of this link in a developing country and secondary city of Iwo in Nigeria. In order to collect relevant data, household questionnaire and observation checklist were used. The household questionnaire contained questions on the socio-economic status of the respondents as well as their housing conditions. Multi-stage sampling strategy was adopted for the purpose of administering questionnaire to randomly selected 275 aged people which was analyzed using descriptive statistics. Findings revealed poor housing condition and an appalling situation where many aged residents were crowded in very limited spaces with many houses lacking adequate ventilation. Some respondents (22.2%) stated that tuberculosis posed a serious health hazard in houses characterized by overcrowding. Similarly, 28.4% respondents believed that houses that were dark, ill-ventilated, damp and dilapidated were dangerous to health of the aged living therein. Poor lighting coupled with steep slope of stairs and slippery floor finish had caused falls and collision with objects among 18.2 respondents. It is, therefore, important for equity purpose and as a vulnerable group that the health of the aged which has been less considered should be given utmost attention in the national housing policy and provision.

Key words: housing condition, elderly, environment health, neighbourhoods, Iwo town

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INTRODUCTION

The growth and complexity of human settlements, particularly the process of urbanization have been phenomenal in Nigeria. The percentage of the population living in urban centres of more than 20,000 inhabitants has been increasing in the country even before the nation's independence. According to the analytical report of the 1991 population census, the total number of Nigerian population living in urban centres in 1921 was 7.18 per cent, by 1952, it had risen to 10.65 per cent by 1962, it was 19.30 per cent and increased to 36.30 per cent in 1991. The national population census of 2006 indicated that the population of Nigerians living in urban centres was 39 per cent. The

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growth of towns and cities in Nigeria is always accompanied with a lot of problems, such as poor quality housing and disintegrating or inadequate infrastructural facilities. The challenges are more pronounced in the core areas of the cities.

The core areas, the longest settled sections of a city, have grown old and shabby with age and as result of poor physical planning structure, deficient maintenance and organic development (Agbola, 2005). These areas are planless, spontaneous in origin and do not conform easily to spatial re-arrangements. The core areas developed from a long, complex process where families and individuals adjust to adverse conditions (often contradictory to planning norms) to co-exist in a precarious equilibrium in an environment generally recognized by everyone as slum (UN-Habitat, 2006). Thus, the core areas of most Nigeria's urban centres have grown haphazardly. This notwithstanding, the population of the core area is increasing because it is the preferred accommodation choice for the urban poor and migrants from the rural areas. With the increasing population, the manifesting challenges in the area include increasing poverty, inadequate utilities and services, poor housing and environmental degradation. At the micro level, socio-economic and cultural causation of disease shows clearly that health is closely related with household income, nutrition, education, personal hygiene as well as housing and its ancillary facilities such as portable water, waste disposal and recreational facilities.

Accessible and well-designed homes and neighbourhoods enhance health and wellbeing (Department for Communities and Local Government, 2011). Good housing conditions create foundation for healthy social economic and political relationship, while substandard housing can have serious repercussions on individual and communal health (NEST, 1991). Inadequate housing causes or contributes to many preventable diseases and injuries, including respiratory, nervous system and cardiovascular diseases and cancer (World Health Organisation, 2012). A significant number of analysts (UNCHS, 1996; WHO 2001; Arimah 1993; Achor, 1998, 2001; Oladepo, 1993; Zhau-Yi et al., 1989; Egunjobi, 1997) have attempted to establish positive correlation between housing condition and human health but most of them have either lumped all groups together or have singled out children and women as the focus of their analyses.

Housing and health link becomes increasingly important with age. This is particularly true for groups who tend to spend more time in the home, especially older people (Centre for Ageing Research and Development in Ireland, 2013); they are at risk of falls and more susceptible to cold or damp related health problems (The Housing and Ageing Alliance, 2013). Housing and health, especially relating to poor housing and the elderly in the developing countries has been under-investigated. There is dearth of information on socio-economic and environmental factors affecting the health and wellbeing of the elderly in sub-Saharan Africa (Arimah, 1993). Against this backdrop, this paper attempts to examine the relationships between housing condition and the health of the elderly in Iwo, a secondary city in Nigeria. Definition of the elderly relates to those above 60 years because 60 years is the age of retirement in most societies. This can be further broken down into the young old (60-74) and the old-old (75years +) (Arimah, 1993).

The paper is presented in six sections. Following the introduction is the conceptual anchor and related literature. The third section gives an overview of the study area, the fourth sections discusses the methodology employed in the study. Section five examines housing conditions of the aged and its implications on health. The last section concludes with policy recommendations.

CONCEPTUAL ANCHOR AND RELATED LITERATURE

A series of urban land-use theories and other related theories could be used to describe and explain the characteristics of urban housing and how they influence human health. However, for the purpose of this study, emphasis is laid on the concentric zone theory and concept of environmental health.

Concentric Zone Theory

The theory provides neutral statements about residential pattern, however, it was derived from a set of highly controversial postulates about the nature of human society., The theory was

originally formulated by Park (1926). Based on Park's analysis, Burgess (1926) using Park's analysis used the theory to explain residential structure with a reference to biotic processes. According to him, humanity is part of the natural world and, as such, subject to instinctive drives, including the drive to acquire living space. The instinctive drives of human could be likened to what is obtainable in the natural world where plants compete with one another for soil and light, animals for territory, so in the city human species (different social classes, races, ethnic groups and other interest groups) compete for residential space. Saunders (1984), consistent with Darwinian principles, observes that the best locations are commandeered by the 'fittest' species. Within the human settlement, the most accessible central locations are owned by big business, while the spacious new residential land on the perimeter are owned by the owners and top functionaries of big business. 'Lesser' species such as the poor and the aged must adapt to the less favourable environments. The Chicago School saw spatial distribution of housing of various qualities as an outcome of 'ecological' competition for niches between social classes who behaved like different species in terms of their endowments and wants, and who would compete for different locations, with the strongest groups taking the most desirable positions and the weaker groups occupying residual spaces (UN-HABITAT, 2003). In essence, if ecology (a physical science term) is accepted as the study of the adaptation of plant and animal organisms to their environment, then 'cities become ordered into "residential areas", through processes of competition, invasion and succession - all of which occur in biological ecology (Giddens, 1989).

According to Burgess (1926), using Chicago as a case study, the city is arranged as a series of concentric housing zones around a central node, itself dominated by commercial and industrial activities, with residential land use occupying the outer zones. The core, otherwise known as the "loop" district is made up of different activities which include shopping areas, hotels, office buildings, banking houses and theatre district (Carter and Jones, 1989). Apart from the "loop" containing the central business district (CBD), Burgess identifies four other concentric housing zones: zone in transition, zone of workingmen's home, middle and high income residential zones and commuters' zone. Residential space is internally differentiated, with social status rising with distance from the city centre (Carter and Jones, 1989).

The zone in transition contains poor and old residential property and run-down areas that have been invaded by business and light manufacturing as the CBD expands (Romanos, 1976). It is referred to as a zone of deterioration or twilight (Fouberg et al., 2010). In the opinion of Harvey (1976), this twilight zone is, in a sense, the residual zone, the dumping ground of the city, wherein live a high proportion of those who have not the qualifications for acceptance in any purified community (such as..., the urban poor, the aged,...). They are, in effect, the impure and lack political muscles required order to achieve anything in the city politics and power relations. The concentric zone theory of Ernest Burgess implies a high degree of locational freedom on the part of the non-poor, they can move anywhere, while the urban poor, including the aged are limited in respect of residential choices. If there is a decline of population, the outer housing zones tend to remain stationary while the transitional zone recedes into the loop thereby creating residential slums (Romanos, 1976) in which most of the aged in Nigeria live.

Following the zone in transition is the zone of workingmen's home, which Fouberg et al (2010) prefers to generalize as a zone of housing of an older type. Earlier generations of working men's housing were slowly being taken over by warehouses, immigrants and the urban poor, as better off households move to the suburbs (UN-Habitat, 2003). Homes in this zone are partly occupied by residents who have lived in the same dwelling units all their lives, majority were born there. These homes have the double advantages of low rents and ease of commuting to work (Romanos, 1976).

Middle class housing, with spacious, usually single family dwelling, intermingled with some exclusive residences and high-class apartment buildings in which the middle as well as high social groups live, characterizes the next concentric housing zone. It encompasses the areas beyond the continuous built-up area of towns and cities and sometimes open countryside which contains large detached houses and villages performing dormitory function. Finally, the commuters' zone is one of

residential suburbs and satellite development within commuting distance to the central city. While the theory provides some descriptive basis for residential location, it neglects the fact that zonality is distorted by topography (Splanski, 1966; Mann, 1965), by state interference in the housing market (Robson, 1969), by non-monetary motives (Firey, 1945), and so on.

The core area of Iwo, like most cities in Nigeria, encompasses the CBD, transition zone and zone of workingmen's home. These areas are made up of traditional areas with little or no consideration for urban planning (Splanski, 1966). Majority of the houses in the core areas can be described as submerged residential buildings rather than adequate housing units, Housing entails not only shelter but a bundle of systems and sub-systems that comprises sites, structure and sets of facilities such as water, electricity, drainages, and waste disposal and failure to provide these facilities could result to obsolescence and has environmental health implication (WHO, 1961; Agbola, 2005).

Concept of Environmental Health

Environment is the sum total of all conditions and objects that surround human. It is the most precious asset that humans own, share and use together for mutual benefits and enhanced welfare of the society at large. What this implies is that the characteristics of the environment where people live or work have a number of potential effects on their health. Some of the prerequisites of minimum standard of living include: provision of ventilation, hygienic environment, low rate of occupancy and habitable living (Kasim and Agbola, 2014). The conditions of housing determine the health status of residents. Aregbeyen (1993) asserted that a properly planned house is characterized by good network of road, drainage and refuse disposal system, regular water and electricity supply, recreational grounds among many others.

Housing encompasses services that make it functional; and the residential environment plays important role in determining individual well-being (Okafor, 2013). It is from this premise that the World Health Organisation (WHO) reckons that it is the home, not the clinic that is the key to a better health delivery system. However, as noted by Nwaka (2005), only about 25 to 30 per cent inhabitants mainly top government officials and other rich and privileged people in the developing countries cities enjoy a decent housing. The vast majority of households especially those in informal settlements live in overcrowded conditions within defective physical dwellings. Most often than not, the dwelling units are located in areas which did not provide defences against diseases, natural and human-induced disasters. Over the years, there have been renewed interest and increasing concern by national and international bodies over the environmental health of major cities of the developing nations. The term, "environmental health" is not easy to define. According to World Health Organization (2001), environmental health encompasses those elements of human health that is influenced by physical, chemical, biological, social and psychological factors in the environment. It is also define as those aspects of the human body, human health and diseases that are determined by factors in the environment. Housing quality is an indicator of healthy environmental conditions. This implies that poor housing conditions can have a lot of effects on environment. Poor neighbourhood conditions can be defined as having abandoned buildings, vacant lots, no access to quality schools, and high levels of poverty. According to WHO (1961) definition, health is a state of complete physical, mental and social well-being and not a merely absence of disease or infirmity. This definition of health implies that health is guaranteed only when certain basic needs are met: these include housing, water and a pollution free environment (Egunjobi, 1993).

Environmental health is a branch of public health that is concerned with all aspects of the natural and built environment that may affect human health. The problem of health in housing can be attributed to environmental factor such as unhygienic area, high rate of urbanization in a particular area with lesser facilities to support the increasing population, and damp and mould due to overcrowded dwelling (Okafor, 2013; Kasim and Agbola, 2014). According to Agbola et al., (2007), housing and health problems in the developing countries are diverse and multi-dimensional and are particularly acute in the urban centres due to pressure of urbanization. For example, Xu et al., (1989) indicates that after controlling for smoking, the prevalence of lung cancer was

associated with smoky outdoor environment and increased in proportion to the years of sleeping on beds heated with coal stoves and associated poor indoor air quality. The leading causes of death among the elderly as investigated by Yu (1986) are heart disease, cancer, cardiovascular disease, accidents, chronic obstructive pulmonary disease, pneumonia and influenza, diabetes mellitus as well as chronic liver and cirrhosis disease.

There is a causal link between housing and the main long term conditions, for example, heart disease, stroke, respiratory, arthritis while risk of falls, a major cause of injury and hospital admission amongst older people, is significantly affected by housing characteristics and the wider built environment (The Housing and Ageing Alliance, 2013). The risk is further increased where household wastes are burnt in the open and dwellings constructed close together (Goldstein, 1990). The amount of ventilation in the house is actually indicated by the building materials and levels of crowding and personal hygiene in the home (Iyun, 1993).

Some of the disease vectors that are present in submerged houses can also influence the health of the elderly. The diseases associated with poor housing quality that are major causes of ill-health and their vectors among the aged include: malaria (Anopheles mosquitoes) and diarrhoea diseases (cockroaches, blowflies and houseflies). There are many other diseases caused or carried by insects, spiders or mites, including bancroftian filariasis (culex mosquitoes), chagas disease (triatomine bug), dengue fever (Aedes mosquitoes), hepatitis A (houseflies, cockroaches), leishmaniasis (sandfly), plague (certain fleas), relapsing fever (body lice and soft ticks), scabies (scabies mites), trachoma (face flies) typhus (body lice and fleas) yaws (face flies), and yellow fever (Aedes mosquitoes) (Schofield et al., 1990). Many of the chronic health conditions experienced by older people have a causal link to, or are exacerbated by poor housing (The Housing and Ageing Alliance, 2013). General improvement in housing condition by preventing cracks in walls, ceilings and floors and ensuring adequate ventilation and lighting as well as construction of screens and nets will restrict hiding places of and disease vectors access to human beings (Egunjobi, 1997).

THE STUDY AREA

The people of Iwo migrated from Ile-Ife, (specifically from Obaloran compound) in the 14th century. The earliest settlement was initiated by Adekola Telu, a prince from Ile-Ife and the son of the 16th Ooni of Ife, a female called Luwo Gbagida. Before the end of the 19th century, the town had grown to become one of the major towns in Yoruba land. The 1921 census recorded a population of 53,588 for the town, in 1931, its population rose to 57,291, 1952 (100,006), 1963 (101,482), 1991 (105,401) and 2006 (191,348).

The centre of the town lies on Latitude 07.63413⁰ N and Longitude 004.18069⁰E. The core of the town is approximately one kilometre radius from the city centre. As a result of the abundant agrarian land, a large percentage of the residents engage in subsistence farming. The town can be said to have a weak industrial base but there is a fair network of roads linking the various neighbourhoods within the city. The total length of roads identified in the city is 22.3 kilometres. Out of this, 13.4 kilometres (60.1%) are tarred, 6.9 kilometres untared (30.9%) while the remaining 2 kilometres (9.0%) are partially tarred or are at various stages of completion. Majority of the roads (71%) have drainage channels. The total length of the drainage channels is 20.8 kilometres. The town is directly linked to the national grid through 33KV transmission line from Osogbo. The supply of electricity is relatively regular.

Residential land use is the predominant land use and it accounted for 70.7 per cent of the total land area. Most of the residential buildings are overcrowded and characterized with brown roofs (rusting roofing sheet) and ageing mud walls. There is no physical development plan for the core areas of Iwo Township. Hence, these areas have grown organically without consciousness of neighbourhood orderliness. Ancient mud walled dwelling units predominate the core area of the town. However, while some of the buildings have been plastered (and painted), some are giving way to modern buildings. The states of most dwellings are unimaginably appalling. The Brazilian

type of “face-me-I-face-you” is still the predominant house type in the area. The houses are characterized by absence or poor maintenance of basic public utilities and infrastructure such as water, sewage systems and waste disposal. For example, access to piped borne water is highly limited as virtually all the public taps remain dry for most parts of the year. Also, the rate of borehole failure, most especially those constructed by the government is very high. Out of the 27 boreholes that are sited in the area, 16 are not functioning when the study was carried out. All these have negative effects on human health.

METHODOLOGY

The data for this study were obtained from primary and secondary sources and they are both quantitative and qualitative. The secondary sources of data for this study include extensive review of the literature and relevant previous censuses documented by the National Population Commission (NPC). The satellite imagery of the town obtained from the State Ministry of Lands, Physical Planning and Urban Development was used to delineate the study area. This study is restricted to 1 km radius from the Oluwo’s palace which is taken as the centre of the town.

In order to collect relevant primary data, household questionnaire and observation checklist were used. The household questionnaire contains questions on the socio-economic status of the respondents as well as housing condition. The observational checklist which was administered along with the household questionnaire contains information on structural, neighbourhood and locational characteristics of housing. For validating the field survey instruments, face validity method was used.

A multi-stage sampling strategy was adopted for the purpose of administering the household questionnaire to randomly selected 275 aged people. Data analysis involves iterative process of preparing descriptive statistics.

FINDINGS AND DISCUSSION

Socio-Economic Characteristics of Respondents

A cursory look at the age distribution of the respondents indicates that the modal class of the respondents was the age group 65 and above years with 66.5 per cent. Not less than 22.5 per cent of the respondents fell below the modal class while 11.0 per cent respondent was under the age of 65. Findings revealed that 45.8 per cent of the respondents were male while the remaining 54.2 per cent were female.

Islam is the most predominant religion in the study area, 83.6% respondents were adherent of Islam. About 14.0 per cent were Christians, only 2.6 per cent respondents are practicing traditional religion. Information on the marital status of the respondents shows that 72.0 per cent were married, while 28.0 per cent were widows/widowers. Extended family is the most important type of family structure within the core areas of Iwo. Investigation revealed that household size ranges between 6 and 18. The educational status of the sampled respondents was low. Only 10.2 respondents attended secondary and tertiary educational institutions. Majority of the respondents (49.8%) were without any formal education. Another 18.2 per cent attained primary, 21.8 per cent had Arabic education. The dominant occupations of residents were trading accounting for 42.3 per cent of the occupation of the respondents. Farming, security, and traditional medicine (28.4%), craftsmanship and private sector employment such as mechanics, panel beating, vulcanizing, bread baking and bricklaying, accounting for 23.3 per cent of the occupations of respondents. The remaining 6.0 per cent were retirees.

The annual income distribution of the respondents shows that about 56.4 per cent of the respondents earned less than N18, 000.00 per month. This category of people relied on their children and extended family members in order to meet basic needs, including housing needs. Relative higher incomes were recorded with 20.0 per cent earning between N18, 001 and N36, 000, 00. The remaining 23.6 per cent earned above N36, 000.00. If converted to the US dollar at the official exchange rate of about N305 to US \$1.0, it implies that 76.4 per cent respondents earned about US \$2 or less per day.

Housing Condition and Health of Aged

In the context of this study housing is described as residential environment which includes: the physical structure that human uses for shelter, all necessary services, facilities, equipment and devices needed or designed for the physical and mental health and social wellbeing of the household. In other words, adequate or suitable housing encompasses all the ancillary and community facilities which are necessary for human health and well-being. In this section, the various housing characteristics which contribute to poor environmental health include inadequate provision for water and sanitation; high level of indoor pollution, and overcrowding which increases the transmission of air borne infections and increase the risk of accidents.

Types of accommodations available in the studied neighbourhoods are face-to-face, flat, storey building and traditional compound. A significant proportion of dwelling units surveyed were Brazillian face-me-i-face-you (88.0%), traditional compound (1.8%) and storey residential buildings (10.2%). The number of floors in the storey buildings range from one to three. The modal class of the number of rooms per residential building is 6 - 8 representing 90.9% of the buildings sampled.

The study further examined the ownership of the accommodation from the respondents and the result showed that 78.2 per cent occupiers were owners of the dwelling, 14.5% rented the dwelling while 7.3 per cent were free occupants, with no rental payment. Rents paid by tenants range between N500 and N3,000 per month. Most of the houses (73.1%) were constructed more than 50 years ago.

About 80.0 per cent of the buildings consists of 1-6 occupants, followed by 11.6 per cent buildings that contained 6-12 occupants, 5.1 per cent and 3.3 per cent buildings housed 13-18 and more than 18 occupants, respectively. The modal class of the number of rooms per building was 5-8 with 185 (67.3%) residential buildings. This was followed by 9-12 rooms' class with 14.5 per cent buildings. Another 10.2 per cent building contains between 13 and 16 rooms, 17-20 room (6.5%) and only 1.5 per cent buildings had more than 20 rooms. This frequency of varied habitable rooms/house might be due to the different types of houses constructed.

Findings revealed that 62.2 per cent respondents of the sampled households shared dwelling units with 1-6 other households, 19.6 per cent shared dwelling with 7-8 other households while 8.4 per cent households shared dwellings with 9-10 other households. The remaining 9.8 per cent households shared dwelling with more than 10 households.

The epidemiology of certain diseases such as tuberculosis and chicken pox often are significantly influenced by housing conditions and rates of room occupancy in the transmission cycle of these diseases. Respondents (22.2%) stated that tuberculosis poses a serious health hazard in houses characterized by overcrowding. Similarly, the prevalence of mental illness was found to be substantially higher among the elderly residing in poor neighbourhoods within the core areas.

The windows of most houses (75.3%) were made of wood and this has many implications on ventilation and air circulation, especially when the windows are shut at night. This indicates that buildings have little or no resistance to inflow of cold air in the night, during the rain, and of heat during the hot seasons. Building materials such as asbestos, mostly used for ceiling construction in the core area and other inorganic compounds (e.g. formaldehyde and chloroform) found in building materials, wood preservatives and other solvents have greater effect on the health of the elderly, especially where ventilation in rooms is poor. Seventy-eight respondents (28.4%) believed that houses that were dark or ill-ventilated or damp or dilapidated were dangerous or prejudicial to health of the aged living therein. Another 25.1 per cent respondents argued that home accidents are peculiar features of houses that were characterized by overcrowding and poor lighting. Poor lighting coupled with steep slope of stairs, uneven floor and slippery floor finish had caused falls and collision with objects among 18.2 respondents. The falls and collision were fatal for about 12.0 per cent of respondents owing to poor eyesight, one of the major characteristics of old age.

Findings showed that 53.8 per cent residential buildings used mud/mud bricks for their external walls. Structural conditions of the buildings also showed that only 25.5 per cent houses were physically sound. While 51.6 per cent needed minor repairs, 22.9 per cent required major repairs. Condition of wall shows that 58.2 per cent were cracked and another 13.1% was dilapidated.

About 10 per cent of the respondents observed that near collapsed structures or dilapidated buildings put residents under perpetually threat of building collapse and homelessness. Displaced individuals from collapsed buildings suffered untold hardships as they were often homeless. Potential homeless aged are likely to experience psychiatric symptoms such as anxiety, depressions and change in character and lifestyles. They were vulnerable to high blood pressure, stroke and other stress related ill health, as noted by 7.2 per cent of the respondents. Psychological ills such as mental irritations, depression and anxiety are conditions that flourish in among the occupants of dilapidated houses. The social factors associated with poor housing condition of the aged, such as low socio-economic status and relative inequality play important roles in the causation of non-communicable diseases like hypertension and peptic ulcer.

The houses in which most of the aged live are substandard (74.5%) and aesthetically displeasing (68.0%). They are characterized by open cracks/holes on walls (58.2%), ceilings and floors (52.4%); poor lighting and ventilation (56.0%); dusty floor (62.2%); and broken plaster and peeling paints (22.2%). Most houses (55.3%) lack screens or wire netting at the windows and doors to keep out insects, especially mosquitoes. In addition to the use of poor and non-durable building materials, 58.2 per cent dwelling units show signs of poor workmanship and poor standard of construction.

The survey unveiled that 85.5% of the sampled households used corrugated iron sheets to roof their houses, 3.6% of them used asbestos, while 10.9% used aluminum. The percentage of the residential lots that majority of the houses (68.3%) occupy was more than 80.0 per cent against the maximum of 50.0 per cent stipulated by town planning regulation in Nigeria. In terms of air space, the distance between 79.3 per cent of the houses selected is less than the required three metres. The rules pertaining to setback requirements were also violated by 72.0 per cent of the respondents. Majority of the respondents (68.4%) accessed their houses through footpath alone. The major reason responsible for this is haphazard development (88.1%).

Most of the residential buildings (64.0%) used outdoor toilets. Only 36.0 per cent of the buildings sampled had indoor toilets. With reference to bathrooms, only 34.2 per cent houses have indoor bathrooms while the remaining 65.8 per cent depend on outdoor bathrooms. Furthermore, 45.1 per cent of the sampled houses had indoor kitchens, while 54.9 per cent used detached and or outdoor kitchens. Modern cooking technologies use clean energy sources such as gas and electricity. However, most of the buildings sampled (78.6%) were using fuel wood and charcoal for household cooking. This has implications on indoor and outdoor air pollution.

According to 55.3 per cent of the respondents, respiratory infections among the aged could be linked to poor indoor air pollution emanating from the usage of environmental unfriendly fossil fuels (fuel wood, charcoal and kerosene in and inefficient stoves) for cooking in poorly ventilated rooms, corridors, verandas and kitchens. High levels of air pollution in such houses had been linked to a high incidence of bronchitis and asthma by 48.0 per cent of the respondents. Increase in respiratory disease symptoms was linked to indoor air pollution from open coal fires by 32.0 per cent respondents.

The main source of water was well which accounted for 78.9 per cent of the sampled households. Other sources of water were borehole, bottled/sachet water and pipe borne water together representing 21.1 per cent of water sources. Household members responsible for fetching water were mostly children as well as adult and aged females. Water treatment was not a widespread practice but some residents (24.4) used alum, chlorine and other water purifiers. Adequate supply of domestic water is not only an insurance against water-borne diseases but it is also essential for the maintenance of healthy hygiene habits in the house.

According to 55.3 per cent respondents, poor access to potable water and adequate sewage connection has resulted in debilitating and easily prevented diseases being endemic among the

aged. Such diseases include malaria, diarrhoea, helminthiasis, dysentery, cholera and typhoid. Also, improper food storage and lack of protection of food or food stuff from pathogens has led to food contamination and poisoning according to 55.3 per cent of the respondents.

Majority of the respondents (80%) had access to electricity supply by the Ibadan Electricity Distribution Company (IBEDC). Supply of power is relatively regular compared to other Nigerian towns and cities characterized by inadequate and erratic power supply. Some households compliment electricity supplied by IBEDC with other sources such as electricity generating set, rechargeable lamp/torchlight and hurricane lantern. Some of the houses without electricity (5.1%) were dilapidated buildings inhabited by the poor and aged residents. Available health care facilities in the area were trade-medical health institutions, clinic and maternity centres (5), community/public health centres (3), health post (1) and general hospital (1). The conditions of the health care facilities available were rated fair by 62.2 per cent respondents.

The major components of wastes generated were household food waste, polythene, leaves, bottles and metal scrap (87.3%). Type of waste storage facilities commonly used by residents were plastic containers (53.1%), sack and basket (25.5%) and bucket (21.4%). Communal refuse storage, collection and disposal facilities were lacking. Hence, refuse collection system was inadequate. As observed, uncollected refuse caused unsanitary conditions and clogging of storm drains and streams. Most of the residential neighbourhoods were very dirty and generate offensive odour. Most of the houses sampled (73.1%) did not have drainage channels.

Some respondents (48.0%) believed that a steady but less noticeable toll of disease disability among the aged often result from inadequate facilities for the disposal of liquid waste which favours the presence of stagnant pool of water. Such stagnant water, according to them often served as an important habitat for a range of disease vectors such as mosquitoes, which cause malaria fever. Owing to prevalence of diseases causing vector, especially mosquitoes in the tropical zone, it is usually expedient to have a first wall of defence against them using mosquito's nets in windows and doors. However, only few dwellings of the aged (10.2%) installed nets in doors and windows. Malaria has been documented as one of leading diseases responsible for high mortality in Africa (Shapshak et al., 2015) The transmission of non-communicable diseases like malaria, typhoid, dysentery, worm infestation, upper respiratory infection and pneumonia is fostered by poor sanitation, overcrowding, inadequate water supply (Anchor, 2001).

Without adequate provision for the collection of garbage and drainage, a great range of disease vectors will live, breed or feed within and around houses and settlements. Therefore, heaps of unmanaged garbage had been reported by 87.6 per cent of the respondents to create opportunities for the breeding of mosquitoes, flies, rats and several vermin's with high potential to compromise the health of the aged. The disease they cause or carry according to 58.2 per cent respondents include malaria (*Anopheles* mosquitoes) and diarrhoeas diseases (cockroaches, blowflies and houseflies).

Many houses where the aged live present multiple disadvantages that include not only missing and inadequate infrastructure and services, but also unfavourable geography, vulnerability to environmental shocks and seasonal exposure. In the rainy season, cold homes have a serious impact on older people's health. Twenty-four per cent of the respondents revealed a strong positive relationship between cold temperatures and cardio-vascular and respiratory diseases. According to them, cold housing increased the level of certain illnesses such as colds, flu, arthritis and rheumatism. About 15.0 per cent respondents (15.3%) erected their dwellings along flood plains, on hill slopes and in marshlands. In houses situated on steep slopes and other perilous locations, 13.1 per cent of the respondents claimed that injuries from falls were common. Furthermore, flood plains or any environment lacking adequate drainage systems for surface water leads to damp and mold growth, frequent flooding and increased transmission of diseases. These factors increase health risks of the aged, with corresponding economic costs for seeking health care.

According to 22.5 per cent respondents, frequent use of pepper grinders, wood machines and con millers by the aged in order to augment little income or pension at home generate

excessive noise which can make the aged people to develop tinnitus, become stressful, physiological aroused, irritable, aggressive and even develop insomnia (inability to sleep). Mental and psychological disorder like depression, anxiety and alcohol abuse attain high level of prevalence in poor quality houses. Structural defects in housing and unsafe working environment expose the aged to unprecedented kinds of home accidents.

CONCLUSION AND POLICY RESPONSE

Findings revealed that majority of the houses in the study area can be described as shelters rather than houses. In most places, residents were usually crowded in very limited space and the houses usually lack adequate ventilation. Several residents live in life and health-threatening homes because of the poor housing conditions characterised by inadequate provision for safe and sufficient water supplies, provision for sanitation, drainage and the removal of garbage.

There is inseparable link between the quality of housing and the health status of the aged. Whereas decent housing promotes good health, a submerge housing predisposes the aged to a range of communicable and non-communicable diseases and disorders. Owing to this close nexus, conscious provision of favourable factors in housing will no doubt improve the health status of the aged. Consequently, health of the aged should form important inputs in the national housing policy. Decent, suitable housing units for older people will reduce the costs of health care and this will in turn contribute to more savings as well as achieving the policy aspirations of integration of the aged and prevention of certain diseases. The provision of warm, safe and well designed housing units will have quantifiable effects on the health and well-being of older people with chronic health problems such as heart disease, stroke, respiratory conditions, mental health, arthritis and rheumatism.

One of the primary functions of housing is improvement and sustenance of quality of life and the present concept of health show that the notion of health is an important element of wellbeing. Since housing plays a major role in modulating the health status of the aged, it follows logically that the provision of health policy will certainly include the right of the aged to adequate housing. Against this background, it is important to ensure that the various levels of association between housing condition and health of the elderly constitute an important input in Nigeria's health policy. Both housing and health policies should have an interface where adequate housing should be given adequate attention.

Risk of income loss has been associated with the elderly of above 65 years old. The two main areas of policy intervention should include reducing the impact of poor housing condition on ill-health in the old age and secondly preventing and helping old people out of housing poverty. Majority of the aged in Nigeria face housing problems because they have failed to invest in adequate housing when they were active or because of low income or unfavourable economic policies or non-payment of gratuities and pensions on time. In addition, majority of them during their economic active period engaged themselves in informal activities which have no gratuity or pension. There is, therefore, the need for compulsory pension insurance in addition to social assistance to the old. This arrangement will enable the aged to have access to decent house after retirements. There is also the need to review the minimum pension benefit, as this will enable the aged to maintain their houses and, thus, prevent such houses from deterioration.

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