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Housing Condition and Health Relationships in Ijeda-Ijesa and Iloko-Ijesa, Osun State, Nigeria

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I. Introduction

Decent housing is one of the basic needs of every individual, the family and community in general. It reflects the cultural, social and economic value of a society, as it is the best physical and historical evidence of civilization in a country. Housing is defined as "the process of providing a large number of residential buildings on a permanent basis with adequate physical infrastructure and social amenities, (services) in planned, decent, safe, and sanitary neighbourhoods to meet the basic and special needs of the population" (Federal Ministry of Work and Housing, 2002 in Kuroshi and Bala, 2005). Neutze (1998) in Australian Bureau of Statistics (2006) however affirmed that inadequate housing can pose serious health risks.

Housing conditions play major role in individual health status, as a wide variety of housing features have been reported to influence the physical, social, economic and the mental well-being of occupants(Turunen et al. 2010). WHO (1990) stated that housing should provide:

- protection against communicable diseases,
- protection against injury, poisoning, and chronic diseases,
- and reduce psychological and social stresses to a minimum

A healthy housing environment is one that provides decent liveable dwellings, clean surrounding of minimum acceptable standard of space and environmental health. Environmental health is defined as the control of all those factors in man's physical environment that exercise or may exercise a deleterious effect on his physical, mental or social well-being. In essence, it refers to, among other things, the control of:-

- methods for disposal of excreta, sewage and community wastes to ensure that they are adequate and safe.
- water supplies to ensure that they are pure and wholesome
- housing to ensure that it is of a character likely to:
  - ✓ provide least opportunities for the direct transmission of diseases especially respiratory infections and;
  - ✓ encourage healthful habits of the occupants.

The nature of housing, its environment and its location playscrucial role in determining its occupants' ways of life. It affects the way they spend their income, leisure time, health and attitudes to social relations. Scott(1953) described pure, adequate water and safe removal of waste products as the foundation on which good housing, good nutrition and healthy living can be built.

II. Justification for the Study

Rural area in Nigeria is defined as a settlement with population less than 20,000; where majority of the people are engaged in primary activities like farming, fishing, mining, lumbering etc; where the per capital income is significantly lower than the national average and where the population lacks basic social amenities like; good drinking water, electricity etc. Rural housing is characterized by poor quality of building, poor construction methods and materials, poor planning and design principles.

Quality housing in rural areas tends to raise the standard of living of the rural dwellers and check the flow of the rural people to urban areas. It could encourage population movement from the already congested urban areas to rural areas. In some rural

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areas, serious environmental problems arise in and around people's homes, often creating health hazards. Inadequate sanitation, insufficient or contaminated water, uncollected solid waste and insect infestation are all correlated with rural poverty and lack of environmental services. Respiratory infections and diarrhoea diseases are two major killers that have been linked to inadequate home and neighbourhood environments (Nicol, 2006).

III. The Study Area

Ijeda–Ijesa and Iloko-Ijesa are contiguous towns under Oriade Local Government Council, Osun State. Ijeda-Ijesa is located on latitude $7^{0}40^{1}$north and longitude $4^{0}50^{1}$east while Iloko is located on latitude 7^{o} 38^{1} north and longitude 4^{o} 48^{1} east. Both share boundaries with Efon-Alaaye in Ekiti State, Ijebu-Ijesa, Iwaraja, Iwoye and Erinmo. Both being traditional towns, developed virtually without physical plans and this has resulted in the unregulated mixture of land use activities. Ijeda-Ijesa has a population of about 13,000 while Ilokoljesa had about 17,000. Residential land use in the areas can be classified into two; the old and the new residential areas.

The old residential area comprises the traditional quarters in the inner part of the town and most of the buildings in the areas are built of local materials such as mud and mud blocks, which are sometimes plastered with cement and roofed with corrugated iron sheets. In addition, the buildings are made up of traditional compound houses in which each compound is connected to the next by narrow footpaths. Access is mainly by foot. On the other hand, new residential areas cover a small area in the outer part of the towns. The inhabitants of Ijeda-Ijesa and Iloko-Iloko engage in agriculture, crafts and light agro-allied industry made up of cassava processing and distillery.

IV. Materials and Methods

Data for this study were generated from primary and secondary sources. The primary data was acquired through structured questionnaire and interview while secondary data was sourced from local government information office, journals, magazines, National Population Commission and internet. The sample was generated through stratified-systematic sampling method. The houses in each of the two villages were divided into four strata/traditional quarters and twenty-five percent (25%) of the houses in each stratum were systematically selected. In each of the houses, the household head was administered the question naireto acquire data about housing condition, facilities, waste generation and management, prevalent diseases and illness, and socio-economic characteristics of the inhabitants. This was complemented by observations and information from the secondary source. The data was analysed using descriptive and chi-square statistics to determine the presence or otherwise of relationship between housing quality and the health status of the people.

a) Hypothesis

The hypothesis to be tested is

Ho: There is no relationship between housing condition and the health of the occupants

V. Literature Review and Conceptual Framework

Recently there have been an increasing amount of research and publications on the influence of living conditions on the health of occupants (Braubach & Bonnefoy, 2001; Mackenbach & Howden-Chapman, 2002; Thomson et al., 2003). However, Lawrence (2000) contends that housing and health issues have still not been well understood in terms of both the positive and the negative impacts on health and well-being. Scholars have also called for an extended view of housing and health, integrating the mental and social aspects of housing as a fundamental setting for living (Dunn, 2000; Williams, 2002). Rapoport (1995) argues that an adequate home is a "special place" for its inhabitants. It represents a safe physical harbour for the individual, and mentally provides an opportunity for retreat from the outside world and its pressures. Thus, a more holistic approach is needed to understand the wide range of interactions between place and health (Williams, 1998).

The review of academic literature by Cohen (2011) revealed ten hypothesis regarding the contribution of affordable housing to health. These are:

- Affordable housing may improve health outcomes by freeing up family resources for nutritious food and health care expenditures
- By providing families with greater residential stability, affordable housing can reduce stress and related adverse health outcomes
- Stable, affordable homeown¬ership may positively impact mental health by increasing the control that homeowners have over their physical environment and minimizing the disruptions associated with frequent, unwanted moves. However, the stress and disruption associated with mortgage defaults and foreclosures suggest that unsustainable forms of homeownership may have strong negative impacts on health.
- Well-constructed and managed affordable housing developments can reduce health problems associated with poor quality housing by limiting exposure to allergens, neurotoxins, and other dangers
- Stable, affordable housing may improve health outcomes for individuals with chronic illnesses and others by providing a stable and efficient platform

for the ongoing delivery of health care and reducing the incidence of certain forms of risky behaviour

- By providing families with access to neighbourhoods of opportunity, certain affordable housing strategies can reduce stress, increase access to amenities, and generate important health benefits
- By alleviating crowding, affordable housing can reduce exposure to stressors and infectious disease, leading to improvements in physical and mental health
- By allowing victims of domestic violence to escape abusive homes, affordable housing can lead to improvements in mental health and physical safety
- Use of green building strategies reduces environmental pollutants, lowers monthly energy costs, and improves home comfort and indoor environmental quality
- Affordable and accessible housing linked to supportive services enables older adults and others with mobility limitations to remain in their homes

Akinbamiro (2012) found significant relationship between health status of residents and housing quality measured in terms of age of building, waste disposal method, frequency of collection, management of waste water, type of toilet, use of toilet, walling materials, type of roofing materials, adequacy of electricity, type of kitchen and state of repairs of building in Odi-Oloworesdiential district, Osogbo, Osun state, Nigeria. He recommended public health campaign, wider coverage of waste removal agency and public sector intervention in the form of improving access to housing fund for rehabilitation, renovations and redevelopment.

Furthermore, there is growing evidence that housing conditions closely align with the health of individuals and the connections people have with each other and their community. Inadequate in-house space has been identified as a risk factor for the propagation of respiratory infections due to bacterial causes and indoor air pollution. A high risk of acute lower respiratory infection was associated with increasing number of persons per room and high level of indoor air pollution in a study made among children under five years in Addis Ababa (Getahun et al, 2010).

Bonnefor et al (2004) concluded from the study based on empirical data collected from 259 dwellings and 601 residents, that several housing conditions do have impact on the health perception of their residents. Noise annoyance is recognized as one of the most prevalent problems affecting residential health and well-being. However, it proved difficult to identify an aspect having an overall dominant influence on health. The survey clearly indicated the effect of rehabilitation work on residential satisfaction, and raised expectations that housing improvements can lead to better health.

Nicol (2006) in his work on eight European cities identified a definite relationship between damp/mouldy homes and anxiety/depression and migraine/frequent headaches from the group of chronic illnesses; diarrhoea and cold/throat illnesses from the group of acute illnesses; and asthma, wheezing, eczema, watery eyes/eye inflammation, headaches from the list of symptoms. He however cautioned that this relationship does not imply cause and effect. Many illnesses appear to be mental conditions, and even the physical symptoms are of the sort which could be regarded as being the emotional response to circumstances – such as feeling trapped in poor housing.

It is evident from literature that current awareness of the housing-health-relationship varies from country to country. This is due to housing stock differences and climatic conditions, and a product of different policies and scientific knowledge. For instance, the UK has recognized that safety hazards represent a major housing and health problem in its housing stock (Raw and Hamilton, 1995). This is a result of matching and analysing health, safety and house condition datasets. However, a housing and health symposium arranged by WHO in June 2001 showed that next to the awareness, the priority of problems differs strongly from country to country, as they are influenced by cultural, social, economic, building, climatic and geographic factors (WHO, 2001). Therefore, solutions to reduce or remove hazards will vary internationally depending on the cause and on buildings factors in different peculiar environment.

VI. The Concept of Habitability

The concept of habitability reveals the level of satisfaction derived by the tenants or residents. In order to evaluate housing habitability, there are several research approaches that can be adopted, all based on "users reaction". This concepts reveals that housing is more than shelter and looks at the interaction of four main subsystem; tenant (man), shelter/dwelling, environment and institutional management which interact actively to produce the level of satisfaction and the level of satisfaction in turn determines the level of housing needs in a given place (Onibokun, 1985). However , habitability, as used in the system approach, assume the fact that what constitute habitability varies according to the ambient circumstance and as such the habitability of a housing at a particular point in time can only be defined meaningfully in the relative terms or sense rather than to the absolute sense.

Considering "man" who is the occupant of the house for instance, some of his socio- economic characteristics such as marital status, family size, income level and others need to be examined. In addition, the culture of the group to which the occupants belong should be given adequate attention.

Considering the "shelter" aspect of the concept, there is need to study the adequacy or otherwise of the physical design of the house in terms of ventilation, number of rooms, size of rooms, toilet and storage facilities and the enhancement of privacy of individual and the family. Thus, a house is inadequate if the provision of sewage disposal is not available or faulty. Similarly, a house with water closest toilet system but constantly runs short of water supply reveals a bad situation.

Considering the institutional arrangement, this composed of the management and maintenance of housing. For example, one can talk about how reliable the essential services will enhance healthy living. Also, there is need to consider the availability of protective services such as police, security, mortgage service and cleanness of the neighbourhood by the relevant authority.

Considering the environmental sub-system of the concept, this tends to emphasize the role of physical planning in housing and the provision of environmental facilities such as open space, parking space, recreation, good roads, shopping centres and other amenities like school, post office, club, cinema, night club and so on. Also, the beauty of the environment needs to be considered. Thus, one of the most outstanding environmental problems associated with the pattern of residential landuse in rural areas is the predominance of sub- standard housing built largely in areas having no accessible streets.

VII. Results and Discussion

As shown in table 1, 93% of the houses sampled from the two towns were less than 26 years old (91% in Ijeda-Ijesa and 96% in Iloko-Ijesa). Owing to the construction method and materials used, buildings do not last long in the rural areas; more than 50% of the buildings in both towns were built with mud. Regarding flooring materials, the data revealed that 94.2% in Ijeda-Ijesa and 74.0% from Iloko-Ijesa reported cemented flooring. In addition, the data revealed that corrugated iron sheets were predominantly the roofing material in the study areas; 98.0% of the respondents in Ijeda-Ijesa and 74.0% in Iloko-Ijesa. This implies that the two communities have access to similar building materials possibly due to geographical reasons.Access to the houses was mainly by foot as the data indicates.

Typical of most rural communities, toilet facilities were not well developed in the study areas. Table 2 showed that 16% of the total sample do not use toilet, preferring to defecate in the bush while 32% of the total sample use the open space around their houses. Both cases have negative implications for the health of the residents. Sharing of facilities is a common practice in rural communities; hence, respondents in the study areas reported sharing toilet facility among households.

Malaria was the most reported ailment in the two communities as reported by 53% of the total sample (49.3% of respondents in Ijeda-Ijesa and 57.3% in Iloko-Ijesa) as Table 3 reveals. Other notable ailments include dysentery accounting for 20% of the total sample disaggregated as 19.6% in Ijeda-Ijesa and 20.8% in Iloko-Ijesa. 41% of the total sample attributed the cause of the ailment to mosquito bite while 20% attributed it to bad sanitation and hygiene; both of which are traceable to inadequate housing.

Pearson chi-square analysis on the variables that directly affect the health of the residents in the housing condition reveals significant relationship between age of the building and health of residents in Ijeda-Ijesa (p value < 0.005) and the reverse was the case in Iloko-Ijesa (p value > 0.05). The hypothesis was therefore accepted in the case of Iloko-Ijesa while in Ijeda-Ijesa, the null hypothesis was rejected. Furthermore, building type was established to have a stronger effect on the health condition of residents in Iloko-Ijesa than the residents in Ijeda-Ijesa while building design was reported to have direct effect on the health of the residents in Ijeda but the reverse was the case in Iloko. This implies that in totality, there was significant relationship between the housing condition and the health of the residents in the study area. Nonetheless, household size and health of resident srevealed direct relationship in Ijeda-Ijesa, ($P < 0.05$) whereas in Iloko-Ijesa the analysis revealed no significant difference between number in a household and the health of residents in such houses ($P > 0.05$).

VIII. Conclusion

This study revealed that housing conditions play a vital role in healthy living and life sustainability. Among the notable findings of this study is the fact that there is a relationship between housing condition and the health of the residents. Although this was more visible in one of the two communities, other studies (Faelker, Pickett & Brison, 2000; Fullilove & Fullilove, 2000; Evans et al, 2000; Krieger & Higgins, 2002; Shaw, 2004) have proved that housing condition did affect the health of residents. From the analysis and the chi-square test, it can be safely concluded that there is relationship between housing condition and human health.

IX. Recommendations

The following measures are therefore recommended for the improvement of the study area and the quality of housing.

Effective enforcement of building codes: The development control department of the local government should properly enforce the building codes right from the plan approval stage up to the implementation stage to ensure that buildings are constructed according to the approved specifications.

Public Education: There is need for public enlightenment about the causal relationship between housing condition and healthy living. This will go a long way to improve the health of the people. This could be done by the local government through the sanitation workers working as extension officers to enlighten the public of the importance of maintaining healthy environment and ensuring that minimum requirements for healthy housing are observed.

Financial assistance to the residents: Government at all levels should make soft loans available to rural residents for erecting healthy housing units. Such loans should be monitored and properly processed to prevent misuse and mismanagement. Such a loan could also be procured to rehabilitate and renovate buildings to the required standard.

Housing policy: Government at the three levels should work together to design and implement housing policies that will ensure easy access to affordable, adequate and safe housing for all.

Design of master or development plan: One of the crucial tools of physical planning is the master plan. The two villages have no master plan that will specify the direction of development and give specification for structures in the towns. This led to unregulated and uncoordinated development which allowed the erection of sub-standard and unhealthy buildings in dirty environments. It is imperative that master plan be designed for the towns to regulate their growth and direct their development.

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Tables

Table 1 : Physical Structure of the Houses

		IJEDA		ILOKO	
Variables	Response	N= 138	Percentage	N =96	Percentage
Age of the Building (yrs)	< 5	7	5.1	18	18.8
	6-10	47	34.1	29	30.2
	11-15	34	24.6	20	20.8
	16-20	17	12.3	14	14.6
	21-25	20	14.5	11	11.5
	26 & above	12	8.7	4	4.2
	No response	1	.7	-	-
Wall Materials	Mud	77	55.8	51	53.1
	Cement	55	39.9	42	43.8
	Burnt brick	1	.7	1	1.0
	No response	5	3.6	2	2.1
Roofing Materials	Corrugated iron sheets	98	71.0	71	74.0
	Concrete	8	5.8	-	-
	Aluminum	24	17.4	16	16.7
	Others	1	.7	-	-
	No response	7	5.1	9	9.4
Flooring Type	Cemented	130	94.2	71	74.0
	Not cemented	6	4.3	23	24.0
	System	2	1.4	2	2.1
Ceiling Type	Asbestos	118	85.5	59	61.5
	Sack	3	2.2	6	6.3
	Wood or plank	15	10.9	24	25.0
	Not available	2	1.4	7	7.3
Access to the house	Foot	109	79.0	57	59.4
	Road	29	20.7	39	40.6

Source: Field Survey, 2013

Table 2 : Toilet Facilities

Variables	Response	IJEDA N= 138	IJEDA Percentage	ILOKO N =96	ILOKO Percentage
Place of defecation	Do not use toilet	16	11.6	21	21.9
	Public toilet	48	34.8	31	32.3
	Private toilet inside/outside house	73	52.9	40	41.7
	Private toilets in someone else's house/ compound	-	-	2	2.1
	No response	1	.7	2	2.1
Kind of toilet	Water closet	47	34.1	25	26.0
	Pit latrine	50	36.2	38	39.6
	Bush around the house	40	29.0	33	34.4
	No response	1	.7	-	-
Number that shares toilet	No other household	76	55.1	40	41.7
	One to two other household	20	14.5	21	21.9
	Three to five other household	-	-	1	1.0
	Six to ten other household	21	15.2	10	10.4
	More than ten other households	15	10.9	14	14.6
	System	6	4.3	10	10.4
Cleaning water available in the toilet	Yes	45	32.6	35	36.5
	No	87	63.0	58	60.4
	No response	6	4.3	3	3.1

Source: Field Survey 2013

Table 3 : Prevalent ailments and frequency of occurrence

Variables	Response	IJEDA N= 138	IJEDA Percentage	ILOKO N =96	ILOKO Percentage
Common ailments	Malaria	68	49.3	55	57.3
	Typhoid	7	5.1	1	1.0
	Dysentery	27	19.6	20	20.8
	Cholera	5	3.6	1	1.0
	Diarrhea	-	-	2	2.1
	Others	30	22.4	13	13.5
Cause of ailments	Bad water	6	4.3	9	9.4
	Bad sanitation & hygiene	22	15.9	25	26.0
	Crowding	2	1.4	-	-
	Bad food	11	8.0	3	3.1
	Mosquitoes bite	55	39.9	40	41.7
	Polluted air	18	13.0	3	3.1
	Change of season	14	10.1	4	4.2
	Others	8	5.8	9	9.4
	No response	2	1.4	3	3.1
Satisfaction with the services provided at the health centre	Yes	117	84.8	80	83.3
	No	21	15.2	16	16.7

Source: Field Survey 2013

Table 4 : Chi-square Test

	IJEDA			ILOKO		
	x^2	df	p value	x^2	df	p value
Age of the building and health of residents	41.917	20	.003	25.934	25	.411
Building types and health of residents	4.285	8	.831	95.670	10	.000
Household size and health of residents	14.635	4	.005	7.654	4	.105
Design of the building and health of residents	9.174a	4	.057	7.957a	5	.159

Source: Field Survey, 2013