HOUSING CONDITION AND ENVIRONMENT INDUCED ILL-HEALTH: A PANACEA FOR SUSTAINABLE HEALTHY LIVING IN AKOKO REGION, ONDO STATE, NIGERIA

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ABSTRACT: The study examined housing condition and environment induced ill-health with a view to identify ways to improve standard living in Akoko region, Ondo state, Nigeria. The specific objectives of the study examined; the household population and occurrence of ill-health and inter-relationship of ill-health and housing condition within the study area. Questionnaire administration harvested information on physical housing variables, available facilities, infrastructural services, housing conditions, and health status of respondents in Ikare, Ajowa and Ose that represent large, medium, and small towns respectively. Simple percentages and correlation analysis were used to summarize data, while tables, charts and figures presented results of the findings. The study revealed that diverse ill-health abound in the study area. However, body pains and malaria have the highest proportion of 18.4% and 23.7% respectively as a result of the observed inter-relationship between body pains and increased malaria parasites. The high occurrence of sleeplessness in the study area is related to the kind of noise being exposed to in this area where socio-economic activities (such as multipurpose, religious, extreme labour activities) are regularly taken place. The study therefore recommends that accessibility to quality housing should be prioritized by the people with standard housing conditions that could facilitate sustainable healthy living.

KEYWORDS: Quality, Health, Facilities, Standard, Correlation.

1 INTRODUCTION

In recent times, there have been growing interests over the relationship between housing condition and environment induced health problems. This has pushed several countries of the western world to carry out studies on various housing conditions as they affect people's health. Similarly in the developing countries, especially in Nigeria, several scholars have also intensified efforts to understand what transpire between the health status of people and their living condition.

According to Reference [1], housing is more than mere shelter. Reference [2] observed housing as an agglomeration of several components - basic facilities and infrastructural services, which enable it to perform protective, convenience and comfortability roles to the inhabitants. It is a place where people mostly spent about 40-60 percent of the day life. It also serves the active members and the youngsters of the society in enjoying their time. Reference [3] submitted that housing must be suitable and possess the minimum facilities for human health and comfortability.

Reference [4] posited that human health manifest in physical and mental wellbeing of individual. He further stated that a better evaluation of the performance of the body system can be achieved when the physical and mental well being (health status) is approached holistically to understand individual roots of health problems. He also opined that clinical diagnose should go beyond physical examination to include social living conditions. It is when these are evaluated in relation to reported health problems that proper management can be possible.

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In addition, Reference [5] explained that environmental conditions are connected to the health of people. There are various unwholesome environmental conditions identified by scholar such as dumping of refuse indiscriminately, uncollected refuse, unprotected excretion, bushy surroundings and stagnant water among others mainly in the urban areas which may have a deleterious effect on health of residents.

This study will enhance and promote good housing condition in line with the Millennium Development Goals Strategies (MDGS) on adequate housing. It will open a new area of research on housing problems that previous studies eluded, which is very critical to human existence. Succinctly, it will serve as a guide to housing developers and policy makers toward formulation of physical development policy in Akoko region of Ondo State and similar areas in the country.

2   STUDY AREA

The study area is Akoko Region in the Northern Senatorial District of Ondo State, Nigeria (Figure 1 & 2). It lies between latitude 7°19'N and 7°46' North of the Equator and longitude 5°30'E and 6°15' East of the Greenwich Meridian (Figure 3). It covers land area of about 836,970 square kilometer [6]. It has four Local Government Areas, sprawling over 40 settlements. Akoko region is bounded in the East by Edo State, and in the West by Ekiti State. It is also bounded in the North by Kogi State, while in the South by Owo and Ose Local Government Area of Ondo State (Figure 2).

According to Reference [7] the study area is situated in the western upland areas of Nigeria, which is characterized by rugged topography. The land is underlain with the old Pre-Camberian complex basement rocks. These rocks are mainly of gneiss, schist and quartzite with an elevation ranges between 150-500 metres above the sea level. These hills are visible along Owo - Oba Akoko road, between Iwaro and Akungba, also between Akungba and Supare, Ikare, Epinmi, Sosan and Okeagbe Akoko. Because of the nature of basement - rock, access to under ground water is very difficult and the few ones available are seasonal. This makes availability of portable water a goldmine during the dry season. This is more reason why the residents of the area depend mainly on pond water in the absence of public tap, which may not be hygienic enough.

Reference [8] observed that the study area is associated with Tropical Climate. The mean monthly temperature is 27°C (80°f) with very little variation. This implies that cross ventilation need emphasis for comfort relaxation in the area. The size of windows should be standard rather than discretionary. The rainfall is usually torrential in nature and can last for several hours. This usually makes houses with poor materials susceptible to water erosion, especially, those situated on steep terrains.

The soil of the study area is ferruginous type. This is a thick clay soil, which is sticky when wet and becomes solid dry after a while. It is the main material for local housing construction, especially brick-making in the study area. The vegetation of the area is evergreen comprises of various species of hardwoods such as Iroko, Mahogany and Afara. These, among others, are good materials for housing construction.

According Reference [9], the Akoko Region is comprising of four local government areas has the population of 831,843 people. By virtue of function and services, the study area have five urban centers. The first is Ikare which is the commercial center of the region, Okeagbe is the headquater of Akoko North West, Isua is headquater of Akoko South East while Oka is also performing headquarter roles to Akoko South West, while Akungba renders Educational services through the university.

Figure 1: Study Area
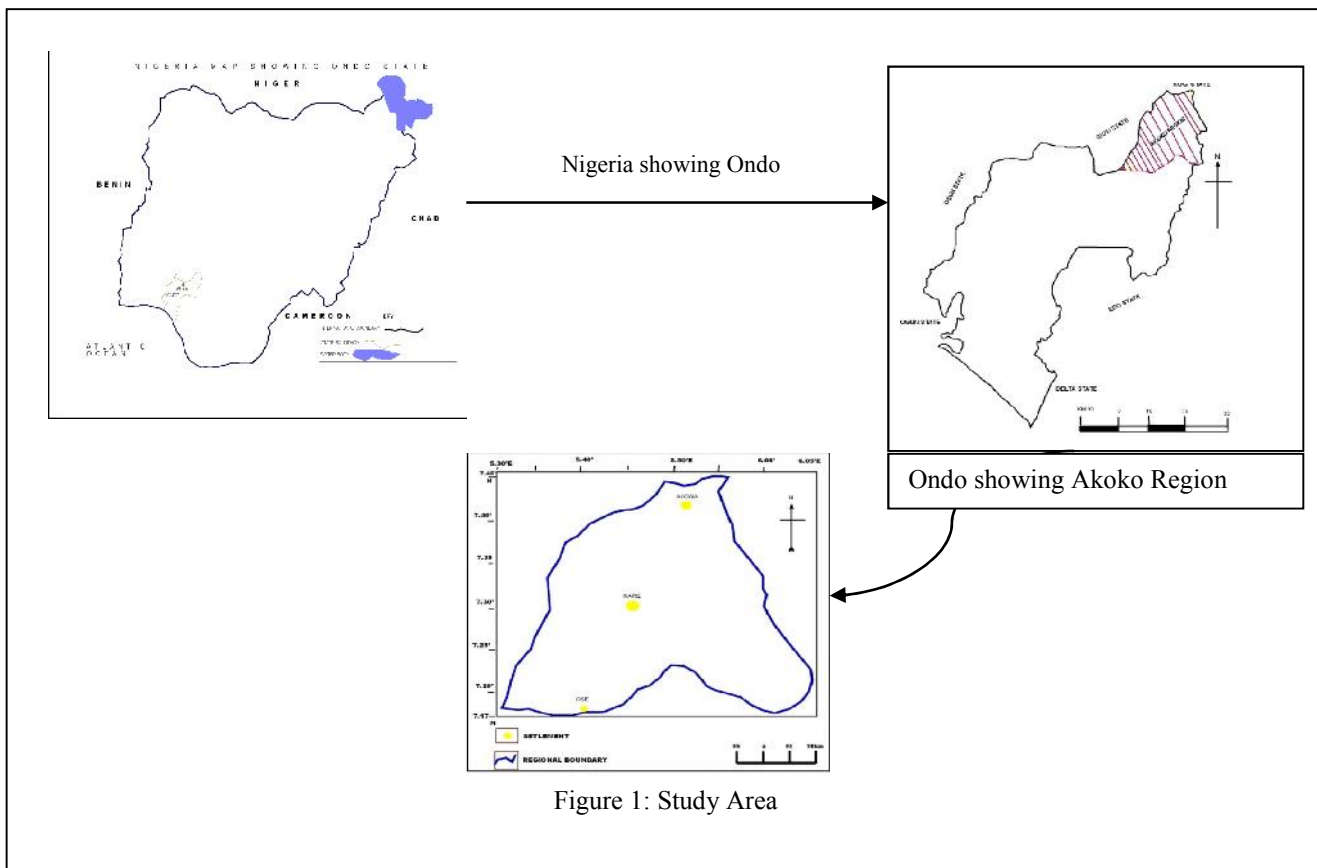
3 CONCEPTUAL CLARIFICATION

3.1 HOUSING QUALITY

The Human Concept of housing quality as put forward by Reference [10] is made up of four sub-systems including, the tenant subsystem, the dwelling sub-system, the environmental sub-system and management sub-system and they are interwoven.

Dwelling sub-system - This is the type and quality of dwelling, which include size of compound, size of rooms, internal space and draught, construction quality plumbing and electrical fixture, external aesthetics, children play area such as streets, courtyards, verandas and storage space among others. These qualities are the major determinants of housing quality in the developing world. It may indicate elements for housing satisfaction, which Reference [11] observed to be influenced by the users' need and location.

The environmental sub-system - This is the location of the dwelling. The element of the environment are level of neighbourhood maintenance, level of privacy enjoyed by residents, peaceful / pleasant of the environment in relation to noise and unpleasant smell and number of rooms.

Management Sub-system - This is the institutional arrangement under which the dwelling is being managed or the pattern and type of dwelling management. This constitutes rent assessment, sanitation up keep of the compound, response to repair and regulation management.

Tenant Sub-system - This embraces all the other sub-system of which other subsystem are the textual elements of satisfaction [11]. All the elements of the sub-systems shaped the utility of resident on the quality of housing.

3.2 HOUSING QUALITY INDICATOR MODELS

Reference [12] also adopted housing quality indicator model that identified objective indicator, subjective indicator and

social indicator models.

Objective indicator model - Duel to few Study on housing quality and conditions is quite inadequate especially in this part of the world. Lots of scholars assessed policy formulation and implementation based on fractional parts of housing problems. Objective indicator helps gaining insight into housing problem, while some people felt it is not completes. The study of community housing satisfaction by Reference [7], shed light on objective quality indicator. This conceptual model assumes that satisfaction is different from the feelings of happiness. This is because the basis standard of assessing satisfaction depends largely on the elements used for evaluation. Marans and Rodger posits that general satisfaction depend on 'the physical conditions of the residential environment, the convenience of public and private facilities and services, the size of one's dwelling, the presence of such condition as space, quietness and safety of surrounding. Besides, the most immediate aspect of the residential environment for the individual and the one with which she or he is most closely identified is the private dwelling unit, be that a single family house, apartment, mobile home, or make-shift type.

Subjective indicator model - Reference [13] argue that 'measure of community or subjective indication many prove to be reliable contribution toward the development of multifaceted social indicator. The premise remains is on the level of community satisfaction being identify in particular term and directed at elements of satisfaction. The advocator of subjective indicator believes that subjective indicator is not enough to measure satisfaction level away residents but it is a starting point for the consideration of subjective indicators (perception assessments, satisfactions). It can only grant some understanding of the level of satisfaction. The pattern of satisfaction with housing expressed by various race, age, income, are similar to those of community and neighbourhood. Most of the relationship between personal characteristics and housing satisfaction is medicated by the assessment of specific housing characteristics [14].

When variables like household composition, housing conditions, lengths of occupancy, length of residency in community etc were used a study they usually have similar relationship to income or education an term of level of satisfaction [15]. It was verified with focus on effect of household composition, housing, length of house occupancy and residence into the community, and presence of friends or relatives in the community. The findings suggest that : (1) residents in homes with greater density were more critical on their communities; (2) house owners were no more satisfied with their communities than mere home owners; (3) length of residence in both the house and community were not consistently correlated with satisfaction with the community; and (4) perhaps the presence of relations in the community tends to result in a lower level of satisfaction, while the presence of friends increases the level of satisfactions. Reference [16] measured well-being in terms of sell-on closing serving scale, loud subjective differences in aspirations cross - culturally.

Reference [17] found that subjective evaluations of present and future situations are influenced by race, income and education and that a sense of well-being is supposedly enhanced by familiar people and living environment.

Social Indicator Model reveals a variety of conception of the nature and causes of subjective states of people. The difficulty of isolating even a few pertinent factors which might provide an adequate link between objective and subjective state of reality is apparent. However, one item which, tends to recur in the literature is housing. The walls, floors, and roof, which daily shelter an individual cannot help but continuously include into one's life space.

The indicators of housing quality may appear to be simple, unambiguous, and accurate. Reference [18] contends that this is not the case. His criticisms are three fold; first, existing indicators which rely on condition of structure, plumbing facilities, overcrowding, and rent. Objective do not seem to correlate to people's subjective reaction to their housing situation; second, the census Bureau has acknowledged serious shortcomings in the accuracy, if not meaningfulness of their data on housing; third the few theoretical attempts to deal with constructing new indicators are too limited in their efforts to serve as indicators of overall residential living quality. Marcuse suggests a new theoretical formulation using social indicators to develop new effective housing indicators. He said 'the new social indicators offers one approach to a reformulation of national housing goals.

According to Reference [19], the social indicators will comprise among others the social relation among neighbourhood, opinions about the neighbourhood, General organization and arrangement of the neighbourhood and location of essentials and distance to work, school, market, school among others.

These models are relevant to this work since they addressed the quality of housing and residents responses. Since housing is more than shelter, it is a combination of other essential utilities [2]. The models touch several variables abide dwelling ambient, which affect people in relative to their home. The model gave insight to various aspect of housing and how people perceived what they are using daily and feel everytime. They also helped people to know what they experienced daily where they spend more than 60% of day hours.

4 MATERIALS AND METHODS

Data for the study were collected through primary and secondary sources from Akoko Region. The settlements, as noted in Reference [20], were stratified into sizes using population criterion by considering population above 100,000 as large; those between 20,000 and 100,000 as medium, while less than 20,000 as small. Questionnaires were administered on household heads to draw information on physical housing variables, facilities available, infrastructural services, housing conditions, and health conditions of respondents. Three (3) settlements were purposively chosen as sampling size of which Ikare, Ajowa and Ose were represented with large, medium, and small towns respectively (Table 1). Simple percentages and correlation were used for data analysis. Tables, charts and figures are used for the summary and presentation of data.

Table 1: Sampling Size

Settlement	Status	Population	Housing Units	Selected Units	Percentage
Ikare	Large	152,528	5259	350	6.7%
Ajowa	Medium	24,003	1411	141	10.0%
Ose	Small	2,637	293	58	20.0%
Total		179,168	6963	549	8.0%

Source: Authors' field work, 2013

5 RESULTS AND DISCUSSIONS

5.1 HOUSEHOLD COUNTING

The number of persons in a household for the study area is revealed in table 2. In Ikare, 21.4% have 2 to 5 persons in their households, 30.1% have 6-8 persons, 8.4% have 9-12 persons while 3.3% have more than 12 persons. Ajowa has 13.7% with 2 to 5 persons in a household, 9.6% have 6 to 8 persons, 2.7% have 9-12 persons and Ose 4.3% said they have 2-5 persons, 5.1% have 6 to 8 persons while 1.6% have 9 to 12 persons in their households. The study established that majority of the household counting are above 5 persons and this indicates congestion that may put pressure on housing facilities and induction of related ill-health in the study areas.

Table 2: Number of People in Household

Location	Household Counting									
	2-5		6-8		9-12		> 12		Total	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Ikare	109	21.4	154	30.1	42	8.2	17	3.3	322	63
Ajowa	70	13.7	49	9.6	14	2.7	0	0	133	26
Ose	22	4.3	26	5.1	8	1.6	0	0	56	11
Total	201	39.4	229	44.8	64	12.5	17	3.3	511	100

Source: Authors' Field Work, 2013

5.2 REPORTED ILL-HEALTH IN AKOKO REGION

The recorded number of patients by various health institutions relating is examined and presented in table 3. It was observed that 9.9% were treated for cold in Ikare, 22.9% for sleeplessness, 19.5% for body pains, 7.6% for cough, and 2.1% for itch / rash, 1.1% for difficulty in breathing, 16.3% for malaria, 15.3% for typhoid and 5.3% for diarrhea. In Ajowa, a total of 1139 patients were received, out of which 9.6% have common cold, 2.4% were of sleeplessness, 32.8% have body pains, 5.0% for cough, 1.8% were affected with itch/rash, 0.8% have difficulty in breathing, where 26.7%, 16.0% and 4.9% were affected by malaria, typhoid and diarrhea respectively. In Ose, there were 565 patients received for the period, 8.5% are for common cold, 11.1% for sleeplessness, 18.4% for body pains, 10.8% for cough, 3.2% for itch/rash, 2.3% for difficulty in breathing, 23.7% for malaria, 16.3% for typhoid and 5.7% for diarrhea. The findings indicate body pains and malaria with highest percentage among the identified ailments. The study is related to the observation in Reference [4] who reported that body pains may be attributed to malaria parasites, since body pains are one of its major symptoms. The high occurrence of sleeplessness may not be unconnected with the kind of noise being exposed to in this area where socio-economic activities (such as multipurpose, religious, extreme labour activities) are regularly taken place.

Table 3 : Reported Ill-Health in Government Hospital

No	Ill-Health	SSH Ikare		CHC Ajowa		BHC Ose		Total	
		Count	%	Count	%	Count	%	Count	%
1.	Cold	566	9.9	109	9.6	48	8.5	723	9.7
2.	Sleeplessness	1309	22.9	28	2.4	283	11.1	1400	19.1
3.	Body pains	1116	19.5	373	32.8	104	18.4	1593	21.5
4.	Cough	430	7.5	57	5.4	61	10.8	548	7.4
5.	Itch / rash	121	2.1	21	1.8	18	3.2	160	2.1
6.	Breathing Problem	62	1.1	9	0.8	13	2.3	84	1.1
7.	Malaria	931	16.3	304	26.7	134	23.7	1369	18.5
8.	Typhoid	873	15.3	182	16.0	92	16.3	1147	15.4
9.	Diarrhea	302	5.3	56	4.9	32	5.7	390	5.2
	Total	5710	100	1139	100	565	100	7414	100

Source: Government Health Centers, 2013
SSH: State Specialist Hospital, CHC: Comprehensive Health Centre, BHC: Basic Health Centre

5.3 INTER-RELATIONSHIP BETWEEN HOUSING CONDITIONS AND REPORTED ILL-HEALTH

The correlation output matrix of the study is presented in table 4. This shows the relationship between housing condition and environment-induced ill-health reported by residents in the study area. The variables under consideration include: type of houses (block or hand-mold), house models, water sources, building surroundings, source of power, waste point, flood prone, soil conditions, noise, room(s) per household, numbers in household and year of construction, condition of roof, wall, toilet, kitchen, store, access to road, security, food protection, fire safety and drainage system; while reported ill-healths include; cold, sleeplessness, body pain, cough, itch/rash, breathing problem, malaria, typhoid and diarrhea. The reported ill-health is dependent variables, while the housing quality variables were set as independent variables.

Correlation analysis revealed level of inter-relationship between house model, house surroundings, waste point, conditions of roof, building wall, available toilet, kitchen, store, pets intrusion, ventilation, temperature, food protection, drainage, number of persons in household and cold. Also, body pains is related to conditions of roof and house model; whereby, cough and condition of wall, room temperature, type of house have an established relationships. Condition of kitchen, room temperature, house model are related with and itch/rash; conditions of wall and house model determine breathing problem; where malaria is connected with condition of wall, room temperature, house model, and waste point proximity. It was equally observed that typhoid and diarrhea are associated with ventilation and house model.

Table 4: correlation between Housing conditions and reported ill-health

Housing Condition	Cold	Sleeplessness	Body pain	Cough	Itch/rash	Difficult in breathing	Malarial	Typhoid	Diarrhea
Roofing Condition	.040	-.008	.121**	.056	.167*	.052	.110*	.114*	-.010
Wall	.098*	-.013	.078	.118**	.113*	.128**	.142**	.084	.032
Toilet	.056	-.067	.075	.047	.006	-.018	.049	-.093*	-.015
Kitchen	.014	-.001	.052	.105*	.129**	.067	.091*	.080	.050
Store	.052	-.091*	.023	-.63	-.023	-.120**	-.025	.017	-.103*
Access to pets	-.040	.010	.078	.110*	.106*	.102*	.094*	.078	.068
Ventilation	.063	.039	.075	.069	.069	.006	.087*	.123**	-.049
Temperature	.063	.067	.076	.123**	.116**	.065	.126**	.144**	.-.001.
Access to road	.083	.008	-.096*	.105*	.030	-.016	.090*	.060	-.002
Security	-.010	.073	-.153**	.193**	.142**	.064	.105*	.138**	.169**
Food protect	.095*	.047	.107*	.063	.089*	.015-	.001	.067	.009
Safety Measure	.095*	.047	-.074	.089*	.068	-.033	-.002	.067	-.025
Drainage	-.001	-.049	-.042	.049	-.035	-.059	.032	-.059	-.058
Type of house	.061	.039	.105*	.129**	.016	.021	.057	-.130**	.029
Model	.058	.050	.160**	.108*	.166**	.178**	.093*	.120**	.111*
Water sources	.093*	.100*	-.056	.017	-.024	-.087*	-.031	-.034	-.076
Surroundings	.037	.017	.102*	.056	.071	-.039	-.010	-.054	.021
Power	-.123*	-.186*	-.051	-.131**	-.145**	-.209**	-.032	-.037	-.183**
Waste point	-.009	-.020	.109*	.010	.017	.113*	.120**	.078	-.022
Flood prone	.056	.054	-.058	.031	.015	.026	-.114	-.185**	.026
Soil control	.033	-.061	.081*	.063	-.056	.005	-.039	-.104*	-.053
Noise	-.156**	-.056	.227**	.031	.038	.059	.035	-.094*	.003
Room/household	.042	-.009	.020	-.006	.007	-.028	.020	-.018	-.046
Nos/household	.162**	.086	.025	.074	-.018	.076	.103*	.090*	-.058
Year of construction	-.087	.007	-.007	.003	-.027	-.121**	-.052	-.063	-.068

*correlation is significant at 0.05 level. **correlation is significant at 0.01 level
Source: Authors' Survey, 2013

The above relationships show that the conditions of health in the study area varied with diverse influence of the above housing conditions in the study area. In additions, the wall, room temperature and house model accounted for the highest numbers of correlated patterns that play significant roles in the state of health conditions of the residents. It is generally clear that stable consideration for proper housing condition is pre-requisite to averting the incidence of reported ill-health in this area.

6 CONCLUSIONS AND RECOMMENDATIONS

The study revealed the relationship between housing quality and health conditions of Akoko region in Ondo State, Nigeria. It was established that body pains and malaria have the highest proportion of 18.4% and 23.7% respectively among the identified ailments in the study area. This suggests that ill-health is multifaceted problems that dominates human immediate environment. The study therefore recommends that accessibility to quality housing should be prioritized by the people. Standard housing conditions has to be incorporated with such factors that include adequate hygiene, sanitation, and precautionary habits on unhealthy practices among other things for sustainable healthy living. This practice will check the incidence of living in unhealthy environment as identified in the study area.

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