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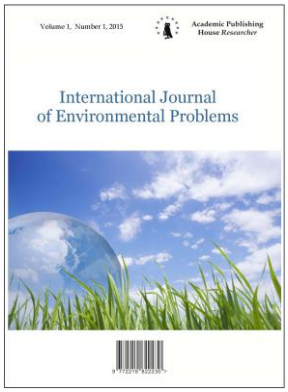

Analysis of Factors Responsible for Poor Urban Environmental Health among Vulnerable Residents of Ondo, Nigeria

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Abstract

Background. This study examines factors responsible for poor environmental health among vulnerable residents of Ondo, Nigeria. This was with a view to suggesting policy response capable of enhancing healthy environment in the city and others with similar background.

Materials and Methods. Systematic sampling was used to collect data from a total of 196 households having stratified the study area into the high, medium and low densities residential neighbourhoods. Both descriptive and inferential statistics were utilized.

Results. Findings showed that low government intervention was the most important factor responsible for poor urban environmental health in the study area. Results showed that environmental factors are significantly related to health situation of vulnerable people in the study area.

Conclusion. The study concluded that poverty tends to breed poor environmental and unhygienic conditions that have great impact on human health. The study therefore suggests some policy guidelines, including redevelopment (in some parts of the study area), upgrading and provision of basic infrastructural amenities and facilities.

Keywords: urban, environmental, health, vulnerable groups, city.

1. Introduction

The urban environment is a living organism; people react with it, and in turn it reacts with the people. It is the mirror with which we reflect our beings. Therefore, to look at our cities is to see into our future (UNDP, 2000). What the present and the future of our cities hold for us differ from place to place and time to time. Urban cities attest to rapid urbanization particularly in the developing countries. Available statistics evidenced that 43.1 % of the population was urban in 1991. It is forecast to be 63.0 % in 2030. The urban growth rate is 4.5 % while the rural rate is 0.9 %. Already some 50.0 % of the world's population lives in cities, within 25 years it will be 75.0 %. Africa, currently the least urbanized continent, will have a majority of its population living in cities within 20 years. It is clear that the future of the world lies in cities. This is where the battle for sustainable development will be won or lost (WHO, 2010). Urbanization and its sustainable management are not without externalities (World Bank and World Resources Institute, 2015).

WHO (1989), conversely, an unhealthy population produces less and may be forced into practices that which will damage the environment. Inadequate or lack of access to regular supply of food and uncontaminated water, indiscriminate sewage and refuse disposal, laissez-faire attitude of

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the people and lack of government funding bring about unhygienic environment that culminate in ill health (UN-Habitat, 2006). Furthermore, plants and animals of the natural ecosystem sometimes constitute health hazards that threaten the life and well-being of man in the environment. For instance, rats spread diseases alongside with other animals like rodents which cause damage to vast quantities of cereal crops annually. Locusts too do a lot of havoc to crops while mosquitoes and tsetse-fly are carriers of diseases like malaria and sleeping sickness. Pollen and other plants emissions as well can cause uncomfortable or painful allergies (Owoeye, Omole, 2012). The necessity for quality water supply complicates the issue in most of developing nations of the world, particularly, Nigeria. Drinking and using untreated water lead to the spread of diarrhea and other water-borne diseases (Okafor, 2008).

The environment is a composite of behavioral settings which greatly affects the health of vulnerable persons. Environmental factors that affect health are in turn linked to underlying pressures on the environment. These pressures are a result of intense urbanization witnessed by most developing countries (Omole, 2008). In a recent United Nations Development Programme (UNDP) Ondo is presently estimated to be 3,441,024 and is expected to hit the 5.5 million population mark and thus be among the ten most populous cities in Nigeria by the year 2025. This is indeed frightening, considering the small size of the state put at 300sqkm and the type of density just stated the weak infrastructural base to support such a huge population and, the current economic growth rate which is below 13 %. Omole (2009), exposure prevalence study which concluded that, overall, 99.8 % of deaths associated with risk factors are in developing countries, and 90 % are deaths of children.

Also, these hazards have changed from the traditional factors often caused by poverty and insufficient development, and include lack of safe drinking water, inadequate sanitation and waste disposal methods to more modern hazards which are more global. These include; lack of coordinated health and environmental safeguards, air pollution, over-consumption of natural resources, widespread water pollution, population sprawl, intensive industrial development, climate change, and stratospheric ozone depletion. Each of these environmental hazards is associated with a variety of economic and social determinants of health (Adelekan, 2006).

In addition, protecting and improving the quality of the environment is fast becoming a necessity rather than a luxury. Rapid urbanization in the developing world is threatening health, the environment and urban productivity (Afon, 1998). Owoeye (2009) asserted that problems of environmental deterioration emanate from poor environmental sanitation. Thus, practicing good and efficient management of the environment can best provide a permanent solution. This has drawn attention of many scholars, to the effect of urban environmental health on vulnerable groups within and outside Nigeria: (Agbola, 2007; Yoade et. al., 2003; Yoade, 2016).

However, it could be seen that there are a lot of studies on urban environmental health on vulnerable groups both within and outside Nigeria. It could be asserted that information on study of urban environment on vulnerable groups in cities of Southwestern Nigeria is scanty, particularly in Ondo as there little or no literatures in relation to urban environmental health on vulnerable groups. Yet the effect of urban environmental health on vulnerable is important so as to guarantee a sustainable and healthy environment for its inhabitants. It is on this note that this study therefore examined factors responsible for poor urban environmental health among the vulnerable groups with particular reference to Ondo, Nigeria.

2. The Literature

Vulnerability is a multi-dimensional concept that comprises physical, social, economic, environmental, political, cultural and institutional factors. The perception of hazards, disaster, urbanization and vulnerability is increasing both in developing and developed countries of the world. The additional billion people added to the world's population in every 12 to 13 years are mortally taxing the earth and its resources. Each individual person has a unique impact on the planet's environment and no living individual is without an ecological footprint (WHO, 2010).

The term 'vulnerable groups' however, is used just as a convenient (but misleading) shorthand for showing concern for a long list of groups considered more at risk, without a need to ask why they are vulnerable and what needs to change. An individual or household is said to be vulnerable to a risk (such as malaria-spreading mosquitoes, contaminated water or a flood) if they are more susceptible to being harmed or killed by it, or less able to cope or adapt to the poor

environment (to lessen the risk). The lives of infants and young children are generally more at risk from malaria and contaminated water than the lives of adults. The vulnerable groups includes; Children, pregnant women, elderly people, malnourished people, and people who are ill or immune compromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies (Wilson, 2002).

Available statistics show that more than half of the world's 7 billion people live in urban area, crowded into three per cent of the earth's land area. The proportion of the world's population living in urban, which was less than five per cent in 1800, increased to 47 per cent in 2000 and it is expected to reach 65 per cent in 2030 (Tomori, 2008). From this global view, however, more than 90 per cent of the future population growth will be concentrated in developing countries' cities and a large percentage of this population will be poor, living in marginal land (Oriye, 2009).

Vulnerability is dynamic; varying across temporal and spatial scales, and depends on economic, social, geographic, cultural, institutional, governance, and environmental factors (Oyeshola, 1995). Individuals and communities are differently exposed and vulnerable and this is based on factors such as wealth, education, race/ethnicity/religion, gender, age, class/caste, disability, and health status. Lack of resilience and capacity to anticipate, cope with, and adapt to extremes and change are important causal factors of vulnerability (Egunjobi, 1999).

Many factors contribute to vulnerability. These factors act to undermine capacity for self-protection, blocks or diminish access to social protection, delays or complicate recovery, or expose some groups to greater or more frequent hazards than other groups (Damas, Israt, 2004). They include rapid population growth, poverty and hunger, poor health, low level of education, gender inequality, fragile and hazardous location, and lack of access to resources and services, including knowledge and technological means, disintegration of social patters (social vulnerability). Other causes includes; lack of access to information and knowledge, lack of public awareness, limited access to political power and representation (political vulnerability) (Birkmann, 2006). When people are socially disadvantaged or lack political voice, their vulnerability is exacerbated further (29; 30). The economic vulnerability is related to a number of interesting elements, including its importance in the overall national economy, trade and foreign-exchange earnings, aid and investment, international prices of commodities and inputs, and production and consumption patterns (Ibem, 2010). Environmental vulnerability concerns land degradation, earthquake, flood, hurricane, drought, storms, water scarcity, deforestation, and the other threats to biodiversity (Egbunjobi, 2016).

Therefore, vulnerability could be seen as a multifaceted phenomenon. As such, solutions, too, must be multifaceted, addressing the range of social, cultural, demographic and economic conditions – often interacting in complex ways – that culminate in population vulnerability. Population changes also require the frequent and thoughtful revision of existing policies, plan, urban and disaster management options. Therefore, emergency managers, planners, and other policy's fingers, as noted by (Owoeye, Sogbon, 2012), should center on socio-economic and demographic characteristic (social inclusiveness) of the communities that require policy interventions (Owoeye, Obayemi, 2015).

3. The Study Area

Ondo city one of the major urban center in Ondo State and the city is located on latitude 06°30'N and longitude 04°45'E. The city is bounded on the north by Oluji/Okeigbo local government, on the east by Idanre local government, on the west and south by Odigbo local government. The population of the town stood at 113,900 during the 1991 population census. Ondo falls within the 'tropical wet and dry climate' with a relatively small dry season. Currently, there are 12 political wards in Ondo city. Consequently, rainfall in Ondo is seasonal in character with well-marked wet and dry seasons. The dry period comes between November and February, while the wet season lasts for 8 months from March to October; the mean annual rainfall is about 1615mm. the annual mean temperature is 27°C, with a maximum of 30°C.

Ondo landscape is made up of generally undulating hills of granite outcrop of igneous origin, and is marked by few dome-shaped hills. The hills are found to be developed over the basement complex of metamorphic rocks and their summits ranging between 250 and 500 metres above sea level (Akintola, 1982). The town has no major river; rather it is drained by several streams with fairly wide flood plains. The important of these streams are Luwa, Lisaluwa and Mode. The town

falls within the moist/wet lowland forest i.e. it has thick forested vegetation, but due to human activities most of these original forest has been replaced with secondary re-growth. Currently, there are 12 political wards in Ondo city (Figure 1).

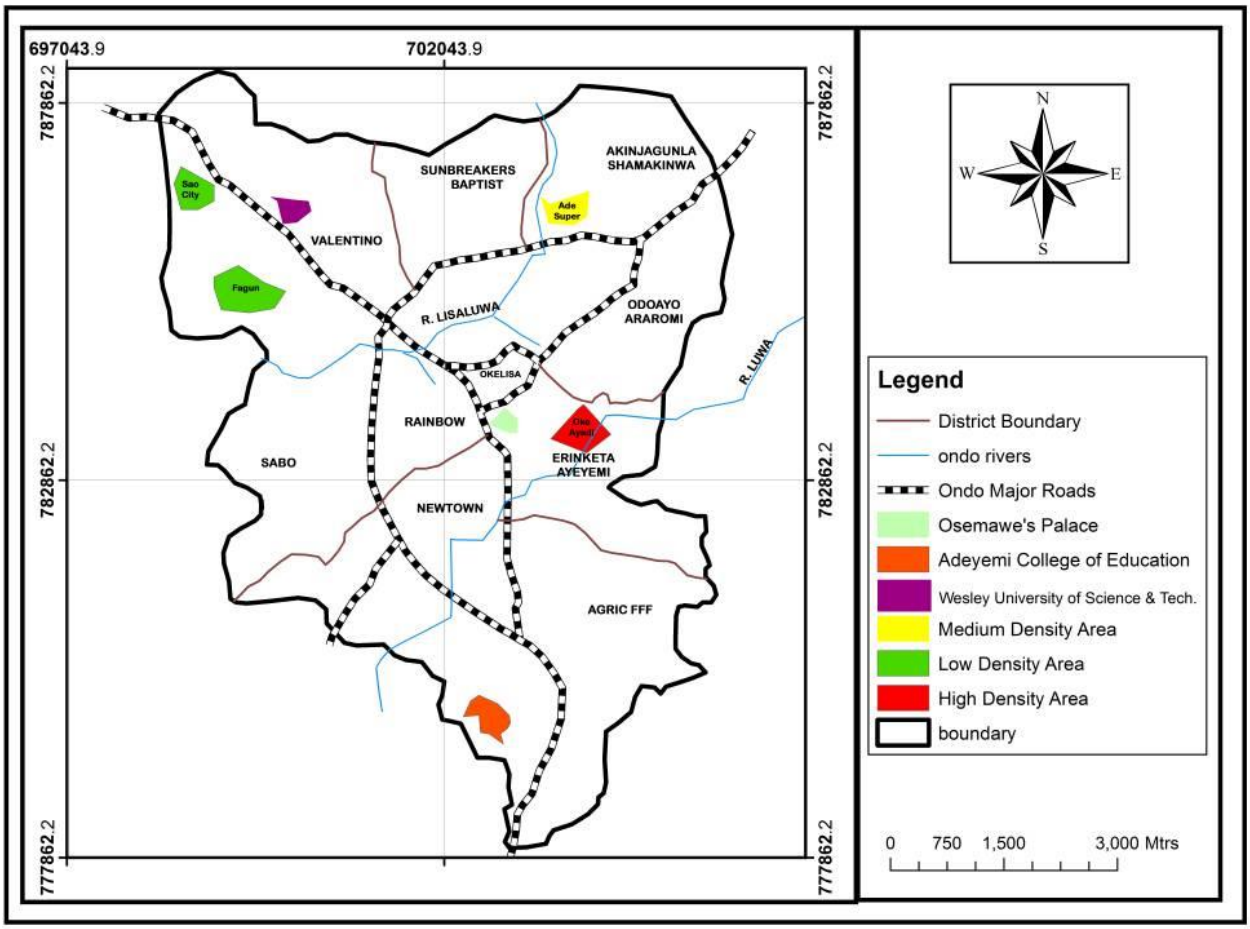

Fig. 1. Map of the Study Area
Source: Ondo west Town Planning Office

4. Methodology

For collection of primary data, questionnaires were administered using systematic sampling method. There are twelve political wards in the study area; out of five (5) political wards fall under the core area (high density); four (4) wards fall under (medium density) while the remaining three (3) fall under low density area and these become the sample frame. Simple random sampling was used to select a ward randomly from each density. Systematic sampling technique was used in selecting residents to be sampled. The first building was chosen randomly. Subsequent unit of investigation was every 10th residential building in each ward. Therefore, a total of 196 households were selected for questionnaire administration. Information elicited included the following: socio-economic characteristic of the respondents, factors that responsible for poor urban environmental health. Data collected were analyzed using Statistical Package for the Social Sciences version 23. Also, descriptive (tables, pictures, cross tabulation) were used to analyze the data collected.

5. Findings and Discussions

Socio-Economic Characteristics of the Respondents'

Findings revealed that 36.7 % of respondents in high density were within 31-40 years of age bracket; in medium density 39.1 % of the respondents' falls within 41-50 years while in low density, 34.8 % of respondents were within 41-50 years of age.

Findings established that 30.6 % of respondents in high density had only secondary school education; in medium density, 56.3 % of the respondents were graduates of tertiary institutions

while in low density, 78.3 % of respondents attended tertiary institutions. It was revealed that there was a significant association between the densities and the educational attainment of residents, there is every tendency to believe that a well-educated person may perceive and take good care his immediate environment differently from a less fellow.

Findings showed that 65.3 % of respondents in high density earned between 20,001 to 50,000; in medium density, 37.5 % of the respondents earned between 150,000 to 200,000 while in low density, 34.8 % of respondents earned between 200,001 and above. There is the tendency that respondents' with higher income may live better and ensure sustainability of the environment and also afford a good accommodation whereas, respondents' with lower income may not be able to, due to financial constraint (Table 1).

Table 1. Socio-Economic Characteristics of the Respondents'

Socio-Economic			
Respondents' Age			
	High	Medium	Low
Less than 20	9 (12.0 %)	4 (6.3 %)	0 (0.0 %)
21-30	18 (24.0 %)	9 (14.1 %)	6 (13.0 %)
31-40	26 (36.7 %)	14 (21.9 %)	12 (26.1 %)
41-50	7 (9.3 %)	25(39.1 %)	16(34.8 %)
51-60	5 (6.7 %)	12(18.8 %)	8(17.4 %)
60 and above	10 (13.3 %)	0(0 %)	4(8.7 %)
Total	75 (100.0 %)	64 (100.0 %)	46 (100.0 %)
Educational Attainment			
No Education	19 (25.3 %)	7 (10.9 %)	0 (0 %)
Primary	21 (28 %)	13 (20.3 %)	10 (21.7 %)
Secondary	23 (30.6 %)	8 (12.5 %)	0 (0 %)
Tertiary	12 (16.0 %)	36 (56.3 %)	36 (78.3 %)
Total	75 (100.0 %)	64 (100.0 %)	46 (100.0%)
Respondents' Income			
Less than 20,000	16 (21.3 %)	0 (0 %)	0 (0%)
20,001-50,000	49 (65.3 %)	10 (15.6 %)	0 (0 %)
50,001-100,000	10 (13.3 %)	18 (28.1 %)	6 (13.0 %)
100,001-150,000	0 (0 %)	24 (37.5 %)	10 (21.7 %)
150,001-200,000	0 (0 %)	12 (18.8 %)	14 (30.4 %)
200,001 and above	0 (0 %)	0 (0 %)	16 (34.8 %)
Total	75 (100.0 %)	64 (100.0 %)	46 (100.0 %)

Source: Yoade (2017)

Factors Responsible For Poor Urban Environmental Health

This section analyses and interprets data collected on the factors responsible for poor urban environmental health in the study area, with respect to the following; poverty and unemployment, lack of health facilities, inadequate sanitation, pollution, exposure to hazard sites among others.

Findings showed that in the high density area, low government intervention had the highest percentage with 18.66 %; next is poverty and unemployment (18.16 %); lack of health facilities (13.93 %); inadequate waste disposal (13.43 %); poor quality and overcrowded housing with (10.20 %); pollution (7.21 %); violation of planning rules (6.72 %); inadequate sanitation (5.47 %); exposure to hazard sites (4.23 %) and lack of safe drinking water (1.99 %) is the lowest in hierarchy.

Findings established that in the medium density area, low government intervention had the highest percentage (17.88 %); next is violation of planning rules (17.60 %); poverty and unemployment (16.76 %); inadequate waste disposal (12.57 %); lack of health facilities (12.01 %);

poor quality and overcrowded housing (9.78 %), exposure to hazard sites (6.15 %), inadequate sanitation (2.79 %); pollution with (2.79 %) and lack of safe drinking water (2.51 %) is the lowest in hierarchy.

Findings established that in the low density area, low government intervention had the highest percentage with 45.54 %; poor quality and overcrowded housing (19.80 %); inadequate waste disposal (10.89 %); poverty and unemployment (9.90 %); exposure to hazard sites (7.92 %); safe drinking water (3.96 %) and inadequate sanitation (1.98 %) (Table 2).

Table 2. Factors Responsible For Poor Urban Environmental Health

Factors	High Density			Medium Density			Low Density		
	Yes	Percentage %	Rank	Yes	Percentage %	Rank	Yes	Percentage %	Rank
F1	73	18.16 %	2	60	16.76 %	3	10	9.90 %	4
F2	56	13.93 %	3	43	12.01 %	5	0	0 %	8
F3	22	5.47 %	8	10	2.79 %	8	2	1.98 %	7
F4	54	13.43 %	4	45	12.57 %	4	11	10.89 %	3
F5	29	7.21 %	6	10	2.79 %	8	0	0 %	8
F6	8	1.99 %	10	9	2.51 %	9	4	3.96 %	6
F7	17	4.23 %	9	22	6.15 %	7	8	7.92 %	5
F8	41	10.20 %	5	35	9.78 %	6	0	0 %	8
F9	27	6.72 %	7	63	17.60 %	2	20	19.80 %	2
F10	75	18.66 %	1	64	17.88 %	1	46	45.54 %	1
Total	**402**	**100.0 %**		**358**	**100.0%**		**101**	**100.0%**	

Source: Field Survey, 2017
Note: *F* is variable used to represent each factor.
F1= Poverty and unemployment, F2= Lack of health facilities
F3= Inadequate sanitation, F4= Inadequate waste disposal
F5= Pollution, F6= Lack of safe drinking water
F7= Exposure to hazards sites, F8= Poor quality and overcrowded housing
F9= Violation of planning rules, F10= Low government intervention

6. Conclusion and Implication of Study for Policy Formulation

Generally, poverty tends to breed poor environmental and unhygienic conditions that have great impact on human health. This is because the poor are incapable of paying for the required amenities for a healthy living, most especially, quality housing thus they become vulnerable to health hazards. To avert this situation and ensure good environmental standard, the ongoing national policy of sustainable minimum wage should be extended to all and sundry. Besides, public enlightenment and environmental education would be necessary to keep the people well informed about the importance of healthy and hygienic environment.

There is only one choice to make and that is preservation and proper management of our environment in such a way that it can be useful for the future generation. It is often said that health is wealth. The most promising area where the greatest impact can be made in combating the disease burden in our environments and ensure a stable healthier and longer lifespan for people surely lies on investment in environmental sanitation, good housing condition and sound health. Adequate plans should be made therefore to involve stakeholders, individuals and government to redeeming the image of deplorable parts of our cities and rescue the lives of the poor residents.

This study has identified environmental health factors experienced by the residents of the three residential density communities, the high-density communities as epitomized in a residential core area of Ondo. However, the followings are some of the conclusions drawn from the findings. The first to be considered is the need for quality housing and hygienic environment. To achieve this, extensive redevelopment and upgrading programmes through the provision of urban basic services are essential in the area priority should be given to provision of more portable water, disposal facilities, and proper maintenance of drainages. Sanitary inspections

showed are regularly carried out on provision of household facilities with the enforcement of environmental sanitary laws. Adequate funding should be given to Waste Management Authority for effective service as well as improved health facilities in the Area.

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