

Sanitary Status of Urban Settlement: Implication for Tropical Diseases Control in Nigeria

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Abstract: Rural – Urban migration has been on the increase in Nigeria due to lack of social amenities in the rural areas and the quest for white collar jobs by the teeming youths of employment age. This situation led to the increase in population in the urban and semi – urban areas, consequently these areas are being over populated and the attendant's effect of insufficient social amenities resulted in poor sanitary condition of the area. The poor sanitary condition of urban areas in Nigeria pose a lot of set back to the control of tropical disease such as malaria, diarrhea, cholera and Ascaris infections. This write up x-ray the sanitary status of Nigeria and its implication on tropical disease control in the present age. The article will sensitize individuals, urban dwellers, landlord, voluntary organizations and the various tiers of government to intensify efforts towards improving the sanitary status of our environment.

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1. Introduction

The environment is the natural world in which people, animals and plants live. It also includes the conditions that affect our behaviour and development. According to Udeme (2010) efforts have been made by various organizations such as Nigerian Environmental Study and Action Team (NESAT), the World Bank, United Nations Environment Program (UNEP), the ministry of environment, Nigerian Environmental Society and the Environmental Health Officers Association of Nigeria (EHOAN) to improve the conditions that affect behaviour and development.

In the light of the large number of people in the developing world who do not have access to adequate sanitation, drainage and waste disposal services, it is obvious that the approaches used in the past to address the environmental sanitation problems in developing countries have been failing a large proportion of humanity despite considerable efforts and investments made over the years. One of the objectives of Millennium Development Goals is aimed at reducing by half the proportion of people without sustainable access to safe drinking water and basic sanitation, and to achieve significant improvement in the lives of 100 million slum dwellers by 2015 (www.developmentgoals.org/environment.htm). Lack of adequate sanitation services does not only affect millions of people depriving them from living in a healthy environment, but also leads to contamination of the fresh water sources and spread of communicable diseases. DFID (1998) uses the term environmental sanitation to cover the wide

concept of controlling all the factors in the physical environment which may have an impact on human health and well being. Environmental sanitation in the developing countries includes drainages, solid waste management, and vector control in addition to activities covered by sanitation. Environmental sanitation is now being replaced by the term environmental health and its objective is to create and maintain conditions in the environment that will promote good health and prevent diseases. Thus environmental sanitation exercise is designed to ensure a sanitized environment, devoid of diseases and at the same time improving the health care system and social welfare. Despite the tremendous effort by different government in keeping the environment clean, of the populace is a far cry.

The state of urban sanitation differs from one country to another due to the manner each country regards the health of its citizens and the vision it has regarding its general development. At least 2.4 billion people do not have access to adequate sanitation (WHO, UNICEF, WASSCC, 2000). Less than 50% of municipal solid wastes are collected (World Resources Institute, 1996), yet the onset of rainfall in most areas leads to flood and people are displaced from their homes due to poor management of the drainage system. The issue is not whether urban dwellers have provision for sanitation at all, but whether they have a quality provision for all members of the household which is affordable and which eliminates their contact with human excreta and other waste water within the home and the neighborhood UN-HABITAT (2003) estimated the

number of people without adequate provision of sanitation based on the following criteria:

- (i) Good quality provision in the home (e.g. toilets), the immediate surrounding (e.g. connection of a sewer or to a pit or septic tank that does not contaminate the ground water or other peoples water) and the neighborhood (provision to ensure no human contact with excreta and to make sure that waste water is removed safely).
- (ii) Accessible for all (close enough for children to use, accessible at night with public lighting, not dangerous for women/girls).
- (iii) For and cleaning, hand washing and maintenance.
- (iv) Functions properly even during periods of high rainfall.

Taking all these into consideration, the present and even more the future challenge in urban environmental sanitation in Nigeria is certainly as big as in rural areas.

2. Current Sanitary Status in Nigeria.

Access to sanitation varies widely in Nigeria, with estimates ranging from as low as 15% in some areas and higher than 80% in others. Estimates show that less than half the Nigerian population has access to improved sanitation facilities. Institutional sanitation is also low, particularly schools. On the average there is only one toilet for every 200 students in schools as against the allowed standard of one for every 50 students (Udemé, 2010).

Babanyara, Usman and Saleh (2010) pointed out that sanitary facilities like servers, sewage treatment facilities, septic tanks and toilets for homes are known to be grossly inadequate in Nigeria. Indeed, disposal of wastes is perhaps the most serious environmental problems in Nigeria cities. The increasing accumulation of refuse in cities promotes disease conditions. The health hazards posed by rain water mixing with waste and percolating through porous soil are enormous, ultimately contaminating soil water which from the prime source of drinking water for most cities. The conduct of monthly sanitation is a way of getting people to clean their immediate surroundings and these exposes the inefficiency of the federal, state and local government to use sanitation board in collecting and disposing waste generated by the populace. As a result of the poor participation in the monthly sanitation, huge amounts of uncollected refuse obstruct roads, constitute health hazards and increased the threat of epidemics in most Nigerian cities. Industrial wastes from textile plants, breweries, slaughter houses, sugar refineries, pulp and paper industries and petrochemicals are discharged into open drains, channels, streams and lagoons. These

wastes contaminate the soil ecosystem and render surface and underground water unfit for human, agricultural or recreational use.

Nigeria and many developing countries have no central collection and disposal system. Every home in the urban and semi-urban areas utilizes block lined private septic and soak-away pits for excreta and sewage disposal. The rural areas use unlined toilet pits with no provision for waste water. Even in the urban and semi-urban areas that use septic tank and soak-away pits or water systems, there is often a lack of water to run the system. Yet in the rural settings, approximately half of the population does not have even the pit toilet (Nwachukwu, 2008). The greatest danger lies in the evacuation and disposal of excreta and sewage from the septic tank and soak-away pits when they fill up. Private contractors are paid to do this along with the Environmental Sanitation Board Motorized trucks equipped with suction pumps are used to suck the waste into the tank. Other individuals who worked in groups as contractors do the evacuation manually, using buckets and hand pushed trucks. The work is done during the day when the house is free of residents. Additionally despite the serious air pollution and health concerns, the only sanitizer used is kerosene. After the evacuation, the contractors dispose the waste at any site convenient to them, including ditches, ravens, unreclaimed burrow pits and in isolated bush or forest areas. As a result, the disposed wastes are washed back to nearby streams by the next rain. In Nigeria, roughly 40% of the population does not have access to any form of toilet. Their toilet is the bush or forest areas. There is increasing surface and ground water pollution, especially in areas where ground water table is close to the surface or coincides with weathering dept(Nwachukwu,2008).

UNDP (2004) reported that about 40% of Nigerian population does not have access to portable drinking water and 41% also have no access to good sanitation to a large extent poor environmental sanitation in Nigeria is blamed on bad leadership who forget that cleanliness is next to godliness.

2.1 Consequences of Poor Sanitary Status on the Control of Tropical Diseases in Nigeria

Poor sanitary conditions of our environment provide a good breeding ground for disease causing organisms (pathogens). This situation leads to the spread of disease especially in tropical areas like Nigeria. Some of the tropical diseases that have become difficult to control due to filthy conditions of our environment are malaria, cholera, diarrhea, and ascaris.

Malaria is a mosquito-borne infectious disease caused by protozoa of the genus plasmodium. It is

wide spread in tropical and sub tropical regions including parts of America, Asia and Africa (Ojewale, 2010) each year, there are approximately 350 – 500 million cases of malaria killing between one to three million people, the majority of whom are young children in sub – Saharan Africa (Wikipedia, 2010). The Nigerian situation is even more precarious. Malaria is the highest killer disease in Nigeria according to UNICEF. Annually, Nigeria loses some 300, 000 children to malaria. It is also estimated that half of the adult population suffer from at least one episode of malaria annually. For children under the age of 5 years, many suffer from malaria three to four times a year. The malaria fever episode in Nigeria is worsened by the filthy nature of the environment in which many Nigerian citizens live, that create breeding grounds such as stagnant water heaps of debris and wild grass for mosquito to thrive. Another condition which encourages breeding and infestation of mosquitoes, the vector of malaria parasite, is accumulation of waste water in our environment. Waste water is the combination of liquid or water- carried wastes removed from residences, institutions and commercial and industrial establishment.

Wikipedia (2010) maintained that diarrhoea is a condition of frequent watery bowel movement it causes dehydration which kills approximately 2.2 million children every year. Diarrhea is the passage of watery stool, a debilitating condition that can significantly affect quality of life is the passing of increased amounts (more than 300g in 24 hours) of loose stools. Diarrhea can be prevented by pursuing multi sectoral efforts by: Improving access to clean water and safe sanitation promoting hygiene education, using latrines, keeping food and water clean, washing hands with soap before touching food and by sanitary disposal of stools. The key factors are unclean water; it is the responsibility of government to support the community in tackling these basic problems. Improved H2O supply reduces diarrhea morbidity by 6% to 25%. Improved sanitation reduces diarrhea morbidity by 32%, improvements in drinking-water quality through household water treatment such chlorination can lead to reduction of diarrhea.

2.2 Cholera is an infection of the small intestine caused by the bacterium, *vibrio cholerae*. The symptoms of cholera are profuse watery diarrhoea, vomiting and abdominal pain. Transmission of cholera is primarily through contaminated drinking water or food. The severity of cholera can lead to dehydration and electrolyte imbalance.

Wikipedia (2010) maintained that cholera is one of the major causes of death in the world. It was one

of the earliest infections to be studied by epidemiological method. The primary symptoms of cholera are profuse diarrhea, dehydration, abdominal pain and fever. A person recently infected with cholera may not have these symptoms. Since the symptom manifest after some days, the symptoms of cholera start 1-5 days after infection as a result of toxin produced by *vibrio cholerae* bacterium that compels profuse amount of fluids from the blood supply into the small and large intestine. An untreated cholera patient may produce around 10 litres of diarrhea fluids a day. Primary treatment of cholera is done with oral or intravenous dehydration solutions. Antibiotic may be beneficial and in certain cases they are used for treatment.

3. ASCARIASIS

Ascariasis is the infestation of human intestine with *A. lumbricoides*. One specie, *Ascaris suum* typically infest pig while another, *Ascaris lumbricoides* affect human population typically in subtropical and tropical areas with poor sanitation. Sanglas et al (2008) pointed out that *Ascaris lumbricoides* is the largest intestinal worm and the most common helminthes infection of humans worldwide, an infection known as Ascariasis can cause morbidity and sometimes death by compromising nutritional status, affecting cognitive process, inducing tissue reactions such as granuloma and provoking intestinal obstruction or rectal prolapse. The symptoms of *Ascaris* infection are as follows: bloody sputum, cough, low grade fever, vomiting worm, passing of worm in stools, gall stone formation, liver abscesses, pancreatic and pulmonary eosinophilia. *Ascaris lumbricoides* causes haemorrhage, inflammation and bacterial infection in the lung. It also causes allergy in areas with seasonal transmission. Typically the symptoms start manifesting 6-14 days after initial exposure. At the intestinal phase it causes malnourishment, intestinal blockage, and verminous intoxication. Infections with *Ascaris lumbricoides* are easily treated with a number of anti helminthic drugs such as Piranthel, Mebendazole, Levamisole, and albendazole. The drugs attack the absorbing cells of the worm and prevent the worm from absorbing sugar in the small intestine which is essential for its survival. Improvement in sanitation helps in reducing the incidence of *Ascaris* infection.

4. Recommendations

The sanitary condition of any environment is a joint venture by the government and the public which will go along way in improving the quality of life of the entire citizen and on this premise, the following recommendations may be helpful in improving the sanitary conditions of our environment especially in

urban settlement where the population of people has been on the increase. These are:

- (i) Town planners should categorize the different parts of urban areas into residential, commercial and industrial areas right from the onset so that refuse and waste collections will be easily handled.
- (ii) Urban development board of each state should issue building plans to plot owners and ensure that they build according to specification. This will enable the houses to have necessary sanitary facilities.
- (iii) Refuse collection centers should be created at strategic locations in the urban areas and authorities involved in evacuation of such waste should do it diligently.
- (iv) Safe drinking water should be provided for all urban residents by the government. Supplementary effort to provide safe drinking water can be provided by well to do individuals by sinking bore holes which will provide opportunity for easy access to water.
- (v) Government should intensify efforts in instilling sanitary consciousness in the populace just as it is done through monthly environmental sanitation. Sanitary officers should in turn embark on house to house inspection to ensure that the sanitary facilities are in good working condition.

5. Conclusion

The world health organization (WHO) defines health as the state of social, mental and economic well being. In order to achieve this status so that our lives can be preserved, it becomes necessary that we should be conscious of the cleanliness of our body and environment. The physical environment can be made habitable or inhabitable by the level of sanitation which we maintain. Health is wealth as such we should guide our health jealously. This can be done through improved sanitation habit.

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