

Review

Environmental and Health Implications of Poor Sanitation in Nigeria

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Abstract

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The study investigated poor sanitation and its effects in Nigeria as the country is heavily plagued with the burden of open defecation. Communities are put at greater risk of infection when sources of drinking water are polluted with human faecal matter, untreated water, sludge etc. Also, the environment can be negatively impacted on especially when coastal areas are bombarded with direct defecation and discharge of sewage thereby disrupting normal ecosystem functions especially of the marine world. It is therefore recommended that all house owners should provide adequate sanitation facilities in their houses and new building plan should not be approved by the regulatory agency of the government unless there is provision for sanitation facility in it. i.e. strict enforcement of building standards. It is also recommended that government at all levels should provide public toilets in order to eliminate the menace of open defecation and should also promote public enlightenment on the dangers of poor sanitation.

Keywords: Health, Defecation, Environment

INTRODUCTION

Safe sanitation is one of the foundations of a healthy, comfortable and dignified life but the reality for billions of people especially in Africa and Nigeria in particular is one of polluted environments, in which one or many of the links in the chain that makes up safe sanitation – toilets, waste treatment, disposal and safe re-use – is missing or out-of-reach (United Nations Children's Fund and World Health Organization, 2020). Poor sanitation refers to a situation when there is lack of or insufficient provision of adequate or improved facilities and services for safe disposal of human wastes such as faeces, urine and menstrual waste.

One of the basic needs of human beings is shelter and this need must be able to guarantee them the opportunity to relieve themselves with dignity and without engaging in open defecation. Nigeria is one of the countries of the world where a large number of people practice open defecation. According to a report by (National Bureau of Statistics, 2019), only 9% of the population has access to basic water, sanitation and hygiene services, 44% use

basic sanitation services, average per capita volume of water per day for the rural population is 9 litres while about 46 million people practice open defecation. The number of improved sanitation facilities per population has been declining in the last two decades (United Nations Children's Fund and World Health Organization, 2015). The burgeoning human population in the country and inadequate planning coupled with high unemployment rate estimated at over 30% as at May of 2021 alongside extreme poverty level especially among the rural populace and urban slum dwellers are among notable factors responsible for the increasing rate of open defecation.

Open defecation is the inappropriate disposal of human faeces in gutters, bushes, water bodies, open spaces etc. According to (World Health Organization, 2019), 2.0 billion people still do not have basic sanitation facilities such as toilets or latrines and out of these, 673 million still defecate in the open, for example in street gutters, behind bushes or into open bodies of water.

Faecal matter from people that are infected with one disease or the other can contaminate water, soil, crops, food etc. thereby increasing the spread of diseases or risk of infection to other people. Open defecation promotes the survival of disease vectors and aids in their transmission of diseases. As a matter of fact, open defecation is linked to diseases such as cholera, diarrhoea, etc. and there are other effects such as loss of dignity, insecurity World Health Organization (2019) reported that poor sanitation is linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio and exacerbates stunting.

In most rural areas in Nigeria where there is high level of poverty and little or no compliance to proper building regulations, houses are built without toilet facility and because most people in these areas cannot afford decent housing, they have no choice but to go for some of these sub-standard and cheap accommodations. This type of residence contributes in no small measure to environmental pollution as residents of these houses practice open defecation in gutters, open spaces, bushes where they can be bitten by snakes or contract terrible diseases. One of the most vulnerable groups in the society to the ills of open defecation is children. Children face serious health consequences when they defecate at refuse dump where they can be infected with life threatening diseases. Open defecation remains a public health concern in Nigeria. The consequences of open defecation are many and one of such is the issue of sexual harassment that can result from it when women and girls relieve themselves in bushes. This is quite a shameful thing for a lot of people who have no other means of relieving themselves. Sanitation is a private affair but the negative effects that can result from lack of access can become a public nuisance if not handled properly.

Consequences of Poor Sanitation

Health Implications of Poor Sanitation

Poor sanitation can lead to a range of negative health impacts such as diarrhoeal diseases, antimicrobial resistance, stunted growth etc.

Diarrheal diseases

One of the adverse health implications of open defecation (OD) is infectious excreta-related intestinal disease, of which diarrheal diseases (DD) are the most common. Cholera outbreak will continue in hotspots with poor sanitation and precious funds will be spent on WASH (water, sanitation and hygiene) for outbreak response that could be more sustainably spent on sanitation to fix

the underlying cause (United Nations Children's Fund and World Health Organization, 2020). According to (Nigeria Centre for Disease Control, 2021), between the 1st of January and 1st of August 2021, there have been 31,425 suspected cases of cholera, 311 confirmed cases and 816 deaths have been reported from 22 states and the Federal Capital Territory (FCT) of Nigeria. The affected states are Benue, Delta, Zamfara, Gombe, Bayelsa, Kogi, Sokoto, Bauchi, Kano, Kaduna, Plateau, Kebbi, Cross River, Niger, Nasarawa, Jigawa, Yobe, Kwara, Enugu, Adamawa, Katsina, Borno and the FCT. DD were the third cause of death in children under five years of age (U5) in 2015 in low-income and lower-middle-income countries (LICs and LMICs), resulting in 499,000 deaths (8.6% of all U5-deaths), and a disability-adjusted life year (DALY) loss of 45.1 million years (8.5% of total U5-DALY losses) (Institute for Health Metrics and Evaluation, 2016). The burden of U5-disease in LICs and LMICs in 2015 as a result of no hand-washing-with-soap was a DALY loss of 26.4 million years (5.7% of total U5-DALY losses); the corresponding figure for unsafe sanitation was a DALY loss of 26.6 million years (5.7% of total U5-DALY losses) (Institute for Health Metrics and Evaluation, 2016).

Antimicrobial resistance (AMR)

This is a serious health risk. Antimicrobial resistance is increasing the risk of preventable infections that are treated with antibiotics and by spreading excreted resistant organisms in the environment through untreated wastewater and sludge (Mills et al., 2017). According to (United Nations Children's Fund and World Health Organization, 2020), hundreds of millions of doses of antimicrobials will be used each year for infections that could have been prevented with better sanitation and wastewater laden with resistant bacteria will continue to spread AMR.

Stunted growth

This affects almost one quarter of children under five years of age globally through several mechanisms, including repeated diarrhoea, helminth infections and environmental enteric dysfunction related to unsanitary conditions, and leads to poor physical and cognitive development [World Health Organization (WHO), Food and Agriculture Organization (FAO) and World Health Organization for Animal Health (OIE), (2020)]. Infected human excreta contain several harmful organisms that are associated with a number of health problems (Saleem et al., 2019). Virtually, one gram of infected human excreta can contain a variety of microbes which includes 106 pathogenic viruses and infectious virions, 106–108 bacterial pathogens, 103 protozoan cysts and

10–104 helminth eggs (Feachem et al., 1983).

Mental health issue and increasing rate of diseases

Without sanitation at home, schools and workplaces, people, especially women and girls will continue to suffer from anxiety, shame and fear while trying to find a safe place to urinate, defecate and manage menstrual hygiene (United Nations Children’s Fund and World Health Organization, 2020). Workers in the informal sector are even more vulnerable to different diseases and indignity as a result of poor sanitation resulting from poor working conditions.

Polio re-emergence

United Nations Children’s Fund and World Health Organization (2020) has warned that the global goal of polio eradication may not be achieved due to poor sanitation. Nigeria, for instance, has suffered several setbacks in her bid to eradicate the disease.

Gender-specific health risks

According to (United Nations Children’s Fund and World Health Organization, 2020), poor sanitation increases health risks that are specific to women. For instance, women who suffer from worm infections and other diseases may become anaemic and undernourished, increasing the risk of maternal death. Women who lack sanitation may resort to harmful coping mechanisms, such as delayed urination or reduced water intake, resulting in urinary tract infections, which can in turn lead to increased risk of pre-eclampsia, miscarriage and anaemia (United Nations Children’s Fund and World Health Organization, 2020). Workplaces that do not have adequate sanitation facilities can dissuade women from seeking employment, further reinforcing lower labour participation by women and their reduced access to resources (United Nations Children’s Fund and World Health Organization, 2020). Similarly, lack of public toilets reduces women’s mobility and participation in public life and the economy (United Nations Children’s Fund and World Health Organization, 2020).

Environmental Effects of Poor Sanitation

Adverse environmental impacts of poor sanitation include global warming, environmental degradation and disruption of normal ecosystem functions as explained below:

Global warming

OD could cause global warming due to the release of methane from faecal matter into the atmosphere (El Fadel and Massoud, 2001; World Health Organization, 2010). This can raise temperature level and could worsen air pollution causing respiratory infections and other diseases (Natural Resources Defense Council, 2016).

Environmental degradation

Poor sanitation contributes to environmental degradation especially in coastal areas. Degradation of the coastal environment, such as beaches and coral reefs, contributes to reduced tourist numbers and revenues and disease risks due to bio-accumulation of pathogens (Asian Development Bank, 2014). Coastal environmental degradation leads to a decrease in fisheries productivity and thereby affects large and small scale fishing. Improperly disposed human waste is a major polluter of soil and water bodies. Major sources of water for drinking become infected with microbes such as *Escherichia coli* especially for those in the rural area who lack access to safe drinking water.

Disruption of normal ecosystem functions

The discharge of untreated sewage; leakage from septic tanks, as well as direct defecation; contribute to increased bacterial and chemical pollution of coastal waters; high nutrient accumulation associated with the breakdown in human and animal wastes disrupts normal ecosystems functions (Asian Development Bank, 2014). Excessive nutrient level can also lead to eutrophication.

Economic Cost of Poor Sanitation

In terms of cost, open defecation is a huge financial burden to the country that has the highest number of extremely poor people in the world and is facing huge economic challenges such as high food inflation, high unemployment rate, stagflation etc. Open defecation costs Nigeria US\$1 billion per year and eradicating it will require less than 6.5 million latrines to be constructed and put to good use (Maina and Sittoni, 2012; Water Aid, 2019) estimated that poor sanitation costs the country at least three billion U.S. dollars (US\$3 billion) each year in lost productivity and health care expenditures. The cost of access can be a significant barrier to water, sanitation and hygiene (WASH) services, whether it is a monthly water bill, an investment in water or sanitation infrastructure or regular spending on hygiene products (United Nations Children’s Fund (UNICEF) and World

Health Organization, 2021). The costs of poor sanitation are unevenly distributed with the highest economic burden falling disproportionately on the poorest; the poorest 20% of the population are 10 times more likely to practice open defecation than the wealthiest 20% of the population and for the poorest therefore, poverty is a double edged sword, not only are they more likely to have poor sanitation but they have to pay proportionately more for the negative effects it has (Maina and Sittoni, 2012). Diseases linked to poor sanitation hold infected people backward and prevent them from being economically active thereby affecting the country's economic growth and development. The annual global economic losses associated with inadequate water supply and sanitation are estimated to be US\$260 billion (World Health Organization, 2012).

CONCLUSION

Negative health and environmental impacts originate from lack of access to and unavailability of safe sanitation facilities and services. Lack of access to safe sanitation at homes, schools, work places (both formal and informal), markets, medical centres, internally displaced people's camps, public places etc. will continue to endanger not only lives but also the environment (both built and natural). Burden of disease due to poor sanitation also leads to loss of productivity as infected people are not healthy enough to contribute productively to the economy. Without quality or improved toilet for everyone (irrespective of social standing or status, religious or political affiliation, gender, ethnicity or tribe), societies will continue to be at risks of diseases and infections and the environment too will not be spared. It is therefore recommended that all house owners should provide adequate sanitation facilities in their houses and new building plan should not be approved by the regulatory agency of the government unless there is provision for sanitation facility in it. i.e. strict enforcement of building regulation. It is also recommended that government at all levels should provide public toilets in order to eliminate the menace of open defecation. Also, those that have shops, super stores, petrol stations, restaurants with toilet facility should make them available to the public in order to stem the tide of public urination and defecation.

Competing Interests: There are no competing interests.

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