



Adverse Effects of Inadequate Water Supply on Human Health: A Case Study of Kajola Local Government in Oyo State, Nigeria

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ABSTRACT

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Effects of lack of good water supply on the health of the inhabitants of Kajola Local Government Area of Oyo State in Nigeria were investigated. Various forms of water-borne diseases such as typhoid fever, diarrhea, paratyphoid fever, bacillary dysentery were recorded during the three-week period of study in the community. Typhoid fever cases recorded was 72 (26.6%) in Area A while there were 55 (22.9%) of the same disease in Area B. Diarrhea represented 65 (24%) occurrence in Area A, while it was 66 (27.5%) in the Area B. Bacillary Dysentery was very common 84 (31%) among the children in area A while it was 29 (25.9%) in area B. Para-typhoid fever recorded 45 (16.6%) of disease endemic in area A and 65 (27.1%) in area B. The main sources of portable water supply in the community are hand-dug wells and hand-pump boreholes, the number of which is not enough to service the whole community residents' water needs. Hence, the portable water shortage has made the less privileged residents to resort to the use of other water sources, like streams, pools and rivers, which has inflicted a negative implication on their health as water-borne diseases were observed to be rampant in the community.

Keywords:

health management, rural settlements, solid waste, water supply

INTRODUCTION

Water is an indispensable resource for the world economy as well as a precondition for human, animal and plant life, as there can be no stability of health and well-being without safe and adequate water supply (Wilson, 1998). Water is not only a vital environmental factor to all forms of life, but it has a great role to play in socio-economic development for human population. The problem of potable water shortage has become a serious matter in the world from a local to a global perspective and has commanded a dramatic attention. 80 countries of the world now have water shortage and this is reflecting through their health and economies, while 40% of the World (more than 2 billion people) has no access to clean water or sanitation in the context (World Bank, 1996). According to WHO (1990), less than 50% of the world's population has access to satisfactory water supply. This unhappy situation led the United Nation Assembly to declare year 1981-1990 a decade of international drinking-water supply and sanitation. This was geared towards the provision of clean drinking water for all by year 1990.

But today, the most important aspect of water shortage stems from water pollution, which is always created by human activities majorly through farming and agriculture (Olokesusi, 2004). This comprises bush burning, use of fertilizer and pesticides, herbicides, fungicides and others which cause soil runoff into surface water and leaching into aquifers. In this way such chemicals percolate into the water-table and thereby make water unfit for drinking. Industrial wastes are also discharged into the nearest waterway or into wastewater lagoon thereby reducing the level of the water dissolved oxygen (DO) (Fafioye and John-Dewole O.O., 2012a). Without sufficient oxygen, fish and other oxygen-consuming forms of aquatic life soon die. Another form of water pollution is organic wastes and chemicals such as oil, gasoline, detergent, and many other soluble and insoluble chemicals that threaten human health and harm fish and other aquatic life.

Similarly, the study area; Kajola Local Government Area of Oyo State, South-western of Nigeria, is suffering from inadequate water supply due to urbanization and landform (Olokesusi, 2002). Solid wastes such as refuse from household are being disposed off indiscriminately into the streams, drainages and open places; the liquid waste is also discharged into surface water. In the community, water from domestic sewages such as faeces, cassava waste-water and animal waste are the major causes of sickness and death each day (Akpala, 2006). The kind of water related diseases that are manifested in the area include: diarrhea, malaria (majorly), measles, typhoid fever, cholera, Shigellosis, polio, meningitis, hepatitis A&B dysentery and pneumonia (Fafioye, 2009); regrettably, infants,

children and people with weakened immune systems are the mostly affected (Oyesiku, 2009). The major uses of water in the community include; domestic, crop irrigation, fishing and farming. The domestic uses of water include drinking, cooking, personal hygiene, cleaning (washing of cutlery, crockery and cooking utensils, laundry and gardening). The source of water supply includes; rain and ground water, surface water from pond, waterholes, streams, rivers and lake. There are, as well, water from shallow wells which are readily accessible but usually polluted to varying degree, as they are easily contaminated due the depth of the wells.

All these unhygienic water sources are contributory factors to diseases endemic in the community; this research therefore seeks to study the adverse effects of inadequate water supply as it affects the health of the people of Kajola Local Government in Oyo State, Nigeria.

MATERIALS AND METHODS

a. Research Methods

Three forms of research methods were used for data collection viz:

1. Self-reporting or participant direct-observation method to ensure that only firsthand information as observed and recorded by the researcher is used in data collection. This technique helps to reduce falsified information especially from respondents who could want to withhold some useful information.
2. Key-Informant Interview Method was used to receive information from waste management agents and residents.
3. Questionnaire-Interview was administered to collect data on the following:
 - (i) The commitment of the public and Local Government Area (L.G.A.) on solid waste management.
 - (ii) Readiness of the public to participate in and pay for solid waste management service.

b. Data Analysis Method

Data generated from direct-observation method were analyzed by the use of parametric statistical analysis, that is, correlation analysis. This is used to analyze the relationship between dependent and independent variables, and the relationship among independent variables. The observed independent variables include; the types, nature, storage methods and disposal methods of solid waste, while the dependent variables were the environmental problems associated with solid waste management.

Table 1: The main source of water supply in the area is hand pump/borehole

Remark	Frequency	Percentage (%)
Agree	46	57.5
Disagree	28	35.0
Strongly Agree	6	7.5
Strongly Disagree	0	0
Total	80	100

Table 1 shows the response of the residents to the use of hand pump/borehole as the major source of water supply. 57.5% of the respondents agree or prefer the use of hand pump/borehole as main source of water

supply while 35% get their water supply from other means. Very little percentage (7.5%) strongly prefers the use of hand-pumps, possibly because there is one in their compound or readily available.

Table 2: Residents are facing water shortage problem

Remark	Frequency	Percentage (%)
Agree	68	85
Disagree	8	10
Strongly Agree	4	5
Strongly Disagree	0	0
Total	80	100

Table 2 reflects response to water shortage in the community. 85% response to water shortage is really disturbing partly owing to the fact that the available boreholes cannot go round and people would have to

observe a long queue before they can get clean water. 10% disagreed possibly due to their access to the available boreholes. Meanwhile, 5% are really finding it unbearable to get good water supply.

Table 3: Shortage of water can implicate health

Remark	Frequency	Percentage (%)
Agree	28	35
Disagree	10	12.5
Strongly Agree	42	52.5
Strongly Disagree	0	0
Total	80	100

Table 3 depicts people's response to the negative effect that water shortage can have on their health. 35% attested to the fact that there is connection between water shortage and the populace's state of health, while

12.5% could not connect the level of the water shortage to any ill-health in the community. However, 52.5% claimed that water shortage is responsible for health cases reported in the community.

Table 4: Major diseases in the area are water-borne

Remark	Frequency	Percentage (%)
Agree	43	53.75
Disagree	14	17.5
Strongly Agree	8	10
Strongly Disagree	15	18.75
Total	80	100

Table 4 relates the nature of the community's health cases to water-borne diseases. 53.75% attested that the major diseases in the community are traceable to poor water supply. 17.5% could not connect the diseases to

poor water supply alone but due to some other issues. 10% responded that the diseases are actually water-borne, while 18.75% reported that diseases are not just water-borne.

Table 5: Causes of water shortage are landform and urbanization

Remark	Frequency	Percentage (%)
Agree	62	77.5
Disagree	0	0
Strongly Agree	18	22.5
Strongly Disagree	0	0
Total	80	100

Table 5 relates the cause of water shortage to landform and urbanization. 77.5% claimed that the water shortage is possibly due to landform and urbanization while the remaining 22.5% complained that the reason for water shortage in the community is basically due to the hilly

landform and emerging population due to urbanization. Residents of the hilly part of the community always find it difficult to get portable water, due to the high depth of water-table from the soil surface.

Table 6: Water-borne diseases are rampant in the study area

Remark	Frequency	Percentage (%)
Agree	12	15
Disagree	42	52.5
Strongly Agree	14	17.5
Strongly Disagree	12	15
Total	80	100

Table 6 seeks to find how serious the water shortage is. 15% complained about the water shortage as being on the high side. 52.5% believed they can still cope with the

water shortage, while 15% complained that the water shortage is unbearable.

Table 7: Major Water-borne Diseases Recorded in Healthcare Facilities within 3 Months

WATER-BORNE DISEASE	LOCATION OF HEALTH FACILITIES			
	LOCATION A		LOCATION B	
	FREQ	%	FREQ	%
Cholera	0	0	0	0
Guinea worm	0	0	0	0
Typhoid fever	72	26.6	55	22.9
Diarrhea	65	24	66	27.5
Bacillary dysentery	84	31	29	12.1
Para typhoid	45	16.6	65	27.1
Others	5	1.8	25	10.4
Total	271	100	240	100

Source - Data from Healthcare Facilities in Kajola Local Government.

DISCUSSION

The residents are facing the problem of water shortage, as the few hand-pump/borehole water supplies cannot go round the whole community. As a result, some of the community dwellers have resorted to unwholesome water supply which has been linked to the outbreak of various water-borne diseases (Oreyemi, 2001). The major disease reported the community is water-borne, although they are not yet rampant. The reason for the water shortage is basically due to urbanization and landform (Olokesusi, 2004); the community is becoming larger but the landform is hilly, hence the depth of waterbed is high and difficult to reach by the local well-diggers who are still using primitive tools and manual labour to do their jobs (DFID, 2004 and Oyesiku, 2009).

The study revealed that the lack of sanitation facilities at the home base and community level is another contributory factor which exposes the people to water-borne diseases, such as cholera, typhoid, dysentery and gastroenteritis. Similar studies have shown that these diseases are more rampant among the rural communities, particularly in the younger generation, than the adult population and that lack of sanitation facilities many a times in home front and the communities can lead to the spread of communicable disease that are water related (Fafioye, 2009).

The study carried in the community revealed that toilet and other sanitation facilities including Health Facilities are not properly distributed at house-hold level and communities at large. That is why every-individual is looking for any alternative to dispose of their wastes and

refuses into open land and water bodies (Fafioye and John-Dewole O.O., 2012b). In related studies, it has been suggested that preventive approach to communicable diseases is far better than curative approach as this allows both government and the people living in any community to provide essential health and sanitation facilities for the prevention and control of communicable diseases more importantly water and sanitation-related diseases (Obemeata et al., 2000). The survey carried out also revealed that due attention has not been given to provision of adequate Health Facilities - such as hospital, basic health providers, sick bays and potable water/safe water supply. In another vein, most wells dug by the household are not sanitary or well-protected, as they are not having proper depth which could prevent seepage of sewage waste into the wells.

The Local Government has not given more attention to the provision of safe water supply and more importantly the collection storage and disposal of domestic or municipal wastes (Areola and Akintola, 2009). Even though previous work of other researchers revealed that enough funds has not been given to the Local Government of essential duties meant for such level of Government in Nigeria (Ajayi, 2008). Hygiene/Sanitary Education and Promotion at the Local Government level (LGA studies) would have gone a long way to sensitize these rural dwellers as to how to handle their wastes and take care of their environment so as to prevent the attended water-borne diseases which stem from poor hygiene. Khan (1997) reported that in Karachi Pakistan for example, a study found that poor people living in area without any sanitation or hygiene education spent six times more on medical care than people who lived in areas with access to sanitation and who had basic knowledge of household hygiene.

REFERENCES

- Ajayi F.F. (2008): Solid Waste Management Problems and its Implication on Health, Environmental Management in Nigeria. Vol. 11(3), pp. 34 -36.
- Akpala, C. O. (2006): Health Implications of Poor Urban Planning in South-Eastern Nigeria; Journal of Environmental Research & Managements. 3(4): 46 – 51.
- Areola, O. and F. Akintola, (2009): “Domestic Water Consumption in Urban Areas: A Case Study in Ibadan City, Nigeria”. Water Supply and Management Vol. 3(5) pp. 022 – 026.
- Department for International Development (DFID) (2004) “Rural water Supply in Africa; Building Blocks for Hand pump Sustainability” Knowledge and Research, Issue 18 May pp. 71 – 82.
- Fafioye, O.O. (2009): Environmental Pollution & Health Management, College Press & Publishers Ltd., Nigeria. 1st Ed. pp. 43 – 52.
- Fafioye, O.O. and John-Dewole O.O. (2012a): Comparative Analysis of Effects of Inadequate Water Supply and Solid Waste Management on human health: a case study of two Local Government Areas in two States of Nigeria. Management Skills and Techniques, vol.3, pp. 60 – 71.
- Fafioye, O.O. and John-Dewole O.O. (2012b): Problem of Animal Wastes Disposal on the Environment; A case study of S and D farms, Odeda, Nigeria. E3 Journal of Environmental Research and Management Vol. 3(4). pp. 084-087.
- Khan K. B. (1997): Water Management in Africa and the Middle East– Challenges and Opportunities. J. International Development Research Council (IDRC), Canada, vol.9(12), pp. 220 – 224.
- Obemeata, W. J., Edwards, C. C., Ngoddy P. O., and Okpala, P. A. (2000): Local Government Participation in Solid Waste Management in South-Western Nigeria. African Journal of Environmental Studies, vol. 6. pp. 104 – 110.
- Olokesusi, F. (2002): Water Supply - Possible Constraints on Socio-Economic Development in Oyo State of Nigeria. J. Water SRT - Aqua, No. 5 pp. 268-273.
- Olokesusi, F. (2004): “An Assessment of Water-Supply Situation in ECOWAS Countries and the Policy Implications”. J. Water SRT-Aqua, Vol. 19(7), No. 3, pp. 152-160.
- Oreyemi, M.K. (2001): Ecological Sanitation of Water and Environmental Conservation Technology Option: The case of slums in Oyo State, Nigeria. J. African Environmental Issues. Vol. 3 pp. 12 -15.
- Oyesiku, O.O. (1999): Nigerian Environmental Issues; A Statistical Approach. Journal of Environmental Research, vol. 6(5). pp. 14 – 21.
- Wilson, F. J. (1998): Making Wastes Work; A Strategy for Sustainable Development. Int’l Journal of Environmental Science & Management. Vol. 6(8). 114 – 118.
- World Health Organization (1990): Strategy of Cholera Control, Proceedings of WHO Seminar on the Organisation of Cholera Control, Manila 6-9 October, (BD/Cholera/71.1, Geneva, 1990).
- World Bank, (1996): Nigeria; Poverty in the Midst of Plenty – The Challenge of Growth with Inclusion. Population and Human Resources Division, West Africa Department, World Bank, Washington, D.C.