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**Water and sanitation status of families in Ikorodu:
a peri-urban settlement in Lagos**

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In a rapidly developing city like Lagos, peri-urban communities are characterized by urban-rural drifts due to the heavy cost of shelter in central urban metropolis, leading to a clustered community in the suburban settlements. The paper investigates the water and sanitation status of families living in Ikorodu a peri-urban community of Lagos. Water source, domestic hygiene practices the incidences of water borne infections; the water storage behavior, number and type of latrines and distance to well, were considered in the research. A detailed household survey was undertaken among two hundred and eight families using structured questionnaire. The result showed that only 25% of the population has access to safe water through the public water system, with the rest of the population accessing water through the unprotected wells 48.1%, water tankers 16.3% and water hawkers 8.2%. The pit latrines and soak-away are located to the wells with 0-3m(24.5%), 4-6m(24.5%), 7-9m(27.4%) and >9m (18.8%). Diarrhea frequencies per month in the families range from 1-4 (41.3%), 5-8 (4.8%), 9-12(0.5%). The findings indicate that the water and sanitation facilities are inadequate. There is need for all stakeholders to ensure adequate provision of safe water and appropriate sanitation facilities to eliminate the frequency of diarrhea and other possible water borne infections if the Millennium Development Goals must be attained by 2015.

Introduction

The United Nations General Assembly set eight Millennium Development Goals (MDGs) in 2000. The actualization of the United Nations Millennium Development Goals (MDG) and its targets are the current global parameters for measuring development particularly in developing nations. The Goal 7 (Ensure Environmental Sustainability) and Target 10 (Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation) of the MDG revolves round water sanitation and hygiene. Two years later, in 2002, World Summit on Sustainable Development (WSSD) held in Johannesburg recognized the need for improvement in sanitation as an urgent priority. All participating nations at the summit agreed to pursue specific sanitation target in the Implementation Plan of WSSD. The major cause of morbidity and mortality has been water particularly in developing countries. Due to endemic water shortages in most peri-urban settlements in Africa, compromised sanitary behaviours become inevitable practices, more often contributing to undesirable health impacts. Safe storage and distribution of water supplies are critical factors that determine the extent to which many diseases are either contained or propagated in urban and peri-urban communities (Sutherst, 2004). Several studies have confirmed that water-related diseases not only remain a leading cause of morbidity and mortality worldwide, but that the spectrum of disease is expanding and the incidence of many water-related microbial diseases is increasing (WHO, 2001; Payment., 1991, 1997; Isaac-Renton et al., 1996). Peri-urban settlements are characterized by high population densities coupled with the apparent agglomeration of different social and economic activities in the face of inadequate infrastructure and poor services including poor water supply and appalling sanitation standards. Rapid population growth mainly due to the perpetual rural-urban migration expanding the size of urban cities thus leading to the rapid development of peri-urban communities; and the corresponding increase in economic activities has exerted enormous pressure on resources and infrastructure

in peri-urban settlements including water availability and supply (Serageldin, 1989). Water for consumption and domestic use is fetched in jerry cans from taps, wells and water tankers leading to undue exposures to microbial contamination. As Lagos attains the mega status, a peri-urban community like Ikorodu which is one of the fastest growing peri-urban communities in Lagos is recipient of the implications of a fast growing metropolis. It is realized that in order to set the sanitation target at the grassroots level, it is very important to know the present sanitary status of the people starting with the unit of the community-the family (Ahmed 2005, Howard, 1997). This is with the view to design an intervention strategy that may be applicable by the Local Government authorities that should be involved in all activities towards total sanitation if the Millennium Development Goal must be realizable.

Methodology

The study area

Ikorodu is one of the fastest developing suburban communities in Lagos State. Though an old town whose ancient face is fast giving rise to a modern one due to the rapid development of the town. Ikorodu Local Government is one of the twenty local governments in Lagos State. With an area approximately 161.954 square kilometers, it lies about 36 kilometers north-east of the City of Lagos and 26 kilometers from Ikeja, the State capital. Like most parts of Lagos State, Ikorodu Local Government Area is a veritable lowland region with relatively flat undulating features. Stretching about 18 kilometers from east to west along the Lagos Lagoon Front. It has boundaries with Ogun State to the north, the extensive Lagos Lagoon to the south; Kosofe Local Government to the west and Epe Local Government to the east. The Lagos mega-city project is giving way to the development of many of the surrounding towns around the metropolis. In this regard there had been an influx of people from the city centre to the various suburbs giving rise to a fast development of the neighbouring towns including Ikorodu. Ikorodu lies between Latitude 6.36'10" N Longitude : 3 29' 28" E with an altitude of 127ft. Time zone (est) UTC+1. As of 2007 the population of the town stood at 329,424.

Materials and methods

The methodology adopted for the research was the distribution of questionnaires.

Questionnaire administrators

The questionnaires were administered between July and August 2008 by students of the Departments of Food Technology and Hotel and Catering Management of the Lagos State Polytechnic, Ikorodu resident in Ikorodu to evaluate the sanitary status of their immediate community. A random survey of two hundred and eight families was studied. The study included the number of times of infection, types of infection and the costs involved types of water storage practice educational status of the parents etc. The results were analyzed using the SPSS 15.

Results and discussions

The results are shown in Table 1.

Distribution of members in the family

The number of members in the family shows that 60.6% range from 2-5, 30.3% range from 5-8, and 6.7% 9-12. The number of dependants in the family range from 1-3(52.9%), 4-7(35.6%), 8-12(9.1%). The population pattern of families was not recorded to affect the sanitary status.

Water source and use patterns of the families

The predominant source of water for most of the families is the open well water (48.1%). Public tap water source from government treatment plant provides 25% of the population with potable water, commercial water tankers supplies 16.3% of the population with water, 8.2 % of the families obtain their water from vendors. Due to shortages, storage becomes inevitable and 82.2 % of families store water in various plastic buckets, while 6.3% stores in traditional –earthenware storage buckets specifically designed for this purpose. Storage period however varies from 2-4 days(56.3%), 5-7days (35.1%), 8-10 days(6.7%), >11 days(1.9%). Length of storage was reported to increase contamination possibilities, may also result in biofilms on the surfaces of these containers conferring resistance to microbes even during treatment procedures Martiny *et al*(2005).

Table 1. Sanitary status of families in Ikorodu			
Source of water	Frequency	Percentage	Cumulative percentage
Well	100	48.1	48.1
Public Tap	52	25.0	73.1
Water tanker	34	16.3	89.4
Water hawkers	17	8.2	97.6
No response	5	2.4	100.0
Type of latrine			
Water closet	157	75.5	75.5
Pit latrine	46	22.1	97.6
Others	3	1.5	99.1
No response	2	0.9	100.0
Location of latrine to open well			
0-10ft	51	24.5	24.5
11-20ft	51	24.5	49.0
21-30ft	57	27.4	76.4
>30	39	18.8	95.2
No response	10	4.8	100.0
Diarrhoea-like infections/month			
1-4	86	41.3	41.3
5-8	10	4.8	46.1
9-12	1	0.5	46.6

Sanitary facilities of the families

Though a peri-urban community, 97.6% of the populace has access to one form of latrine or the other. While 75.5% have access to water closets, 22.1% have access to pit latrines. In 65.9% cases 1-5 persons share one toilet, 20.7% cases 6-10 persons share a toilet, 10.1% cases 11-15 persons share one toilet and in 1.0% case >15 persons share one toilet. It is however noteworthy that the water closets are discharged into septic tank, with each house having a separate one. It is observed that there is a strong relationship between economic status of families, sanitary facilities and educational status of families in Ikorodu. This is similar to Ahmed *et al* 2001 position of a similar settlement in Bangladesh.

Water and sanitation related ailment

The frequency of diarrhea-like infections per month in families is not desirable with families witnessing from 1-4 (41.3%), 5-8(4.8%). This may not be unconnected with the fact that animals are reared in 36.5% homes. This affects well being of family members visiting the hospital due to above illnesses at least monthly (22.6%), bimonthly (13.5%), quarterly (27.9%).

Socio economic status of families

The above data on water related ailments buttresses the fact that water and sanitation problems are militating factors against economic growth and sustainable development. A high percentage of the parents are educated above high school with 36% fathers and 29.8 mothers having degrees.

Water supply and sanitation in peri-urban settlement like Ikorodu is far from satisfactory and provide a fertile ground for disease spread. With the rate of growth experienced in recent times peri-urban settlements like Ikorodu is becoming part and parcel of the city and facing the challenge of water supply and sanitation would provide relief for the whole city. This is not at variance with reports of Mwesigwa, 1995 on water sanitation in peri-urban communities. The challenge of obtaining information from populace was tasking bearing in mind the awareness about sanitation issues. Provision of safe drinking water and sanitary facilities for all classes of people must be a paramount issue in the human settlement projects. Individual houses either have their septic tanks and soak away or pit latrines as dictated by their economic status (Pickford 1994).

Conclusion

As new towns are developed government agencies must either provide these facilities or encourage settlers to do it by either providing subsidies or stipulating policies that enforces its establishment as has been successfully implemented in Ikorodu in terms of latrines, water closets and septic tanks- a long standing development that is backed by policy in the state. There is need for improvement in the sanitary status of the community bearing in mind that the access to safe water is still very low. The policy of having septic tanks or pit latrines in each home is effectively in practice which seems to reduce the rate of water borne epidemics. Research and studies should be carried out to provide necessary baseline information for sustained behavioural change and further improvement of the technology and environmental safety. This baseline survey was also instrumental to sensitizing the grassroots about their sanitation issues.

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