

Multi-Dimensional Health Communication: A Tool for Improved Environmental Sanitation

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Introduction

Environmental sanitation is the promotion of hygiene and the prevention of diseases and other consequences of illhealth relating to environmental factors (WHO 1997). Environmental sanitation includes issues such as disposal of human excreta, urban solid waste management, domestic water supply, drainage systems, sewage and wastewater management, personal hygiene, household and community cleanliness, food hygiene, disease vectors and pest control. Adequate and effective environmental sanitation practices are the foundation of national development. Inadequate and improper sanitation and poor solid waste management remains two of the main transmitters of diseases in the world's developing countries (Adelegan 2001). Deficiencies in environmental sanitation practices have contributed significantly to the continuing high rate of infant and child mortality from diarrhea and related diseases as well as vector-borne diseases.

The economic costs of inadequate environmental sanitation can be enormous due to disablement of ill people that cannot perform their tasks. Several studies carried out in Nigeria, India, and Egypt indicated the presence of health problems amongst solid waste pickers, and those living in close proximity to dump sites (Sridhar 2006; Ekugo 1998; Oyemade *et al.* 1999). There is a direct link between poor urban solid waste management and public health especially in terms of water related diseases such as diarrhea, dysentery, cholera and typhoid (EHP 1999 and WHO 1998).

Cities in developing countries are increasingly becoming unhealthy places to live in, with the presence of uncollected volumes of solid waste that is visible at the city junctions, emitting nauseating

smells and causing aesthetic nuisance. Contributing to this is the problem of indiscriminate dumping of urban solid waste. In Nigeria, evidence abounds where ordinary citizens have arbitrarily dumped their solid waste (refuse) into gutters or open drains (even when hoppers or waste bins are provided). For example, in a study carried out in Lagos in 2005 to assess the success of Lagos Environmental Sanitation Authority and Malaria Control Project in six communities of Surulere, Ajeromi and Mushin Local Government Areas, about 70 percent of the sampled 1403 respondents confirmed that they often dumped their refuse inside the gutters (CPH 2005).

The responsibility for waste collection and disposal in Nigeria is the constitutional responsibility of local government councils (Nigeria Constitution 1979). However, state governments have taken over the responsibility of urban solid waste management and some of them have made spirited efforts towards addressing the problems of urban solid waste management. For example, some state governments have declared one of the Saturdays of every month as Environmental Sanitation Day, where movement is restricted between the hours of 7am to 10am. Within these hours, residents are expected to clear surrounding bushes and weeds, fill potholes, and clear blocked drains. Environmental jingles in electronic media have also been sponsored by state governments with the aim of creating environmental sanitation awareness amongst her citizens. In Rivers State, for example, jingles as "no throw away dirty any how oho, e de bring yama yama diseases" are commonly heard on the state owned radio. In spite of these measures, the problem of poor environmental sanitation, remains a monumental problem one.

It has been observed that people, especially the poor, do not pay attention to all communications they see on television or hear on radio (Freimuth *et al.* 1989). This is probably because of the one-dimensional communication approach employed. It has been shown that such an approach (one-dimensional) is insufficient to achieve desired results (Backer *et al.* 1992). It is against this backdrop that this study proposes a multi-dimensional health communication approach with the purpose of reaching all categories of audiences about complex health concerns related to environmental sanitation. Specifically, the health communication needs of the people (the poor) at multi-level objectives are presented.

Meaning of Health Communication

Health communication is the use of communication techniques and technologies to positively influence individuals, populations, and organizations for the purpose of promoting human and environmental

health (Maibach and Parrott 1995). It links the domains of communication and health and is increasingly recognized as a necessary element of efforts to improve personal and public health (Piotrow *et al.* 1997; Jackson and Duffy 1998).

Health communication can contribute to all aspects of disease prevention and health promotion and is relevant in a number of contexts, including (i) the construction of public health messages and campaigns, (ii) the dissemination of individual and population health risk information, that is, risk communication, (iii) images of health in the mass media and culture at large, (iv) the education of the public about how to gain access to the public health and health care systems, and (v) the development of telehealth applications (Harris 1995; Ray and Donohew 1990). The practice of health communication has contributed to health promotion in several areas. For example, in Ghana, the Ghanaian Ministry of Health sponsored a multimedia campaign designed to increase AIDS awareness and promote AIDS prevention among young adults in Ghana and the outcome and responses was encouraging (McCombie *et al.* 1992).

Methodology

The study was carried out in 10 (ten) randomly selected squatter settlements (slums) within Woji community, Port Harcourt in Rivers State. The choice of squatter settlements was due to their reported environmental and health related problems the people are known with (Rim-rukeh *et al.* 2006).

Chandramouli (2003) define slums as areas where buildings are in any respect unfit for human habitation by reason of dilapidation, overcrowding, faulty arrangement and design of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light, sanitation facilities or any combination of these factors which are detrimental to safety, health and morals. Economically, Portes (1971) viewed slums as areas inhabited by the poor in the urban system. According to Portes, the poor are the unemployed, the unskilled, and illiterate and often the alcoholics, the vagabonds and the delinquent.

The basic characteristics of slums are visually unpleasant buildings, lack of basic amenities (water supply, sanitation, electricity, etc), acute overcrowding, services used illegally, high birth rate, high mortality rate, high infant mortality, unhealthy environment, low socio-economic conditions, environmental (land, air, water and noise) pollution, frustration among people, lack of civic sense and knowledge, grossly congested area and unsecured life (Warah 2003). The living conditions in slums are usually unhygienic and contrary to all norms of planned urban growth (Warah 2003).

Study Samples

A group of 100 slum dwellers (10 from each squatter settlement) formed the samples of the study carried out between February and April 2007. A common feature of the members of the study samples is their membership of executive committees and women organization group in their area of settlement.

In order to assess the respondents' level of health communication in relation to environmental sanitation, a well-structured questionnaire was designed for the study. The questions focused on situational/communication factors, behavioural intention, and psychological variables regarding poor environmental sanitation. Adopting Chandramouli (2003) indicators for effective health communication, the questionnaire gathered data on:

- (i) Awareness of environmental sanitation day.
- (ii) Identification of the effects of poor environmental sanitation problems.
- (iii) Assessment of present environmental/health issues.

Results and Discussions

The response rate was 100 percent with 100 responses received. Respondents provided answers to all questions or issues raised and no data was treated as missing values. The survey carried out in ten randomly selected squatter settlements in Woji community, Port Harcourt, Rivers State involving 100 people, elicited information on environmental sanitation and its related health issues in the area. It was initially observed that 75 % of the people were not willing to talk primarily because of their living conditions (poor environment) and about 25 % because of their level of education. However, after a bit of persuasion from the researchers with the assurance that the study was purely an academic exercise, we had 100 % cooperation from the respondents.

Demographics

72 % of the people were literate (having the ability to read and write) with at least primary school education (table 1). Majority of the respondents were within the age group of 31 and 40. Most of the respondents were married (76%) while 24% were single. The observed demographic characteristics are consistent with reports for squatter settlements in parts of Nigeria (Rim-rukeh et al. 2006; Omuta 1986; Onibokun 1973).

Table 1: Demographic characteristics of Respondents

Characteristics	No.
Gender	
- Male	79
- Female	21
Marital Status	
- Single	24
- Married	76
Age	
10-20	-
21-30	37
31-40	63
41-50	-
Educational status	
Illiterate	28
Primary	57
Secondary (completed)	3
Secondary (dropout)	12
Tertiary	-

Awareness of Environmental Sanitation Day

When respondents were asked whether or not they are aware of the environmental sanitation day, 54 persons (54%) agreed that they were aware while 46 persons (46%) said they were not aware. 90% of the 54 persons that are aware accused government of inconsistency on the actual day of environmental sanitation. They cited instances where environmental sanitation days were cancelled without pre-announcement on radio or television. 100% of those who are not aware of environmental sanitation blamed it on their inaccessibility to electronic media because such policies and programmes are usually announced via the electronic or print media. However, those that are aware of environmental sanitation attributed their source of information to hear-say. Hear-say is a common source of information among slum dwellers (Rim-rukeh et al. 2006).

Respondents were presented with a list of the likely effects of poor environmental sanitation and were requested to indicate whether they are aware or not.

Table 2: Respondents' Perception of the Effects of Poor Environmental Sanitation

Effects of poor environmental sanitation	No of respondents	
	Aware	Unaware
Odour	73	27
Aesthetic nuisance (unsightly)	81	19
Breeding of disease vectors	39	61
Diseases (e.g malaria)	48	52
Flood	25	75

At least 50 % of the respondents are aware of the likely effects of poor environmental sanitation. The most widely recognized effect is aesthetic nuisance (81 %) followed by odour (73%) and the promotion of disease vectors (48 %). The number of respondents indicates that their awareness of the effects of poor environmental sanitation is a clear indication of the existence of such problems. On how serious these effects can be, respondents were asked to rate each using a three-point scale corresponding to very serious, serious and slightly serious (table 3). Odour was perceived by respondents to be very serious (88.34 %) followed by aesthetic nuisance (52.24 %). This finding is consistent with the work of Onokerhoraye (1988).

Table 3: Respondents' Perception on the Seriousness of the Effects of Poor Environmental Sanitation

Effects of poor environmental sanitation	Very serious	Serious	Slightly serious
Odour	69	31	-
Aesthetic nuisance (unsightly)	38	47	15
Breeding of disease vectors	24	72	4
Diseases (e.g malaria)	52	12	36
Flood	19	32	49

Situational Environmental/Health Conditions

The variables of waste/refuse disposal pattern, toilet facilities, and availability of drainage system were considered for the situational analysis in terms of environmental/health issues. Most of the houses in the slum do not have easy accessibility to refuse collection points and the practice of refuse disposal is indiscriminate dumping of refuse especially into near-by bushes and gutters. Analysis of how the residents dispose of their refuse shows that 11% sent their refuse to refuse collection points while 66% dispose it into nearby bushes/gutters. 19% does indiscriminate disposal of their refuse and 14% could not ascertain their method of refuse disposal (table 4).

Table 4: Methods of Refuse Disposal

Method	No of respondents
Indiscriminate dumping	19
Refuse collection points	11
Disposal into bushes/gutters	56
Others	14

One of the major factors responsible for the indiscriminate disposal of refuse is the non-availability of appropriate facilities close to their abodes. In addition, it was observed that the residents have willful disregard for personal hygiene. Clinard (1966) in a study of slums in India and Marris (1961) in Lagos for example, have independently made similar observations. On the availability of drainage facilities, 97% of the households in the slums do not have any drainage facility (table 5).

Table 5: Availability of Drainage Facilities

Drainage system	No of respondents
Closed drainage	Nil
Open drainage	3
No drainage	97

The survey attempted to examine the nature of the basic facilities available in the dwellings of the slums by investigating the availability of certain basic facilities, which are essential for a healthy

residential environment. The results show that 88% of the dwellings had no kitchen or toilet. It also indicates that 12% of the settlements had the two facilities (kitchen and toilet) (table 6).

Table 6: Availability of Kitchens and Toilets

Household facilities	Physical inspection (%)
Had kitchen and toilets	12
Had no kitchen and no toilet	88

The environmental implication of the study area is that slums are decayed physical environments. Thus, the theory of filthy and decaying environment (Abrams 1966) fits the area.

Application of Health Communication Model

It is evident from the study that the samples do not have access to health/environmental information. In addition, they do not have regard for their environment and personal hygiene. We therefore proposed an effective health communication model from the standpoint of our study. One key component of health communication is the dissemination of health messages through public education campaigns that seek to change the social climate to encourage healthy behaviour, create awareness, change attitude, and motivate individuals to adopt recommended behaviours (Alkin and Wallack 1990). To achieve the objective of using health communication as a means of social change for behavioural modification, we propose that it must have the following attributes:

- i The content of the designed message must be accurate, valid and without errors of fact, interpretation or judgement.
- ii The message must have a target audience and in this case those living in the slums or squatter settlements.
- iii Availability: The content (target message) must be delivered or placed where the target audience can access it. In fact, pictures depicting the effects of poor sanitation habits should be pasted on public kiosks.
- iv Consistency: The message must remain consistent over time and must also be consistent with information from other sources.

- v Cultural relevance: The design, implementation and evaluation of the content of the message must have cultural relevance as well as educational level.
- vi Reach: The content gets to or is available to the largest possible number of people in the target population.
- vii Repetition: The delivery of access to the content is continued or repeated over time, both to reinforce the impact on a given audience and to reach new generations.
- viii Understandability: The reading or language level and format (multi-dimensional approach) are appropriate for the specific audience.

Conclusion

The study has identified low level of awareness of environmental sanitation amongst respondents living in squatter settlements in Woji community, Port Harcourt, Rivers State. The poor sanitation conditions of the people are also presented. A good entry point into solving the environment problems is the development of health communication strategies targeted at this group of people.

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