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Knowledge Of Environmental Sanitation Among Students In Public Tertiary Institutions, Rivers State

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ABSTRACT

This study examined the knowledge of environmental sanitation among students in public tertiary institutions, Rivers State. A cross sectional study design was adopted with a population consisting of 9,050 undergraduates in the halls of residence in public universities in Rivers State. Three research questions were stated to guide the study. The sample size was 995 which was selected using the multi-stage sampling procedure. The instrument for data collection was a structured questionnaire with a reliability coefficient of 0.87. Data collected was analyzed with the aid of the Statistical Product for Service Solution (SPSS) version 23.0 using statistical tools such as percentage. The result showed that more, 349(35.3%) had average knowledge, 321(32.4%) had poor knowledge while 319(32.3%) had good knowledge. More, 368(37.2%) had average knowledge, 315(31.8%) had good knowledge while 306(32.0%) had poor knowledge. The result showed that more, 393(39.7%) had good knowledge, 309(31.2%) had average knowledge while 289(29.1%) had poor knowledge. It was concluded that the knowledge of environmental sanitation among students in public tertiary institutions, Rivers State was good. It was recommended among others that, the school management should provide a manual on environmental sanitation which will be given to students in halls of resident after allocating them to their respective rooms. This will help to sustain the good knowledge found among them.

Keywords: Environment, Knowledge, Students, Sanitation, Institutions

INTRODUCTION

Environmental sanitation has been a topical issue drawing different views on ways to improve and maintain proper sanitation in communities. According to Ordinioha (2010), environmental sanitation is the control of all the factors in man's physical environment which exercise or may exercise a deleterious effect on his physical, mental or social well-being. It includes the following: provision of a safe and adequate water supply, proper disposal of solid waste, proper sewage disposal and treatment, safeguarding of food, provision of good housing, control of atmospheric pollution (air hygiene), control of insect vectors and other pests, control of animal reservoir of infection, disinfection and elimination of other hazards such as noise, radiation among others. The need for improving sanitation has been necessitated by population increase, industrialization, urbanization, the alteration of urban consumption pattern towards packaging and economic growth, resulting in an increase in solid waste (SW) generation in developing countries (Dhokhikah et al., 2015).

Nigerian records show that every year, about six hundred thousand (600,000) episodes of diarrhoea occur in children under the age of five (Alabi, 2010). Also, there have been increasing numbers of cases of

cholera over the years. From January to December 2010, Nigeria reported 41,787 cases including 1,716 deaths from 222 Local Government Areas (LGAs) in 18 States of the country. The most affected states were Borno, Bauchi and Katsina. In addition to the disease burden, Nigeria loses about N455 billion annually which is equivalent to 1.3% of Gross Domestic Product (GDP), due to poor sanitation as reported by water and sanitation program of the World Bank (Vanguard, 2013). The poor state of food sanitation in the country has been shown to play a significant role in the etiology of food borne diseases. One of the most significant diseases that arise from poor sanitation is diarrhea. Deaths resulting from diarrhea are estimated to be between 1.6 and 2.5 million every year (WHO, 2012). Environmental hazards are responsible for about a quarter of the total burden of disease worldwide and as much as 30% in regions such as sub-Saharan Africa. As many as 13 million deaths can be prevented every year by making our environments healthier. These facts and figures highlight the impact of environmental factors on public health. More than 2.4 billion people in the world currently lack access to adequate sanitation and are forced to dispose of their excreta in unimproved and unsanitary conditions. Those who suffer from this, lack most basic human needs and also tend to be victims of poverty, ill health and an overall poor quality of life (WHO, 2018). In developing countries like Nigeria, the main diseases of the environment are diarrhoeal disease, lower respiratory infections, unintentional injuries, and malaria.

The concept of environmental sanitation refers to activities aimed at improving or maintaining the standard of basic environmental conditions affecting the wellbeing of people. These conditions included: clean and safe water supply, clean and safe ambient air, efficient and safe animal, human, and industrial waste disposal, protection of food from biological and chemical contaminants, and adequate housing in clean and safe surroundings. Sanitation is also referred to hygiene (Business Dictionary, 2010). A key culprit of poor sanitation is diarrhoeal disease which is a significant group of feco-oral diseases that has substantial impact on the mortality patterns in children especially under the age of 3 years (Duru et al., 2017). Poor sanitation has also been linked to acute respiratory infections, malnutrition and in particular, neglected tropical diseases such as trachoma, soil-transmitted helminthiases and schistosomiasis; as many of these diseases can be transmitted feco-orally (WHO, 2017). In developing countries, majority of people lack sanitation, even with urbanization, the provision of improved sanitation remains a continuous challenge due to the inability to cope with the associated increase in population as communities move from rural, semi urban to urban development (Mara et al., 2010). Also according to Daramola (2012), the population growth in Nigerian cities is not accompanied by a corresponding increase in the provision of environmental sanitation facilities.

The principal components of environmental sanitation as given by Onyango (2017) summarized the components of environmental sanitation: managing solid waste and wastewater, pest and vector control and hygiene which include human excreta control. Thus, the present study adopted the components of environmental sanitation as waste management, pest and vector control, and hygiene. These services must be provided reliably and continuously to mitigate the negative effects of social and economic activity in human settlements. The world's cities continue to experience population growth at a rate that far exceeds their absorptive capacity in terms of conventional sanitation infrastructure and environmental protection. This situation is compounded by the inability of governmental agencies to meet the corresponding waste generation associated with population growth through the provision of basic environmental service and on the part of the individual, inadequate knowledge of environmental sanitation.

Knowledge of environmental sanitation could enhance its practice. Knowledge is referred to as familiarity with a concept or particular thing. When a thing is not known, its practice becomes difficult. According to Morse and Allensworth (2015), health promotion activities (activities that help people to increase control over health outcomes, improve and maintain their health) including sanitation should focus on promoting the awareness about hostel sanitation which will go a long way in curtailing diseases and adverse health consequences associated with dirty hostels environments because these activities have direct impacts on the practices towards environmental sanitation. According to Ndukwe (2010) health practices are products of feeling and knowledge; an educational process by which agents of education namely; parents, teachers, nurses, community health workers exert influence on individuals to affect their health behaviour.

Many schools serve communities that have a high prevalence of diseases related to inadequate water supply, sanitation, hygiene and other related health problems are common. Under these conditions, schools become unsafe places where diseases are easily transmitted (WHO, 2013). Thus, it is important that students are knowledgeable about environmental sanitation.

Statement of Problem

Several illnesses affecting man is traceable to poor environmental conditions because the daily interactions between man and his surrounding exposes him to environmental factors such as water, soil and air pollution, and poor housing conditions which are all deleterious to human. Ironically, the activities of man are responsible for pollution of his environment such as indiscriminate disposal of waste, poor hygiene practices and industrial activities. In Rivers State, such activities are also seen even among students in tertiary institution who are taught to be custodian of knowledge, to model good health behaviour but, the reverse is the case as observation has shown that some student hostels present ugly sight due to littering of items including used sanitary pads, students urinating around hostels, defecating in polythene bags and leaving it lying around, including other substances like pieces of paper, pack from wrappings, and tins and pure water polythene among others. In some cases, wastes are heaped or dumped haphazardly and mixed up together, unsorted with both degradable and non-degradable wastes mixed up together, causing offensive smell, attracting mosquitoes and pests such as cockroaches and rats and constituting ugly sight. These make rooms or the surrounding attractive for pests and disease vectors. Thus, the need to investigate their knowledge of environmental sanitation. The study provided answers to the following research questions:

1. What is the level of knowledge of waste disposal as a component of environmental sanitation among students in public tertiary institutions, Rivers State?
2. What is the level of knowledge of control of vectors of disease as a component of environmental sanitation among students in public tertiary institutions, Rivers State?
3. What is the level of knowledge of hygiene as a component of environmental sanitation among students in public tertiary institutions, Rivers State?

METHODOLOGY

A cross sectional study design was adopted. The population for this study consisted 9,050 undergraduates in the halls of residence in public universities in Rivers State. The sample size for this study was 995 which is 10% of the population, calculated using the formula below: $n = 10/100 \times N$. Where n is the sample size calculated and N is the population for the study. $n = 10/100 \times 9{,}050 = 905$. Adding 10% attrition, that is, 905 + 90; n = 995. A multi-stage sampling procedure was adopted for the study. At the first stage, a simple random sampling technique (balloting without replacement) was used to select two hostels in each of the three public universities making it a total of six hostels to be used for the study as shown in the table below. At the second stage, the proportionately stratified sampling technique was used to determine how many respondents to be selected from each of the hostels and; at the third stage, the simple random sampling technique was used to was used to select the respondents for the study.

The instrument for data collection was a structured questionnaire title: Environmental Sanitation Questionnaire (ESQ). The instrument had two sections A, and B. Section A was focused on the socio-demographic data of the respondents which included age, gender, level of study, and period of time spent in the hostels in a multiple response format while Sections B focused on the knowledge of the three basic components of environmental sanitation included: waste management, pest/vector control and hygiene respectively which were all responded to on a Yes or No response format. Sections E, F and G elicited responses on waste management practices, pest/vector control practices and hygiene practices respectively on a modified four point Likert of Always (4), Sometimes (3), rarely (2) and never (1). The instrument has a reliability coefficient of 0.76. Data were analyzed with the aid of the Statistical Product for Service Solution (SPSS) version 23.0, using descriptive statistics such as percentage.

RESULTS

Table 1: Percentage distribution showing level of knowledge of waste disposal as a component of environmental sanitation among students in public tertiary institutions (N = 989)

Level of knowledge	Frequency	Percentage	Decision
Good	319	32.3	Average knowledge
Average	349	35.3	
Poor	321	32.4	
Total	989	100.0	

Table 1 revealed the percentage distribution showing level of knowledge of waste disposal as a component of environmental sanitation among students in public tertiary institutions. The result showed that more, 349(35.3%) had average knowledge, 321(32.4%) had poor knowledge while 319(32.3%) had good knowledge. Thus, the level of knowledge of waste disposal as a component of environmental sanitation among students in public tertiary institutions, Rivers State was average.

Table 2: Percentage distribution showing level of knowledge of waste disposal as a component of environmental sanitation among students in public tertiary institutions (N 989)

Level of knowledge	Frequency	Percentage	Decision
Good	315	31.8	Average knowledge
Average	368	37.2	
Poor	306	31.0	
Total	989	100.0	

Table 2 revealed the percentage distribution showing level of knowledge of control of vectors of disease as a component of environmental sanitation among students in public tertiary institutions. The result showed that more, 368(37.2%) had average knowledge, 315(31.8%) had good knowledge while 306(32.0%) had poor knowledge. Thus, the level of knowledge of control of vectors of disease as a component of environmental sanitation among students in public tertiary institutions, Rivers State was average.

Table 3: Percentage distribution showing the knowledge of hygiene as a component of environmental sanitation among students in public tertiary institutions (N = 989)

Level of knowledge	Frequency	Percentage	Decision
Good	393	39.7	Average knowledge
Average	309	31.2	
Poor	287	29.1	
Total	989	100.0	

Table 3 revealed the percentage distribution showing level of knowledge of hygiene as a component of environmental sanitation among students in public tertiary institutions. The result showed that more, 393(39.7%) had good knowledge, 309(31.2%) had average knowledge while 289(29.1%) had poor knowledge. Thus, the level of knowledge of control of vectors of disease as a component of environmental sanitation among students in public tertiary institutions, Rivers State was good.

DISCUSSION OF FINDINGS

The findings of the study are summarized below:

The result in Table 1 showed that the level of knowledge of waste disposal as a component of environmental sanitation among students in public tertiary institutions, Rivers State was average (35.3%); 668(67.0%) had good knowledge of waste disposal and solid waste management involve storage of waste before disposal (66.9%). This good knowledge of solid waste management found among the respondents may not be surprising because they are students who are exposed to knowledge which enlightens them,

including on waste disposal. The finding of this study is in line with that of Adeyemo et al., (2013) which showed that the respondents had knowledge of waste disposal. This finding could be as a result of some awareness programmes and announcement done via media on waste management carried out in that area. This result is in line with the findings of Adogu et al., (2015) which revealed that 73% respondents had high knowledge about solid waste management in their study conducted among the residents of chiang rai province of northern Thailand and 90% of the respondents were aware of solid waste management respectively. It was also in agreement to Laor et al., (2018) study that showed good level of knowledge on solid waste management. Also, in collaboration with the findings of Sisay *et al.*, (2017) showed that 81.8% of the respondents had good knowledge, Eshwari *et al.*, (2019) revealed that 60.3% of the people had good knowledge of solid waste management. Pussadee et al., (2017) in his findings revealed that 73% had high level of knowledge on solid waste management. This study revealed that the respondents are knowledgeable about refuse management. This is in line with the finding reported by Yadavannavar et al., (2010) that it may be due to the fact that majority of the respondents were aware of refuse management. This similarity found between the present study and the previous ones might be due to the homogeneity of the study population and the concepts studied.

The result in Table 2 showed that the level of knowledge of control of vectors of disease as a component of environmental sanitation among students in public tertiary institutions, Rivers State was average (37.2%). It is pertinent to note, deducing from the findings of this study that, an individual may not be able effectively practice what they do not know. Hence, good knowledge of environmental hygiene found is encouraging. This finding is similar to several other results found in other studies. This finding corroborates that of Adelakun (2003) which showed that, poor environmental sanitation practices have largely been attributed to illiteracy, and ignorance are some of the major contribution of environmental degradation because each of such factors (illiteracy and ignorance or lack of knowledge about environmental sanitation) influence people's behaviour and attitudes towards the environment thus, inhibiting effective environmental sanitation practices in the surrounding. The finding of this study is akin to that of Wright (2007) which showed that basic knowledge, skills and human behaviours as well as social and cultural factors concerning health, life styles and environmental awareness which include household cleanliness (kitchen, hygiene, washing, dressing eating, community cleanliness (waste collection, common) are vital factors which can inhibit effective environmental sanitation. The finding of this study corroborates the report of the World Health Organization (2013) which showed that, peoples' lack of awareness about environmental sanitation and the implications of their actions on the environment, environmental deterioration had arisen to a large extent and that a person's level of lack of knowledge about the environment can be said to be positively related to the degree of (his/her) damage to the environment through poor environmental sanitation practices, thus, poor knowledge about environmental sanitation constituted an inhibitor to environmental sanitation practices. The similarities found between the previous studies and the present one could be explained by the similarity in the research designs adopted in such studies.

CONCLUSION

Based on the findings of the study, it was concluded that knowledge of environmental sanitation among students in public tertiary institutions, Rivers State did not translate to practice; despite the good level of knowledge found, the practice was low which calls for the need for behavioural change interventions aimed at influencing practice rather than knowledge based interventions among students in public tertiary institutions, Rivers State.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were put forward:

1. The school management should provide a manual on environmental sanitation which will be given to students in halls of resident after allocating them to their respective rooms. This will help to sustain the good knowledge of waste disposal found among them.

2. The hall representatives should not relent in passing environmental sanitation information, including pests and disease vector control during their weekly assembly in each hall.
3. The student affairs division of each public tertiary institution should work in collaboration with the department of health to assign senior health students to the different halls of resident on a weekly basis for continues spreading of environmental hygiene messages to the students in the halls of resident.

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