

# **Influence of Safe Excreta Disposal Campaigns on Knowledge, Attitude and Practices among Rural Residents in South-East Nigeria**

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## **Abstract**

This study investigates the influence of safe excreta disposal campaigns on the knowledge, attitude and practices of rural people in South East Nigeria. To investigate this, the researcher used Convergent Mixed methods design to generate quantitative and qualitative data through questionnaire, in-depth interview and observation. A sample of 18 communities was drawn from 18 rural LGAs in South East Nigeria where the study is based. After the analysis, findings revealed that rural residents were aware of the health dangers associated with unsafe disposal of excreta. This was as a result of their exposure to media messages on unsafe excreta disposal campaigns designed and executed by UNICEF and WHO. The findings also revealed that the knowledge level of the respondents on unsafe disposal increased as a result of their exposure to the campaigns. The increase in respondents' knowledge level was determined by the ability of the respondents to recall 78 percent of the dangers associated with indiscriminate disposal as contained in the campaigns. Again, it was found that over 56 percent of the rural people have positive attitude towards safe excreta disposal. In essence, the respondents now believe that there are health dangers associated with unsafe excreta disposal. However, observation revealed that this positive attitude did not translate to practice as majority of them still defecate in open fields, bush, streams and farmlands. The respondents attributed this negative practice to lack of toilet facilities and the fact that they were comfortable defecating in the open. Based on these findings, it was recommended that the current safe excreta campaigns by UNICEF and WHO should be redesigned for efficiency using the fear appeal strategy. This is because the current campaigns failed to emphasize the health dangers inherent in unsafe disposal. The fear appeal strategy has been proven to be effective by health promotion theorists. Again, local government councils in Nigeria should help in providing toilet facilities in schools, markets and homes.

## **INTRODUCTION**

The entire human race is, more than ever before, endangered by growing susceptibility to killer diseases. Regrettably, most of these diseases are products of man's growing wrong interplay with the environment. This has brought to the fore our individual and collective quest for safety by ensuring a healthy society through healthy practices. Health experts and organisations have continuously maintained that unhealthy human activities in the environment accounts for over one billion cases of killer diseases like diarrhoea, cancer, typhoid, giardiasis, cholera, trypanosomiasis, Intestinal helminthes, schistosomiasis, dracunculiasis, trachoma, poliomyelitis and others (Rim-Rukeh & Ogbemi, 2007, p.114; Gleick, 2002, p.10). Diarrhoea, for instance, accounts "for 1 in 9 child deaths worldwide, making diarrhoea the second leading cause of death among children under the age of 5" (CDC, 2013, p.3). An estimated 2,195 children die daily of diarrhoea. Cholera that is often caused by indiscriminate disposal of faeces close to water and food sources, accounts for approximately 120,000 deaths globally (Malange, 2010; WHO, 2012, p.1). Typhoid fever has equally maintained a steady lead among global diseases that are caused by human attitude towards the environment. World Health Organisation says it kills over 600,000 people annually in over 17 million cases (WHO, 2014; WHO 2003). Unarguably, more than 90 per cent of the cases mentioned above are direct results of man's inability to understand the strategic importance of environmental sanitation and personal hygiene.

Of all the cases of environmental management, indiscriminate disposal of excreta presents a dangerous situation. It is a common practice in developing countries of the world for people, especially those living in the rural areas, to defecate in open locations or bushes. In urban centres where there is absence of conveniences and proper disposal facilities, residents result to indiscriminate disposal of excreta at dump sites and open sewage. The fact is, over one-third of the world's population is affected by huge water and sanitation crisis. It is "estimated that 6 out of every 10 people do not have toilet- a factor that, according to World Health Organisation Report, contributes to the transfer of bacteria, viruses and parasites found in human excreta which contaminate water resources, soil and food" (Awake, 2013, p.3).

Harvey (2004, p.2) explains that inadequate and unsafe disposal of human faeces can lead to the

transmission of faeco-oral diseases which can result in the contamination of the ground and water sources, and can provide breeding sites for flies and mosquitoes which may carry infection. In most cases, human faeces may attract domestic animals and vermin which spread the potential for diseases. This is more in the rural areas of Africa where there is growing poverty and illiteracy.

Rural dwellers in almost all the cases defecate in bushes or open spaces that are close to water sources like streams, rivers and lakes and in the event of rain fall, it washes the excreta down to these water sources thereby causing serious health challenges. Apart from intake of contaminated water, marine life is greatly affected. Studies have shown that most illnesses are contracted through the consumption of contaminated fish and other sea food. Udoudo and Ashong (2008,p.275) write that in rural communities, especially those found in the “riverine communities of the Niger Delta region, one can hardly find modern toilet facilities. In other parts of the country, human faeces are passed in small bushes around people’s homes”.

Multiple Indicator Cluster Survey Report (2011), reveals that about 49 percent households in Nigeria do not have sanitation facilities or use unimproved facilities. Of the 50 percent that have sanitation facilities, more than half are used by more than three persons. This constitutes a serious health risk. The survey also indicates that most rural dwellers adopt the open defecation system because of the absence of these facilities. In Ebonyi State for instance, over 45 percent of its citizens defecate in the bushes or open field close to water sources. Enugu State is the worst hit in the South East with over 48 percent of her citizens defecating in open spaces such as field and bushes. 1.2 percent, 14 percent and 15.8 percent of residents of Abia, Anambra and Imo states respectively, defecate in open spaces. Regrettably, the Survey also shows that majority of Nigeria do not wash their hands after defecation or disposal of child faeces (Multiple Indicator Cluster Survey Report, 2011, p.107).

Unfortunately, disease outbreaks occasioned by this unsafe disposal have continued to grow despite regulatory measures and laws put in place to ensure a healthy environment for all. All the states in South East have sanitation agencies established to regulate disposal of waste.

From all known facts about environmental related diseases, it is obvious that the best line of defence against any disease outbreak is to raise peoples’ awareness and knowledge on how best to dispose human and animal excreta. Hand washing education is also important at this stage. Studies have shown that improvements in water quality alone through proper awareness can lead to serious reductions in childhood diarrhoea and other disease (Esrey, 1996; Esrey & Habicht, 1996). This calls for aggressive health campaigns that can change peoples’ attitude towards the environment. Such a change must be driven by planned communication. According to Mustapha (2008) cited in Okpoko (2013, p.122) communication is an important component of health delivery. Studies on health communication clearly illustrate the powerful influences of communication on healthcare (Okpoko, 2013). Obviously, the mass media campaigns can raise awareness of an issue, enhance knowledge and change attitudes.

In recognition of this, UNICEF, WHO, USAID and the Federal Ministry of Health launched various campaigns aimed at discouraging people from indiscriminate disposal of excreta. Most of these campaigns (Key Household, Let’s build new toilets, Alive and Well and Healthy living ) have been in place for the past few years. In 2010, UNICEF and WHO launched Key Household campaign aimed at educating rural people on safe excreta disposal, proper hand washing and breast feeding. These campaigns were targeted at rural people because they felt that rural areas lacked basic infrastructure and most disease outbreaks occur in rural areas. Using both the radio and community dialogue sessions, rural people are made aware of the dangers of unsafe excreta disposal. This campaign ran for four year (2010 to 2014). For instance, some of the campaigns, Let’s build new toilets, is still running on the network service of Federal Radio Corporation of Nigeria. The Nigeria Television Authority (NTA) also airs the safe excreta campaign in two of its health programmes: Alive and Well and Healthy living. These programmes discuss variety of health issues including the need for healthy environment (Multiple Indicator Cluster Survey Report, 2011).

Apart from the use of the mass media, UNICEF and WHO equally use field staff to educate rural people and school children on the best ways to dispose excreta to avoid diseases. Makers of Dettol Soap and antiseptic, Reckitt Benckiser, also partner with UNICEF to educate school children and nursing mothers on the need secure a healthy environment free from ‘germs’. In its popular television advertisement, “Do you know that germs live with you?”,nursing mothers and school children are advised to wash their hands after disposal of excreta. However, how effective these campaigns are in educating the rural dwellers is a subject of inquiry (Multiple Indicator Cluster Survey Report, 2011).

### **Statement of the Problem**

For over two decades, the United Nation’s Children Fund (UNICEF), World Health Organisation (WHO), the Federal Ministries of Health, Environment and Water Resources and other development partners have been engaged in solid waste management and sanitary campaigns aimed at raising people’s awareness and knowledge on how best to achieve a healthy environment. Particularly, UNICEF, under its KEY Household Campaign,

pushed the need for proper excreta disposal and regular hand washing among Nigerians.

In executing the safe excreta disposal campaign, UNICEF and its development partners used the mass media and community dialogue strategy to educate the rural population on the health implications of unsafe excreta disposal and dirty hands. With women and children as the main target, emphasis was placed on steps towards a hygienic environment. The focus of these campaigns, according to its designers, is to change attitude and behaviour of rural people about unsafe excreta disposal.

One wonders if the campaigns are not effective in bringing about the desired attitude and behaviour. Though some studies have investigated this, none however, used a KAP (knowledge attitude and practice) approach in such investigation. This calls for empirically independent investigation since available literature showed that there are no KAP studies with media background that evaluated the influence of the campaign times in South East rural communities. Hence, this study investigates the influence of safe excreta disposal campaigns on knowledge, attitude and practices among rural people in South-East Nigeria.

### **Objectives of the Study**

The general objective of this study is to investigate the influence of safe excreta disposal campaigns on knowledge, attitude and practices of rural people in Nigeria. Specifically, the following objectives were raised:

1. To find out the frequency at which rural people are exposed to safe excreta disposal components as contained in the campaign.
2. To examine their level of knowledge on the health dangers of unsafe excreta disposal.
3. To determine the attitude of rural people in South-East towards safe excreta disposal.
4. To find out the degree of safe excreta disposal practices among the rural people of South-east Nigeria.

### **Research Questions**

From the objectives above, the following research questions were raised to serve as a guide in the study.

1. How often are rural people exposed to safe excreta disposal practice as captured in the safe excreta disposal campaigns?
2. What is rural people's level of knowledge on the dangers of unsafe excreta disposal?
3. What is the attitude of rural people in South-East towards safe excreta disposal?
4. What is the degree of safe excreta disposal practices among the rural residents in South-East?

### **Research Hypotheses**

The following alternate hypotheses were raised:

#### **Hypotheses One:**

**Hi:** The level of knowledge of the rural people is dependent on their level of awareness about the health dangers of unsafe excreta disposal.

#### **Hypotheses Two**

**Hi:** There is a significant relationship between rural people's level of knowledge about the health dangers of unsafe excreta disposal and their attitude towards safe disposal of excreta.

#### **Hypotheses Three**

**Hi:** There is a significant influence between rural people's attitude towards safe disposal of excreta and their safe excreta disposal practices.

### **Significance of the Study**

The findings of this study will be of interest to practitioners in the field of health and health communication, particularly UNICEF, WHO and Federal Ministry of Health. The findings will add to previous findings made.

This research work will advance knowledge in the area of health communication. In this regard, the academic community, especially scholars and students of health communication will use this work as reference point in teaching and execution of similar studies. This study also serves as a platform for health communication experts and teachers to advance future studies.

### **LITERATURE REVIEW**

Considering the health dangers of unsafe excreta disposal, various agencies and governments around the world launched series of campaigns to increase peoples' knowledge on the dangers of unsafe disposal and possibly, influence their attitude and practices. In Nigeria, various health campaigns have been designed and executed in order to achieve a desired behaviour. For instance, UNICEF, WHO, USAID and the Federal Ministry of Health have launched various campaigns aimed at discouraging people from indiscriminate disposal of excreta. Most of these campaigns have been in place for the past thirty years and counting. In 2010, UNICEF and WHO launched

*Key Household* campaigns aimed at educating rural people on safe excreta disposal, hand washing and breast feeding. (Multiple Indicator Cluster Survey Report, 2011).

Considering all these campaigns, one is quick to ask, what is the exposure level or awareness level of the people on the campaigns. Unarguably, level of awareness is a key monitoring indicator in any campaign evaluation. Nwike, (2011) also emphasized the need for proper public awareness of the dangers of indiscriminate disposal of waste like faeces and other domestic waste which constitute serious health challenge. She explained that the entire process of change in behavioural communication starts with a serious public awareness. Okpoko (2013) lends credence to this when she noted that communication is a vital component of health care delivery. Therefore, communication to take place, there must exposure to such health messages.

Generally in KAP analysis, it is expected that exposure should affect knowledge, attitude and practices. This means that, if one is exposed to certain information, an increase in knowledge and a consequent change in attitude and behaviour are expected. However, there are cases where exposure to campaign messages does not automatically translate to increase in knowledge and a change in behaviour. This is evident in the fact that there exist some interfering variables in every given action.

In any case, the place of campaigns, especially that of health, remains very important in every human society. Lending credence to this, Onekutu, and Ojebode (2007) assert “that one aspect of communication research that has had tremendous positive impact on society in the development and direction of health promotion campaigns is health communication research”. Opkoko (2013) added that it has been extensively reported that mass media campaigns are vital tools for promoting healthy behaviours and discouraging unhealthy ones. This explains why health campaigns are usually articulated with specific range of issues communicated to target group (s) over a specific period of time. This goes to show that health campaign is very strategic.

In a survey conducted by Njoku C. N in 2011, it was found that rural people in South West Nigeria were quite knowledgeable about the dangers of indiscriminate waste disposal but had poor sanitary behaviour. Out of the 389 persons studied, 302 still defecate in open field and bushes. This does not diminish the fact that 76 per cent of the respondents claimed that they had positive attitude towards disposal. Njoku concluded that in most health campaigns, attitude does not translate to practices.

In another study conducted in the Kintampo North District of the BrongAhafo region of Ghana by Okechukwu, O.I, Okechukwu, A.A., Noye-Nortey H and Owusu-Agyei in 2012, it was established that the knowledge of household heads in relation to health effects of poor waste disposal is high. The survey which used semi-structured questionnaires, in-depth interview and focus group discussion, revealed that 81.6% of household heads were aware of the health implication of poor waste disposal and 74 percent were knowledgeable about the likely disease that unsafe disposal in the rural area could cause. Majority of the respondents mentioned cholera, diarrhoea, Typhoid and malaria as the major diseases caused by indiscriminate disposal.

The study also revealed that while knowledge and attitude towards unsafe disposal, the practice of safe disposal among rural residents in Northern Nigeria and Ghana is poor. It was revealed that there are serious cases of open defecation in streams and nearby bushes. The major reasons given by these residents, according to the survey, include the need for natural air while defecating, lack of toilet, distance, unwillingness to clean the toilet and the fact that defecating in the bushes do not have any financial attachment. The researcher concluded that all these could be attributed to age long believe (Okechukwu, Okechukwu, Noye-Nortey and Owusu-Agyei, 2012).

Ehrampoush, and Moghadam, in their study in 2005 insist that unhealthy disposal of solid waste especially human excreta is considered as one of the most serious problems in many societies. This explains why the problem of waste management has arisen recently in developing countries where there is little history of the implementation of formal and informal community environmental education awareness program. The instigation of such program is essential to rapidly educate the public and facilitate the development of environmentally friendly community waste behaviour.

Ehrampoush, and Moghadam (2005) concluded in their survey that rural people have a good knowledge of the health dangers of unsafe excreta disposal but this knowledge does not translate to positive practice. The survey revealed that rural people still defecate in open spaces and farmlands that are even close to water sources. When it rains, the disposed faeces are washed back to these water sources which in most cases are their only sources of drinking water. However, Ehrampoush, and Moghadam did not use observation method in their study and one wonders how such conclusion was drawn. This remains the major flaw of their study.

The study of “existing knowledge, attitude, and practices regarding biomedical waste management among the health care workers in a tertiary care rural hospital conducted by Radha R in 2012 takes care of the flaws recorded by Ehrampoush, and Moghadam (2005). Radha observed that though the respondents used in the survey had good knowledge and attitude towards disposal, they lacked good safe waste disposal practices. In all, it appears there is always good knowledge about a disease but the attitude and practices of people, sometimes do not conform with what they do.



## **Theoretical Framework**

In providing theoretical backing to this study, Transtheoretical Model and theory of Planned Behaviour (TPB) were used.

### **Transtheoretical Model**

Transtheoretical model also referred to as the Stages of Change (SOC) model was popularized by Prochaska 1979 (Prochaska and DiClemente 1983 Health Surveys). The model is a widely applied cognitive model which sub-divides individuals between five categories that represent different milestones, or 'levels of motivational readiness along a continuum of behaviour change. These stages are (i) pre-contemplation, (ii) contemplation, (iii) preparation, (iv) action, and (v) maintenance. Whilst practitioners acknowledge many hundreds of different interventions, the SOC model identifies ten types ('processes') which are most widely used and investigated. In essence, the model describes how people modify behaviour or acquire a positive behaviour. Since it explains individual emotions, cognitions and behaviour, it helps us to understand why and how people change their behaviour when they come in contact with some messages calling for change and how it is sustained. In relation to the study, the model helps us to appreciate how rural people come in contact with safe excreta disposal campaigns and how they change their behaviour over a period of time.

### **The Theory of Planned Behaviour**

The theory of Planned Behaviour (TPB) is one of the most widely cited and applied behavioural theories. It is one of a closely inter-related family of theories which adopts a cognitive approach to explaining behaviour which centres on individuals' attitudes and beliefs. The TPB (Ajzen 1985, 1991; Ajzen and Madden 1986) evolved from the theory of Reasoned Action (Fishbein and Ajzen 1975) which posited intention to act as the best predictor of behaviour. Intention is itself an outcome of the combination of attitudes towards behaviour.

In relations to this study, the planners of safe excreta campaigns had in mind the kind of behavioural change they expect upon execution of the campaigns. Since there is understanding that safe excreta practice among rural people is a function of their beliefs and attitude, the campaigns were targeted at the beliefs and attitude of the people. In essence, it helps us to understand that practice in this regard is a function of belief and attitude.

## **METHODOLOGY**

### **Research Design**

To examine the influence safe excreta disposal campaigns on the knowledge, attitude and behaviour of the rural people of South-East Nigeria, the researcher used the Convergent Mixed methods design. This design, which is also called Parallel or Concurrent design, allows a researcher to simultaneously collect both quantitative and qualitative data and use the results to explain a research problem. According to Creswell (2012, p.540), the "basic rationale for this design is that one data collection form supplies strengths to offset the weaknesses of the other form, and that a more complete understanding of a research problem results from collecting both quantitative and qualitative data".

Since Convergent mixed method approach calls for the use of more than one method in a study, the researcher used cross-sectional survey, observation and in-depth interview methods. Survey method was used to generate quantitative data, observation and in-depth interview were used to generate qualitative data.

### **Population of Study**

The population consists of all the residents of the five South-East states of Anambra, Enugu, Ebonyi, Abia and Imo states. The 2013 projected population of South-East is 20,555,137 according to National Population Commission (NPC) 2013.

### **Sample Size**

In this segment, the researcher opted for the selection of a representative sample size that would produce valid results because of the largeness of the population (20,555,137). A sample of 384 was drawn using online sample size calculator advanced by Wimmer and Dominick (<http://www.rogerwimmer.com/mmr9e/samplesizecalculator.htm>).

However, Wimmer & Dominick, (2013) online calculator only provides for a basic sample size which requires an over sampling to make provision for mortality in the field. Bertlett, Kotrlík and Higgins (2001,p.46) citing Salkind (1997,p.107) Fink (1995, p. 36) and Cochran (1977, p.396) suggested over sampling when a researcher is studying a large population and error margin is expected.

To calculate for the over sampling procedure, a response rate estimate of 95% was adopted. The calculation for the contingency is shown below:

Minimum sample size  

$$n_2 = \frac{\text{Minimum sample size}}{\text{Anticipated response rate}}$$
 Where anticipated return rate = 93%.  
 Where  $n_2$  = sample size adjusted for response rate.  
 Where minimum sample size = 384.

Therefore:

$$n_2 = \frac{\text{Minimum sample size}}{\text{Anticipated response rate}} = \frac{384}{93\%}$$

$n_2 = 384/0.93 = 412.9032258$ . The sample is therefore 413..

### Sampling Technique

To investigate all the variables raised in the study, the researcher used multi-stage cluster sampling technique as the sampling technique. This technique enabled the researcher to collect both quantitative and qualitative data required to answer all the research questions raised in the study. To this end, the sampling was done in stages.

In the first stage, three states of Ebonyi, Enugu and Abia States were randomly selected from the five states. From these three states picked, one senatorial zone was picked from each state. One local government was equally picked from each senatorial zone using simple random sampling without replacement. This means that 9 local government areas were selected; giving that one was selected from each senatorial zone. However, before the random selection was done, all the urban local governments were removed from the list. This was to ensure that only rural local governments were selected since the study had to do with rural communities only. Proportional representation was further done to determine how many copies of questionnaire were accruable to each selected local government. Hence, Awgu got 54 copies of the questionnaire, Udenu got 54, Nkanu West got 44, Ezza North got 44, Ishielu got 46, Ohaozara got 45, Ehime-Mbano got 39, Ideato got 43 while Okigwe 40. In the third stage, two communities were selected from each of the nine local government areas selected earlier. The selected communities are Mbowo, Ihe, Imilike-Ani, Igugu, Obe, Agbani, Ebiji, Umuzeoka, Amaezu, Agba, Amechi, Uburu, Agbaja, Umunakanu, Akpulu, Dikenafai, Aku and Amuro.

Copies of questionnaire were purposively distributed in selected households within each selected ward. As such, respondents with the capacity to respond to items in the questionnaire were issued with the questionnaire.

### Sampling Technique for Qualitative Analysis

In-depth interview was used to generate qualitative data. Hence, 18 respondents, who are the opinion leaders of the selected communities, were purposively interviewed. For observation, some selected locations close to water sources in the 18 communities studied were observed using observer's diary.

### Measuring Instruments

Questionnaire, observer's diary and interview guide were respectively used to generate quantitative and qualitative data for this study.

### Reliability and Validity of Measuring Instruments

The reliability of the measuring instrument (questionnaire) was checked using test-retest method and the result showed reliability of 0.99 value. Below is the formula used for the

$$r_{xy} = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{\left[\left(\sum X^2 - \frac{(\sum X)^2}{n_x}\right)\left(\sum Y^2 - \frac{(\sum Y)^2}{n_y}\right)\right]}}$$

calculation : . 0.99 is high.

To establish the validity of the measuring instruments, copies of the questionnaire, observer's diary and interview guide were given to the project supervisor and three other scholars. Here, both content and face validity were obtained.

### Method of Data Analysis

Quantitative data collected through questionnaire were analysed using Statistical Package for the Social Sciences (SPSS) 16.0 while qualitative data collected through in-depth interview were discursively analysed.

## DATA PRESENTATION, ANALYSIS AND RESULT

### Data Presentation

In this section, both quantitative and qualitative data generated through questionnaire, interview and observation are presented and analyzed. These were presented in line with the research questions raised in the study. First, the demographic data are presented. Out of the 413 copies of questionnaire distributed, 392 copies were collected and analysed while 21 copies were not analyzed because some were not retrieved while some were damaged.

**Research Question One:** How often are rural people exposed to safe excreta disposal practice as captured in the safe excreta disposal campaigns?

Table 4.1 How often do hear that it is wrong to dispose excreta wrongly?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Always	87	22.2	22.2	22.2
Often	198	50.5	50.5	72.7
Occasionally	86	21.9	21.9	94.6
Rarely	18	4.6	4.6	99.2
Have never heard	2	.5	.5	99.7
Can't Remember	1	.3	.3	100.0
Total	392	100.0	100.0	

Information in table 4.1 shows the frequency at which the respondents heard that it was wrong to dispose excreta wrongly. The data reveal that 87, representing 22.2 percent Always hear that it is wrong to dispose excreta wrongly; 198, representing 50.5 percent Often hear that it is wrong to dispose excreta wrongly; 86, representing 21.1 percent occasionally hear that it is wrong to dispose excreta wrongly; 18, representing 4.6 percent Rarely hear that it is wrong to dispose excreta wrongly; 2, representing 0.5 percent have never heard that it is wrong to dispose excreta wrongly; while 1, representing 0.5 cannot remember whether they have heard that it is wrong to dispose excreta wrongly.

Table 4.2 From which channel to you often hear about the effect of wrong or unsafe excreta disposal?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Traditional media	23	5.9	5.9	5.9
Radio	56	14.3	14.3	20.2
Health workers	46	11.7	11.7	31.9
Newspaper/Magazine	3	.8	.8	32.7
Internet	1	.3	.3	32.9
Billboard	2	.5	.5	33.4
Handbills/flyers	6	1.5	1.5	34.9
Posters	8	2.0	2.0	37.0
TV	12	3.1	3.1	40.1
Family/Friends	123	31.4	31.4	71.4
School	104	26.5	26.5	98.0
Phone Text Messaging	5	1.3	1.3	99.2
Can't say	3	.8	.8	100.0
Total	392	100.0	100.0	

Table 4.2 shows the channel through which the respondents often hear about the effect of wrong or unsafe excreta disposal. The information shows that those that get information through traditional media were 23, representing 5.9 percent; those that gets from the radio were 26, representing 14.3 percent; those that gets from the health workers were 46, representing 11.7 percent; those that gets from newspapers/magazines were 3, representing 0.8 percent; those that gets from the Internet was 1, representing 0.3 percent; those that gets from

bill board were 2, representing 0.5 percent; those that gets from handbills/flyers were 6, representing 1.5 percent; those that gets from posters were 8, representing 2.0 percent; those that gets from TV were 12, representing 3.1 percent; those that gets from Family/Friends were 123, representing 31.4 percent; those that gets from the school were 104, representing 26.5 percent; those that gets from phone text messaging were 5, representing 1.3 percent; while those that didn't fall in any of these categories were 3, representing 0.8 percent. It therefore shows that those that got information from interpersonal channels were greater number.

**Research Question Two: What is rural people's level of knowledge on the dangers of unsafe excreta disposal?**

Table 4.3: Rate respondents' knowledge level on the dangers of unsafe excreta disposal based on series of questions asked earlier

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	74	18.9	18.9	18.9
	High	112	28.6	28.6	47.4
	Low	83	21.2	21.2	68.6
	Poor	67	17.1	17.1	85.7
	Undecided	56	14.3	14.3	100.0
	Total	392	100.0	100.0	

To ensure that respondents did not rate themselves when it comes to their knowledge on the subject matter, the researcher rated their knowledge level based on series of questions they answered. This was to ensure that there was no over rating or under rating by the respondents. From table 4.3 above, it was found that, 74 respondents representing 18.9 percent have a very high knowledge on the danger of unsafe excreta disposal; 112 respondents or 28.6 percent have a high knowledge of the danger of unsafe excreta disposal; 83 respondents representing 21.2 percent have a low knowledge of the dangers of unsafe excreta disposal; the knowledge level of 67 respondents or 17.1 percent is poor while for 56 respondents, the researcher could not rate their opinion because the respondents had no opinion or have never heard of excreta disposal. This rating analysis shows that a majority of the respondents a high knowledge on the issue of excreta disposal.

**Qualitative Analysis**

To supplement the findings made under this research question, the researcher conducted an interview to either support or refutes those of quantitative. The interview showed that majority of those interviewed were of the view that improper excreta disposal is dangerous to everyone's health in the community.

**Research Question Three: What is the attitude of rural people in South-East towards safe excreta disposal?**

Table 4.4: Rating respondent's attitude on the dangers of unsafe excreta disposal using series of questions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very high	66	16.8	16.8	16.8
	High	156	39.8	39.8	56.6
	Low	72	18.4	18.4	75.0
	Poor	53	13.5	13.5	88.5
	Undecided	45	11.5	11.5	100.0
	Total	392	100.0	100.0	

In other not to arrive at wrong response, the attitude of the respondents on unsafe excreta disposal was rated in table 4.4 based on series of questions asked earlier. Thus, the figure indicates that the attitude of 66 respondents representing 16.8% was rated very high, 156 respondents representing 39.8% were rated high, 72 respondents representing 18.4% were rated low, 53 respondents representing 13.5% were rated poor while 45 respondent representing 11.5% were undecided. The rating analysis indicates that majority of the respondents used in the study have a very positive attitude towards unsafe disposal of excreta.

**Qualitative Analysis Using Interview**

To further probe into the attitude of rural people on excreta disposal, an interview was held with community and opinion leaders in the 18 communities studied. The interview showed that a great majority of those interviews had a positive attitude towards safe excreta disposal.



**Research Question Four: What is the degree of safe excreta disposal practices among the rural residents in South-East?**

Table 4.5: To what extent have the health implications you heard comes with defecating or disposing excreta in open fields, nearby bushes, farmlands and in the stream or river influenced you into safe disposal of excreta

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid To a large extent	32	8.2	8.2	8.2
Moderately	57	14.5	14.5	22.7
Little extent	22	5.6	5.6	28.3
No influence at all	250	63.8	63.8	92.1
Can't say	31	7.9	7.9	100.0
Total	392	100.0	100.0	

From the data in the table above, 32 respondents representing 8.2 percent said that the health implications associated in defecating in open field and bushes have influenced in them; 57 respondents said they were influenced moderately; 22 respondents said they were influenced to a little extent, 250 respondents representing 63.8 respondents said they were not influenced, while 31 respondents representing 7.9 percent could not say whether they were influenced or not. This means that majority were not influenced.

Table 4.6: What are the major challenges stopping you from being afraid of the health implications of unsafe excreta disposal?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Absence of toilet facilities	109	27.8	27.8	27.8
Long held social norm	187	47.7	47.7	75.5
Fear of contacting diseases in toilet	73	18.6	18.6	94.1
Can't say	23	5.9	5.9	100.0
Total	392	100.0	100.0	

Data in the table above show that 109 respondents representing 27.8 percent defecate in the bush because of absence of toilet; 187 respondents representing 47.7 percent said it was because they were used to defecating in the open; 73 respondents said they did not want to contact diseases in the dirty toilets usually available while 23 respondents could not say why.

**Qualitative Analysis**

To support or refute the quantitative data generated through questionnaire, the researcher conducted an observation in some the 18 communities studied. It was observed that most households in the communities did not have toilets facilities. Among those with toilet facilities, there were cases of dirt and tendencies of contacting diseases because of the nature of the latrines.

**Test of Hypotheses**

**Hypothesis One: The level of knowledge of the rural people is dependent on their level of awareness about the health dangers of unsafe excreta disposal.**

**Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.170E2 <sup>a</sup>	20	.000
Likelihood Ratio	688.054	20	.000
Linear-by-Linear Association	307.476	1	.000
N of Valid Cases	392		

a. 14 cells (46.7%) have expected count less than 5. The minimum expected count is .14.

The test of hypothesis one revealed that Pearson Chi-Square has 14 cells with expected counts less 5, thereby nullifying Pearson Chi-Square tested result. However, Chi-Square Likelihood Ratio indicates that calculated value is at 688.054,p-value is at 0.000. This upholds the hypothesis that “the level of knowledge of the

rural people is dependent on their level of awareness about the health dangers of unsafe excreta disposal”.

**Hypothesis Two: There is a significant relationship between rural people’s level of knowledge about the health dangers of unsafe excreta disposal and their attitude towards safe disposal of excreta.**

**Correlations**

		Rate respondents' knowledge level on the dangers of unsafe excreta disposal based on questions 16-21	Rating respondent's attitude on the dangers of unsafe excreta disposal using questions 22-26
Rate respondents' knowledge level on the dangers of unsafe excreta disposal based on questions 16-21	Pearson Correlation Sig. (2-tailed) N	1  392	.948**  392
Rating respondent's attitude on the dangers of unsafe excreta disposal using questions 22-26	Pearson Correlation Sig. (2-tailed) N	.948** .000 392	1  392

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In the test of hypothesis two, Pearson correlation indicates that at p-value 0.000, correlation is significant at a high value of 0.948. This means that “there is a significant relationship between rural people’s level of knowledge about the health dangers of unsafe excreta disposal and their attitude towards safe disposal of excreta”.

**Hypothesis Three: There is a significant influence between rural people’s attitude towards safe disposal of excreta and their safe excreta disposal practices.**

**Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.938E2 <sup>a</sup>	16	.000
Likelihood Ratio	492.076	16	.000
Linear-by-Linear Association	206.078	1	.000
N of Valid Cases	392		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is 2.53.

The test of hypothesis three revealed that Pearson Chi-Square has 8 cells with expected counts less 5, which means that Pearson Chi-Square test result shows no significant influence. Hence, the researcher adopted the null hypothesis which holds that “there is no significant influence between rural people’s attitude towards safe disposal of excreta and their safe excreta disposal practices”.

**Discussing of Findings**

**Research Question One: How often are rural people exposed to safe excreta disposal practice as captured in the safe excreta disposal campaigns?**

In this research question, the researcher sought to find out the frequency at which respondents in the 18 communities selected for the study were exposed to safe excreta disposal campaigns in their respective communities. The quantitative data collected showed that majority of the respondents (389, representing 99.2 percent) have heard that it was wrong to dispose excreta wrongly and 50.5 percent of them hear this often. This shows that the awareness level of the respondents is quite high.

This finding is supported by the findings of Nwike, (2011) which revealed that the most significant thing is that, when accessible, the needed awareness on the hazards of pollution should be created in the rural areas.

**Research Question Two: What is rural people’s level of knowledge on the dangers of unsafe excreta disposal?**

In this research question, the researcher sought to find out the respondents’ knowledge level on the dangers of indiscriminate disposal of excreta. A rating analysis was done to ascertain exactly the respondents’ knowledge level based on the series of questions they answered which the researcher believed were enough to check their knowledge level. The rating analysis showed that majority of the respondents used in the study have a good knowledge of the danger associated with indiscriminate disposal of both human and animal excreta. The qualitative data generated from 18 opinion leaders in the communities used, showed that improper excreta disposal is dangerous to everyone’s health in the community. This finding is supported by a similar finding

reached in a study conducted in Kintampo North District of the BrongAhafo region of Ghana by Okechukwu, O.I, Okechukwu, A.A., Noye-Nortey H and Owusu-Agyei in 2012 where it was established that the knowledge of household heads in relation to health effects of poor waste disposal is high.

**Research Question Three: What is the attitude of rural people in South-East towards safe excreta disposal?**

In this research question, the researcher sought to find out the attitude of the respondents toward safe excreta disposal. Both quantitative and qualitative analyses done revealed that majority of the respondents have a positive attitude about safe excreta disposal. The quantitative data generated from questionnaire indicate that a great majority of the respondents believe that it is unsafe to dispose excreta in the bush, open field, farmland and streams. Specifically, the rating analysis done revealed that 16.8 percent and 39.8 percent have very high and high attitude towards excreta disposal respectively. In the whole, 56.6 percent (39.8 +16.8) of the respondents have positive attitude toward excreta disposal.

The qualitative data generated through interview held with the 18 opinion leaders in the studied communities showed that everyone has a positive attitude towards safe excreta disposal. This finding is supported by a similar finding made by R Radha in 2012 where he observed that the respondents used in the survey had good knowledge and attitude towards disposal.

**RESEARCH QUESTION FOUR: What is the degree of safe excreta disposal practices among the rural residents in South-East?**

In research question four, the researcher sought to find out the safe excreta disposal practices of South East rural residents. The quantitative data generated through questionnaire revealed that majority of the respondents have maintained the idea of defecating in open field, bushes, farmland and streams. Most of them attributed the act to lack of toilet facilities. However, most of them said they were comfortable defecating in the bush and that they were used to it. Observation done in all the communities showed that majority of the respondents were still defecating in open fields and bushes. It is shocking to discover that though the residents had positive attitude towards disposal, they had negative disposal practices. This study is also supported by the finding of R Radha in 2012. He observed that though the respondents used in the survey had good knowledge and attitude towards disposal, they lacked good safe waste disposal practices.

Again, both quantitative and qualitative data generated showed that some of the problems inhibiting change of attitude on disposal of excreta include lack of toilet, tradition of going to the bush, fear toilet related infections and other.

**Hypothesis Results**

The test of the hypotheses revealed that there is significant relationship between exposure and knowledge about the dangers of unsafe excreta disposal. Again, the hypothesis showed that there is a relationship between knowledge about the dangers of excreta disposal and rural peoples' attitude. However, the last hypothesis revealed that there is no relationship between attitude and practices.

**Summary of Findings**

1. Rural people in South East Nigeria are exposed to safe excreta disposal campaigns.
2. The knowledge level of South East residents on the dangers of indiscriminate disposal is high.
3. Great majority of information on safe excreta disposal comes from the interpersonal channels (schools and homes).
4. South East residents have a positive attitude towards safe excreta disposal.
5. However, it was found that the safe excreta disposal practice of rural residents of South east is very poor as majority of them still dispose excreta dangerously.
6. The major problem inhibiting safe excreta practices among rural residents are long held attitude of going to the bush and open field to defecate, lack of toilet facilities and fear of contracting diseases in the toilet.

**Conclusion**

1. Most rural residents are aware of the dangers of unsafe excreta disposal.
2. A good majority are also knowledgeable about the unhealthy practices
3. Most of their information comes from the schools and homes.
4. Most Nigerians have positive attitude towards excreta disposal.
5. However, most of them still practice unsafe excreta disposal.

**Recommendations**

Based on the findings made and the materials reviewed, the research recommend as follows:

It was recommended that the current safe excreta campaigns by UNICEF and WHO should be redesign for efficiency using the fear appeal strategy. This is because the current campaigns failed to emphasis the health dangers inherent in unsafe disposal. The fear appeal strategy has been proven to be effective by health promotion

theorists.

Local governments executives in Nigeria should as a matter of urgency, implement the existing environmental laws in their respective states. This is because sanitations enforcement powers even lie with the local governments. State government and non-governmental organisations can also help to ensure enforcement. The local councils can also help to build toilet facilities in homes, schools and market places. However, facilities must be maintained at all times. Before such enforcement, all relevant bodies in Nigeria should step up safe excreta disposal campaigns in schools, in worship centres and in the media. The campaigns should emphasize the health dangers of unsafe excreta disposal.

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