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Environmental sanitation: A tool for improving the quality of health among families in Owerri-Ebeiri, Orlu Imo state

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Keywords

sanitation is, health education, environmental sanitation, sewage disposal, transmission of diseases.

Abstract

The area where the researcher carried out the study was Owerre Ebeiri L.G.A Imo State. The aimed to ensure that sanitation is used as a tool to improve the quality of health in, Owerre-Ebeiri through health education and community mobilization. The result in table 1 shows that the age groups between 30 - 39 years (60%) were the highest participants in the study, followed by those aged 20 – 29 years (30%), and then the age group with the least participation is the participants within the age group 40 - 49 years (10%). The result reports that there were more married women (53.5%), followed by participants that are widowed (25.5%), then participants that are single (16.5%) while the least participants are divorced (4.5%). The result showed that the participants were mostly civil/public servants (50.5%), followed by farmers (30%), then about 15% were traders while the rest of 4.5% were housewife. The result showed that the participants were mostly respondents with tertiary education degree (40.5%), followed by respondents with secondary school education (29.5%), then about 26.5% with primary school education while the least participants were those with no formal education (3.5%). The result shows that there were more Christians (65%) that participated in the study followed by the traditionalist accounting about 30% of the study then the least participants were the Muslim accounting only about 5% of the study. The result shows that the Igbos dominate in this study area as the result account about 68% of the participants are Igbos, followed by the Hausa (22.5%) then the Yoruba (9.5%). The result accounts that the majority being 100 (50%) of the respondents were of the view that clearing of bush environment, disposing of dirt and stagnant water, and covering of pot holes and gutters makes up environmental sanitation while about 60 (30%) of the respondents were of the view that environmental sanitation means clearing of bushy environment, 30 (15%) of the respondents were of the view that disposing of dirt and stagnant water, and the least participants being about 10 (5%) were of the view that covering of pot holes and gutters is what environmental sanitation is all about. The result discloses that about 80 (40%) of the respondents choose dumping in front of gate as a practice while the others being about 50 (25%), 10 (5%), 60 (30%) of the respondents chooses incineration, composting and sanitary landfill as a method of refuse disposal respectively. The result discloses that about 90 (45%) of the respondents agreed on ventilated improved pit (VIP) latrines as one of the sanitary method of sewage disposal while bucket latrine have the lowest response accounting about 10% who opted for it. There is a clear knowledge of environmental sanitation and the methods of refuse and sewage disposal practiced by participants in Owerri Ebeiri in Orlu LGA of Imo State includes majority practicing dumping in front of the gate, followed by the act incineration,

composting and sanitary landfill as a method of refuse disposal. Factors that contribute to poor environmental sanitation and its effect on quality health includes lack of environmental sanitation which can lead to transmission of diseases such as cholera, diarrhoea, hepatitis A, typhoid, dysentery, skin diseases and malaria.

Introduction

Environmental sanitation could be seen as the principle and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment (Alabi, 2010).

Lack of sanitation refers to the absence of sanitation. In practical terms, it usually means lack of toilets or lack of hygienic toilets that anybody would want to use voluntarily. The result of lack of sanitation is usually open defecation and open urination with the associated serious public health issues. The effects of poor environmental sanitation are numerous and linked to transmission of diseases such as cholera, diarrhea, dysentery, hepatitis A, polio and economic disadvantages as well as social disadvantages.

Often man is responsible for the pollution of his environment through urbanization, industrialization and other human activities (WHO, 2012). Man's total environment includes the living and non-living elements in his surroundings. Man's relationship to his environment is reciprocal, in that the environment has a profound influence on man while, at the same time, man extensively alters his environment to suit his ends and desires. Therefore, it is now realized that development and / or improvement that does not take "the environment" into consideration is self-defeating. The key to man's health lies largely in his environment. In its modern concept, environment includes not only water, air and soil but also the social and economic conditions under which we live (Park, 2011).

According to the National Sanitation Foundation of U.S.A, the word sanitation is defined as a "way of life that is expressed in the clean home, farm, business, neighborhoods and community (Park, 2011).World health organization (WHO) defined sanitation as the provision of facilities and services for the safe disposal of human urine and faeces (UNICEF and WHO, 2012). Hence, inadequate sanitation is a major cause of disease and improving sanitation is known to have a significant beneficial impact on health both in households and across communities.

The "environment is the life supporting system for human existence". Ever increasing industrialization, urbanization and lack of planning have been polluting the environment with adverse effect on human health. Also advancement in science and technology, industrial revolution and population explosion all combined to increase the amount of pollutants generated in the environment posing serious threat to human health, disease in Owerre-Ebeiri and a major health problem in most of the countries especially in the tropics (Alakija, 2012).

The main objective of this study is to ensure that sanitation is used as a tool to improve the quality of health in, Owerre-Ebeiri through health education and community mobilization.

Materials and Methods

Research Design

In this study, a survey study called descriptive survey design was used.

Study area

The area where the researcher carried out the study was Owerre Ebeiri L.G.A Imo State.

Target Population

The Target Population of the study comprises of seven (7) villages in Owerre Ebeiri which comprises of parents (male and female) within the age range of 20-60 years and had lived in the community for at least 3 years. Their target population is 400 (National Population Census 2016).

Table a: Village/Communities Distribution

S/N	Villages / Communities	Number of people
1	Eluama	50
2	Okworji	100
3	Umuokekpu	60
4	Umuegbe	36
5	Umuduru	55
6	Umuebidike	28
7	Ndimbara	71
	Total	**400**

Source: National Population Census (2016)

Sampling Size

To select the sample size, the researcher adopted Taro Yamane (1967) method, Chinweuba, Iheanacho & Agbapuonwu (2013). Below is the Mathematical illustration for the Taro Yamane method:

$$n = \frac{N}{(1 + N (e)^2)}$$

where:
n Signifies the sample size
N Signifies the population under study
e Signifies the margin error (it could be 0.10, 0.05 or 0.01)

$$n = \frac{N}{(1+N (e)^2)}$$

$$n = \frac{400}{(1 + 400 (0.05)^2)}$$

$$n = \frac{400}{(1 + 400 (0.0025)}$$

$$n = \frac{400}{(1 + 1)}$$

$$n = \frac{400}{2}$$

n = 200

Therefore, the sample size is 200

Sampling Technique

Sampling technique is a strategy mapped out by a researcher in order to select elements of members for a study. The researcher used simple random sampling technique where the researcher makes sure that each member in that population has an equal chance to be selected. No number of the population was exempted in the selection.

Instrument for Data Collection

The Instrument used was questionnaire. It is a carefully structured statement of questions designed by a researcher and distributed to the respondent to obtain in writing some factual information. It is the commonest instrument used by the researcher in eliciting responses from subjects.

The questionnaires used were both open-ended and closed allowing the respondents to comment freely and choose from a pre – determined option where necessary. The questionnaire was divided into two sections: [A] was on Demographic data while section (B); probing questions on the Environmental sanitation a tool for improving quality of life.

Method of Data Collection

Data was collected with the aid of questionnaires. The questionnaires were self administered by the researcher to the respondent. Rapport was created with the respondents and the content of the questionnaires was properly explained to the respondents. The researcher distributed 200 questionnaires to the respondents. The questionnaire were filled by the respondents and collected back by the researcher for analysis. This is because the researcher went on a day that is convenient for them. This ensures high return rate.

Method of Data Analysis

Data was analyzed using descriptive techniques such as: tables and charts.

Ethical Consideration

A letter of Permission was written to the Eze (Traditional Ruler) of the community for his permission to carry out the study and he gave his permission. So the researcher put into consideration the integrity of the respondents. Before administering the questionnaire, the respondents were gathered together, greeted and were politely addressed in a way they understood better. The researchers seek their consent, explained the content to them and even showed them the coverage letter to understand the value of the research. The researcher observed their attitudes and assured them that all information given will be treated confidentially and also their images will be protected from harm & danger. They were instructed not to include their names. The researchers having considered human complexity and moral issues decided to allow the respondents turn up voluntarily.

Results

Demographic Data of Respondents

Table 1: Respondent's Age Distribution

Age Group	Frequency	Percentage
20-29	60	30
30-39	120	60
40-49	20	10
50-59	0	0
Total	200	100

Source: Field Work, 2018

The result in table 1 shows that the age groups between 30 - 39 years (60%) were the highest participants in the study, followed by those aged 20 – 29 years (30%), and then the age group with the least participation is the participants within the age group 40 - 49 years (10%). This indicates that the participants mostly studied were mostly matured persons. See figure 1 for a graphical representation of the result.

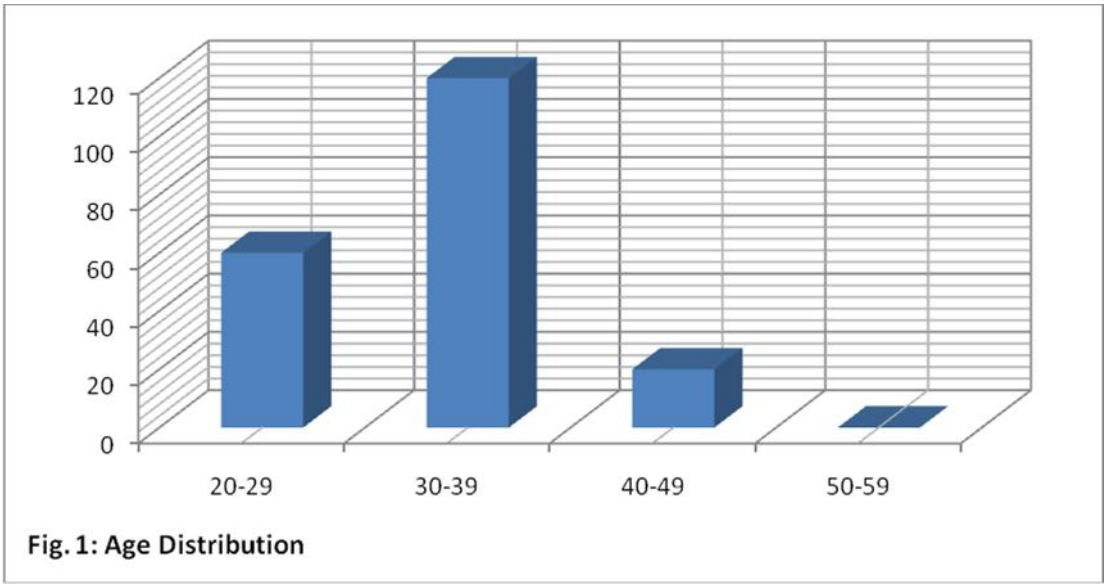

Fig. 1: Age Distribution

Table 2: Respondent's Marital Status Distribution

Marital Status	Frequency	Percentage
Single	33	16.5
Married	107	53.5
Divorced	9	4.5
widowed	51	25.5
Total	200	100

Source: Field Work, 2018

The result in table 2 presents the marital status of the respondents. The result reports that there were more married women (53.5%), followed by participants the that are widowed (25.5%), then participants that are single (16.5%) while the least participants are divorced (4.5%). See chart in figure 2 below for a graphical representation of the result.

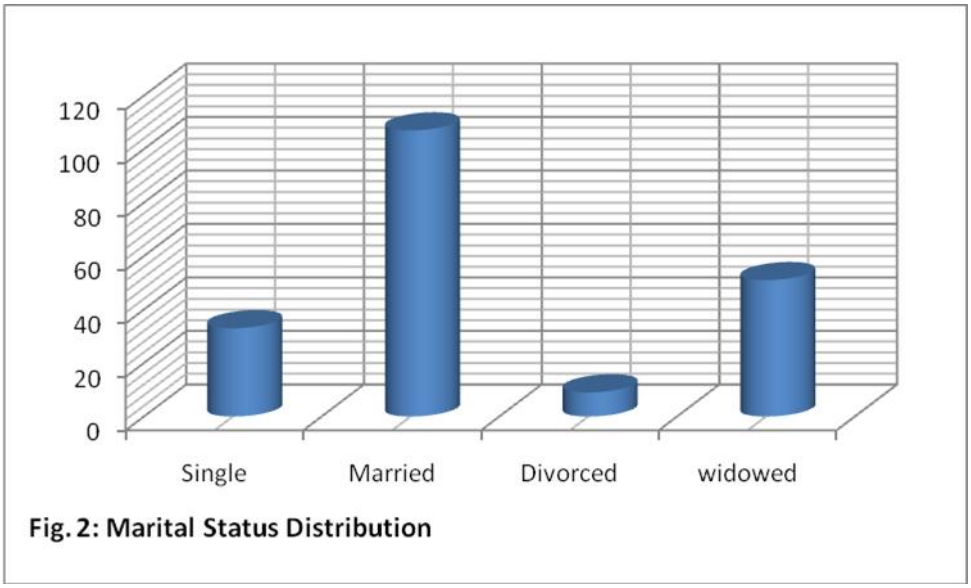

Fig. 2: Marital Status Distribution

Table 3: Respondent's Occupational Distribution

Occupation	Frequency	Percentage
Housewife	9	4.5
Civil/Public servants	101	50.5
Traders	30	15
Farmers	60	30
Total	200	100

Source: Field Work, 2018

Table 3 presents the occupational distribution of the respondents. The result showed that the participants were mostly civil/public servants (50.5%), followed by farmers (30%), then about 15% were traders while the rest of 4.5% were housewife. See a graphical representation of the result in figure 3 below.

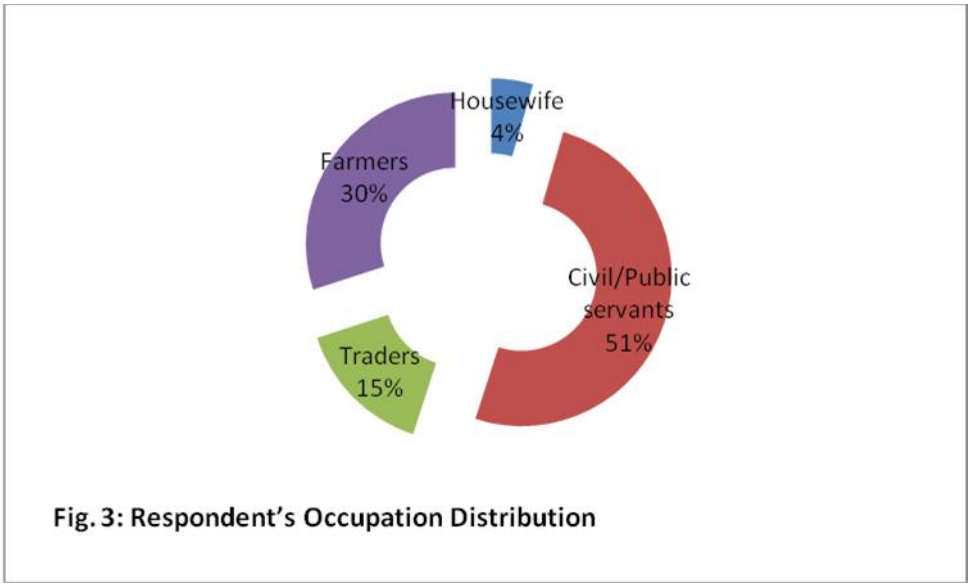

Fig. 3: Respondent's Occupation Distribution

Table 4: Respondent's Educational Qualification Distribution

Educational Qualification	Frequency	Percentage
No formal education	7	3.5
primary education	53	26.5
secondary education	59	29.5
tertiary education	81	40.5
Total	200	100

Source: Field Work, 2018

Table 4 presents the highest educational qualification of the respondents. The result showed that the participants were mostly respondents with tertiary education degree (40.5%), followed by respondents with secondary school education (29.5%), then about 26.5% with primary school education while the least participants were those with no formal education (3.5%). See a graphical representation of the result in figure 2 below.

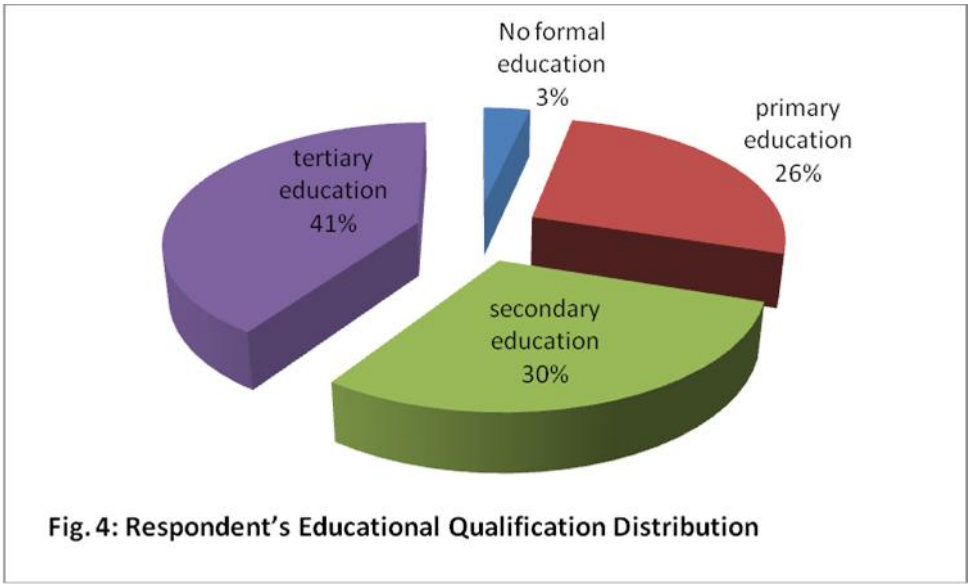

Fig. 4: Respondent's Educational Qualification Distribution

Table 5: Respondent's Religion Distribution

Religion	Frequency	Percentage
Christianity	130	65
Islamic	10	5
Traditional	60	30
Total	200	100

Source: Field Work, 2018

The result in table 5 presents the religion distribution of the respondents. The result shows that there were more Christians (65%) that participated in the study followed by the traditionalist accounting about 30% of the study then the least participants were the Muslim accounting only about 5% of the study. See chart in figure 3 below for a graphical representation of the result.

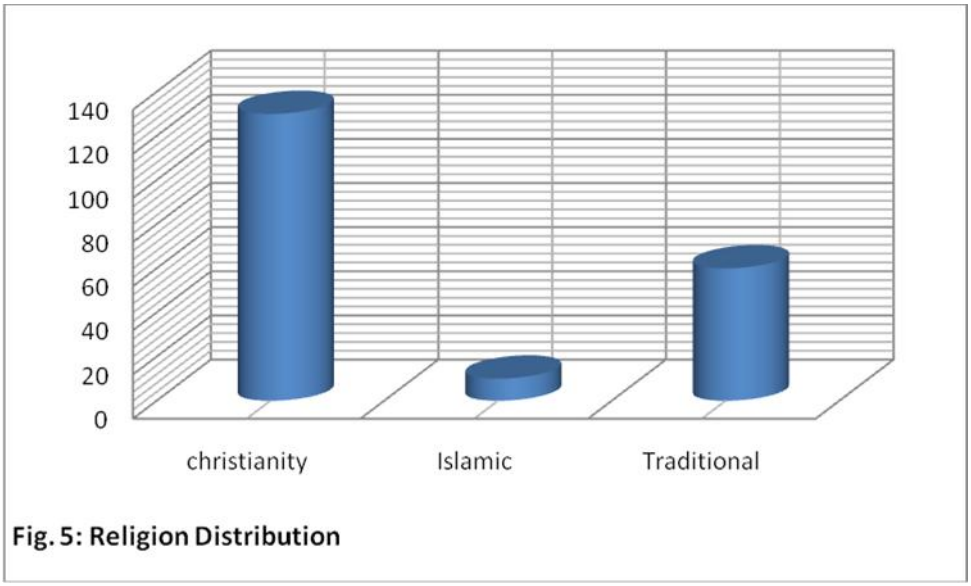

Fig. 5: Religion Distribution

Table 6: Ethnic Group of Respondents Distribution

Ethnic Group	Frequency	Percentage
Igbo	136	68
Yoruba	19	9.5
Hausa	45	22.5
Total	200	100

Source: Field Work, 2018

This result in table 6 presents the respondents ethnicity. The result shows that the Igbos dominate in this study area as the result account about 68% of the participants are Igbos, followed by the Hausa (22.5%) then the Yoruba (9.5%). See a graphical representation of the study in figure 6 below.

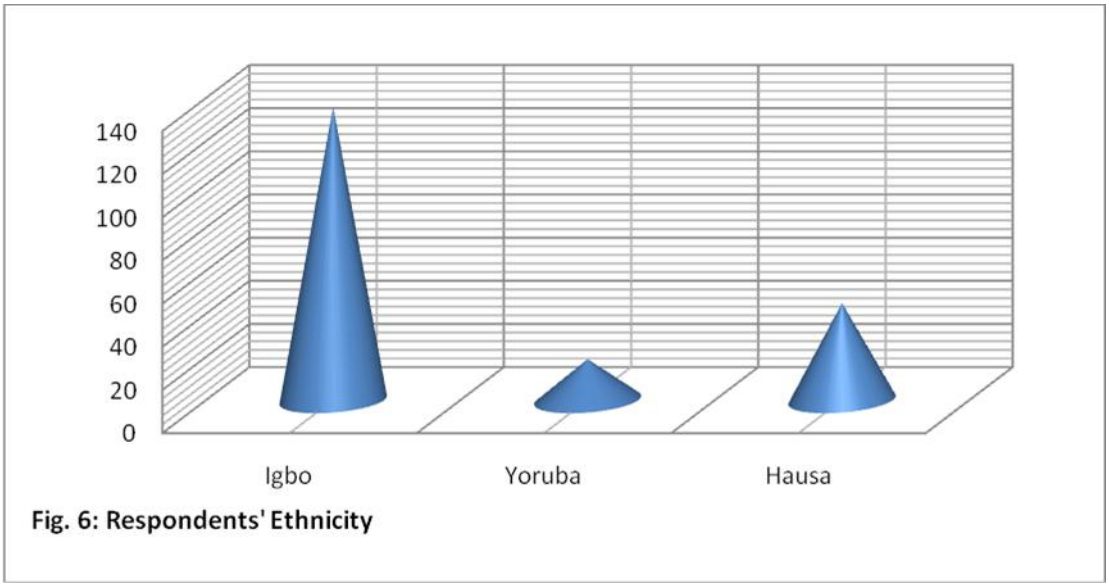

Fig. 6: Respondents' Ethnicity

Table 7: Environmental sanitation understanding

Options	Frequency	Percentage
Clearing of bush environment	60	30
Disposing of dirt and stagnant water	30	15
Covering of pot holes and gutters	10	5
All of the above	100	50
Total	200	100

Source: Field Work, 2018

Table 7 above showed the understanding and knowledge of the respondents on environmental sanitation. The result accounts that the majority being 100 (50%) of the respondents were of the view that clearing of bush environment, disposing of dirt and stagnant water, and covering of pot holes and gutters makes up environmental sanitation while about 60 (30%) of the respondents were of the view that environmental sanitation means clearing of bushy environment, 30 (15%) of the respondents were of the view that disposing of dirt and stagnant water, and the least participants being about 10 (5%) were of the view that covering of pot holes and gutters is what environmental sanitation is all about. A graphical representation of the study is presented in figure 7 below.

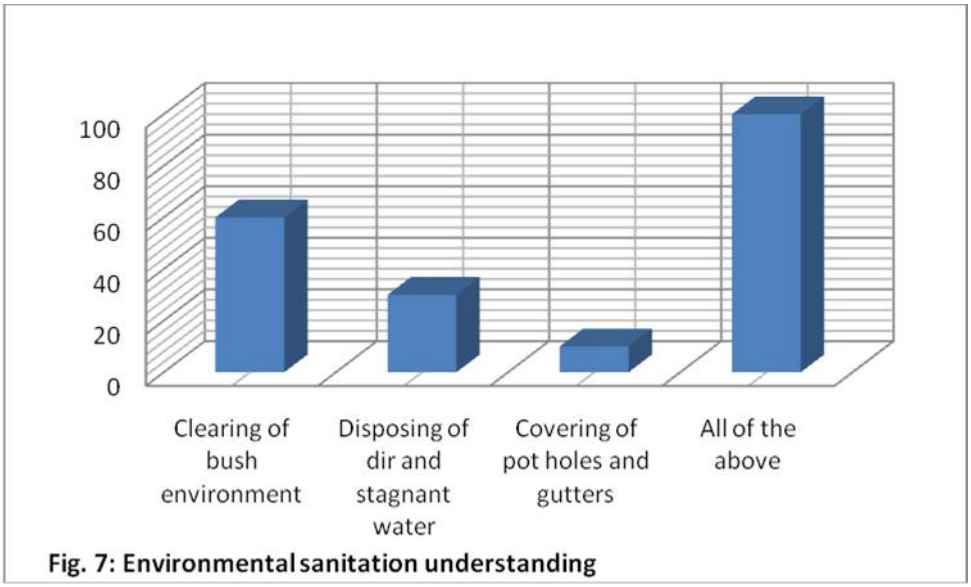

Fig. 7: Environmental sanitation understanding

What are the methods of refuse disposal?

Table 8: The following are methods of refuse disposal practiced by the respondents

Options	Frequency	Percentage
Incineration	50	25
Composting	10	5
Sanitary landfill	60	30
Dumping in front of gate	80	40
Total	200	100

Source: Field Work, 2018

The result in table 8presents the respondents view of methods of refuse disposal practiced by the respondents. The result discloses that about 80 (40%) of the respondents choose dumping in front of gate as a practice while the others being about 50 (25%), 10 (5%), 60 (30%) of the respondents chooses incineration, composting and sanitary landfill as a method of refuse disposal respectively. See a chart in figure 8 below representing the result.

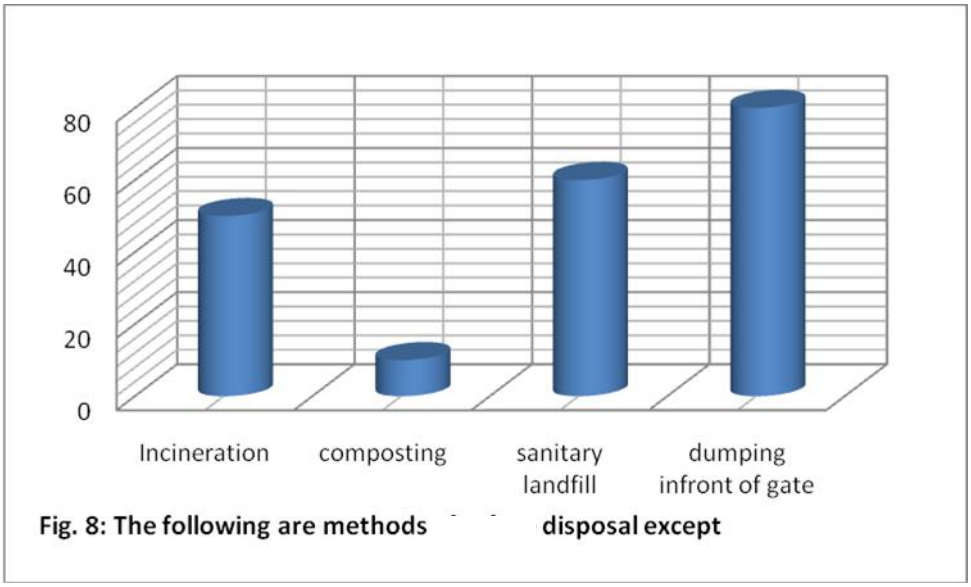

Fig. 8: The following are methods disposal except

Table 9: A method of waste disposal

Options	Frequency	Percentage
Incineration	107	53.5
Recycling	33	16.5
Sanitary landfill	60	30
bush method	0	0
Total	200	100

Source: Field Work, 2018

The result in table 9 presents method of waste disposal in Owerre Ebeiri in Orlu LGA of Imo State. The result in table 9 shows that about 107 (53.5%) of the respondents were of the view that incineration is more practiced in this location, followed by sanitary land filling which accounted about 30% of the responses and about 16.5%said recycling. See a graphical representation of the result in figure 9 for a clearer illustration.

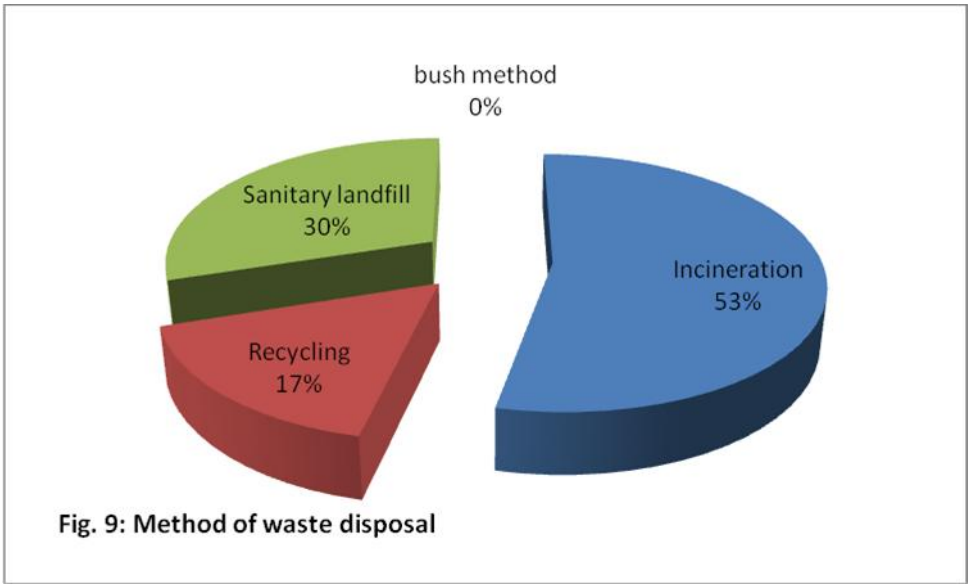

Fig. 9: Method of waste disposal

Table 10: Sanitary method of sewage disposal

Options	Frequency	Percentages
Open dumping	45	22.5
Ventilated Improved Pit (VIP) latrines	90	45
Bucket latrines	20	10
Bush method	45	22.5
Total	200	100

Source: Field Work, 2018

The result in table 10 presents the respondents opinion on sanitary method of sewage disposal. The result discloses that about 90 (45%) of the respondents agreed on ventilated improved pit (VIP) latrines as one of the sanitary method of sewage disposal while bucket latrine have the lowest response accounting about 10% who opted for it. Open dumping and bush methods accounted for 45 (22.5%) and 45 (22.5%) respectively. See a graphical representation of this result in figure 10 below.

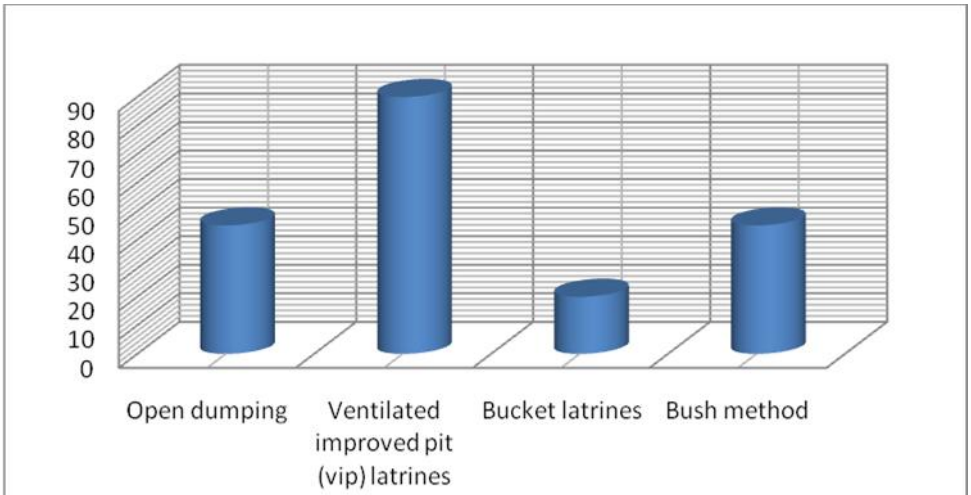

Fig. 10: Sanitary method of sewage disposal

Table 11: Method of sewage disposal used in homes

Options	14	Percentages
Bucket latrines	20	10
Bush method	50	25
Ventilated improved pit (VIP) latrines	100	50
Open dumping	30	15
Total	200	100

Source: Field Work, 2018

The result in table 11 presents the methods of sewage disposal used in homes. The study showed that about50% of the respondents make use ofventilated improved pit (VIP) as the most sanitary method of sewage disposal, 50 (25%) of them reported bush method as a disposal method they used in homes, 30 (15%) used open dumping while the least practice is the use of bucket latrines which accounted for 20 (10%) of the respondents. See a chart in figure 11 below to represent to illustrate the result.

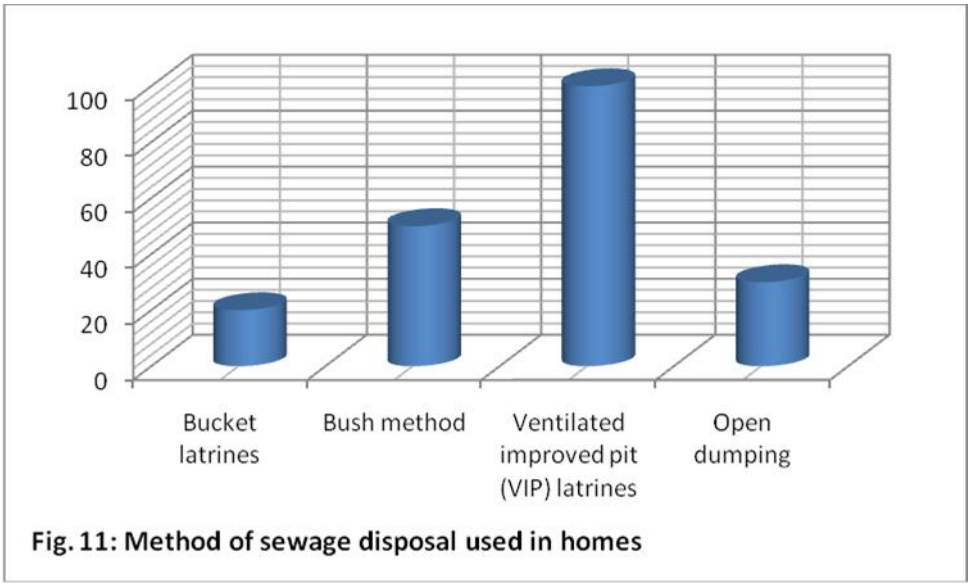

Fig. 11: Method of sewage disposal used in homes

Table 12: Factors contributing to poor environmental sanitation and its effect on quality of health

S/No.	Options	SA	A	D	SD	Mean	Stand. Dev.
1	Threatened environments population densities and inadequate finances are some of the challenges facing proper sanitation management	60	90	40	10	3	0.839
2	The absence of adequate sanitation has a serious impact on health and social development especially for children	71	83	23	23	3.01	0.967
3	Lack of environmental sanitation can lead to transmission of diseases such as cholera, diarrhoea, hepatitis A, typhoid, dysentery, skin diseases and malaria	80	120	0	0	3.4	0.491
				Mean		3.14	0.722

Source: Field Work, 2018

The result in table 12 presents the factors contributing to poor environmental sanitation and its effect on quality of health. The result presents a grand mean of 3.14 with a standard deviation of 0.722 which indicates that the respondents are in agreement. The result further discloses that the majority of the respondents agreed to the fact that lack of environmental sanitation can lead to transmission of diseases such as cholera, diarrhoea, hepatitis A, typhoid, dysentery, skin diseases and malaria (3.4 ± 0.491). The absence of adequate sanitation has a serious impact on health and social development especially for children (3.01 ± 0.967) while tthreatened environments population densities and inadequate finances are some of the challenges facing proper sanitation management (3.00 ± 0.839).

Table 13: Control Methods

Options	TRUE	%	FALSE	%	Total
Hand washing with soap all times can help to control poor environmental sanitation	120	60	80	40	200
Food waste should be disposal of immediately or stored in a closed container before disposal to discourage the presence of flies	180	90	20	10	200
Prevention of human contact with human faeces as well as proper disposal of sewage and waste can help poor environmental sanitation	200	100	0	0	200

Source: Field Work, 2018

The result in table 13 indicates that the entire respondents were of the view that prevention of human contact with human faeces as well as proper disposal of sewage and waste can help poor environmental sanitation. About 90% of the respondents also were of the view that food waste should be disposed of immediately or stored in a closed container before disposal to discourage the presence of flies followed by regular hand washing with soap should be practice accounting about 60% of the study.

Discussion

The study established that majority of the respondents have a clear knowledge of environmental sanitation as the result indicates that they were of the view that clearing of bush environment, disposing of dirt and stagnant water, and covering of pot holes and gutters makes up environmental sanitation. This finding agrees with the findings of Reshma *et al.* (2016) whose findings discloses that their study showed that majority had average knowledge of environmental sanitation but still in their study, majority of the respondents followed unsafe practices on water, sanitation and hygiene. Also in support with the opinion of Dube and January(2012) whose reports report that despite the progress made worldwide in recent decades in the area of water and sanitation, more than 2.3 billion people still live without access to sanitation facilities and some are unable to practice basic hygiene.

From the findings in the study, it has been found that the various methods of refuse and sewage disposal practiced by participants in Owerre Ebeiri in Orlu LGA of Imo State includes majority practicing dumping in front of the gate, followed by the act of incineration, composting and sanitary landfill. The study further showed that incineration as a method of waste disposal is more practiced in this location, followed by sanitary landfilling then finally recycling as the least practice of refuse disposal. The sanitary method of sewage disposal practiced in Owerre Ebeiri, Orlu LGA in Imo State is mostly ventilated improved pit (VIP) latrines while bucket latrine is the least sanitary method of sewage disposal practiced in Owerre Ebeiri, Orlu LGA in Imo State. They further reported that the sewage disposal used in their homes are mostly ventilated improved pit (VIP), while only few use bush method and open dumping. Very few make use of bucket latrines as a method of sewage disposal at homes.

This study is in line with the findings of Reshma *et al.* (2016) and Dube and January (2012) whose findings disclose that respondents disclose unsafe practices on water, sanitation and hygiene.

The findings from the study discloses that the major factors that contribute to poor environmental sanitation and its effect on quality health includes lack of environmental sanitation which can lead to transmission of diseases such as cholera, diarrhoea, hepatitis A, typhoid, dysentery, skin diseases and malaria. The absence of adequate sanitation has a serious impact on health and social development especially for children while threatened environments population densities and inadequate finances are some of the challenges facing proper sanitation management. This findings support Olajide (2014) report that households in Katsina metropolis dispose their solid wastes in vacant or unused plots, back of homes, along the road and drains among others.

The result finding of the study discloses that the major methods of controlling poor environmental sanitation include prevention of human contact with human faeces as well as proper disposal of sewage and waste. The respondents further suggested that food waste should be disposed of immediately or stored in a closed container before disposal to discourage the presence of flies. Finally, they are also of the view that regular habit of hand washing with soap should be practiced. This finding is in addition to Olajide (2014) strategies which reports that implementation of national environmental sanitation policy provision and use of waste disposal facilities, inculcation of right attitudes in householders/homemakers on waste disposal through the introduction of environmental education in primary and post primary schools curriculum, were identified to improve environmental sanitation practices.

In the course of the study, it was observed that the people of Owerre- Ebeiri have the knowledge of Environmental sanitation but sometimes do not practice it due to one reason or the other.

So there is need for Nurses / Midwives to give basic health education specifically through proper enlightment programme to highlight the public to have a better understanding of Environmental sanitation and effects of its negligence in human lives. These will help the people of Owerre-Ebeiri to develop a positive attitude towards Environmental sanitation thus, help in reducing mortality and morbidity rate and cub common communicable diseases.

Conclusion

There is a clear knowledge of environmental sanitation and the methods of refuse and sewage disposal practiced by participants in Owerri Ebeiri in Orlu LGA of Imo State includes majority practicing dumping in front of the gate, followed by the act incineration, composting and sanitary landfill as a method of refuse disposal. The study further showed that incineration is more practiced in this location, followed by sanitary landfilling then finally recycling as the least practice of refuse disposal.

The sanitary method of sewage disposal practiced in Owerre Ebeiri, Orlu LGA in Imo State is mostly ventilated improved pit (VIP) latrines while bucket latrine is the least sanitary method of sewage disposal practiced in Owerre Ebeiri, Orlu LGA in Imo State. The study also discloses that the sewage disposal used in their homes are mostly ventilated improved pit (VIP), while only few use bush method and open dumping. Very few make use of bucket latrines as a method of sewage disposal at homes.

Factors that contribute to poor environmental sanitation and its effect on quality health includes lack of environmental sanitation which can lead to transmission of diseases such as cholera, diarrhoea, hepatitis A, typhoid, dysentery, skin diseases and malaria. The absence of adequate sanitation has a serious impact on health and social development especially for children while tthreatened environments

population densities and inadequate finances are some of the challenges facing proper sanitation management.

Methods of controlling poor environmental sanitation include prevention of human contact with human faeces as well as proper disposal of sewage and waste. Food waste should be disposed of immediately or stored in a closed container before disposal to discourage the presence of flies. Finally, regular habit of hand washing with soap should be practiced.

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