

Awareness of Environmental Hazards of Black Soot Induced by Illegal Oil Refiners in Aleto Community in Eleme Local Government Area of Rivers State

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Abstract

This study was carried out on black soot pollution induced by illegal oil refiners in Aleto Community in Eleme Local Government Area of Rivers State. To achieve the aim of this study, three objectives were formulated. Descriptive research design was used for the study. The population of the study comprises of all members of Aleto community, and a sample size of 260 respondents was selected from the total population. A structured questionnaire was used for the study. Data collected were analyzed using frequency tables and percentage. Results from findings showed that the attitude of the people in Aleto contributed to black soot pollution to the environment. Hence, the researcher recommended that environmental impact assessment should be carried out before any development in order to prevent the occurrence of black soot, also sensitization and education of the public on the dangers of some of the activities on the environment by government and non-governmental agencies should be carried out.

Keywords: pollution, environmental hazards, black soot, illegal refineries

INTRODUCTION

Environmental health hazard occurs when pollutants are discharged directly into the air without adequate treatment to remove environmental health hazard and it affects the human health which can induce a higher level of air pollutant by damaging not only individual species and the environment, but also the natural biological communities in Eleme Local Government Area as a major global problem that can lead to nasal diseases, acute disease.

When the environment gets contaminated due to the presence of various pollutants, it becomes dangerous for living beings and causes several diseases with harmful effects when consumed in different ways (WHO, 2001).

Various illegal oil refining activities are one of the major contributors of black soot pollution in Aleto in Eleme Local Government Area of Rivers State. The industrial discharges in various forms such as particulate matters, harmful chemicals, dust and cloudy smoke emission which are irritating and poisonous to human's health are the main source of black soot pollution in the environment. The word pollution is a qualifying adjective to describe the condition or the state of the environment in terms of its purity.

It is a broad dependable variable which appears and disappears in other factors as the environment is being manipulated by independent, industrial variable. Achalu (2014) stated that pollution is any unwanted contaminant in the environment that may be detrimental to human health. He concluded that environmental soot pollution is any undesirable change or addition to the environment that has the potential of harming or threatening human beings and other living things in the ecosystem.

Horsefall and Spitt (2018) further explained that black soot pollution is due to by-product of man's actions, through direct or indirect changes in industrial pattern, radiation

level, chemical and physical constitution and abundance of living organisms. The environmental health hazard and health implication as a result of soot pollution covers the entire gamut man; these implications depend on the type of black soot pollution and available protection to prevent unwanted diseases in environment. No polluted part of the environment is health promoting to man and the environment itself, it is detrimental in all facets in terms of denial of man of good environment, air and good food thereby promoting disease occurrence, sad and unfulfilled life span and ambition and eventual untimely death in the environment. Environmental black soot pollution gives rise to various health hazards and some times results into life threatening diseases in the environment. Nowadays, one of the major sources of environmental health hazard is emission from industrial unit in Aleto in Eleme Local Government Area Rivers State known as industrial black soot pollution.

Newton (2018) states that industrial emission act as an agent for polluting the air and the environment; natural and man-made factors are largely responsible for this. As the population is increasing, new sites are being set up to meet the various demands of human beings which in turn gives rise to this problem in Aleto, Eleme Local Government Area of Rivers State.

The research and studies carried out to determine toxicity of this environmental black soot pollution focused on the environment. Health is wealth and a healthy nation is a wealthy one. There are a lot of problems arising from handling the environment as a result of interaction between man and his environment which if not looked into, will cause serious problem to the public. The need for more environmental health education could be seen also as a tool needed in changing the attitude of citizens and public towards the improvement of the environment in order to prevent environmental health hazards caused by black soot pollution to environment. According to Ashley (2014), Nigerians do not know how or where they dispose their waste products as long as they get rid of waste from their place of work or home, they believe that cleanliness of the environment is the responsibility of the government. Therefore, waste products can be dumped anyhow for government to collect and dispose to the appropriate dumping sites to prevent environmental black soot pollution.

Bernard (2016) on the objectives of the environmental health to develop resistance skills states that when appropriate, promotive and protective factors ensure resilience in terms of the ability to prevent or to record from environmental black soot pollution, sickness and to promote health literacy which can also be applicable in Eleme Local Government Area of Rivers State.

Research Questions

1. What are the attitude of the people towards the sue of environmental health resources which gives rise to black soot pollution in Aleto in Eleme Local Government Area of Rivers State?
2. What is the effect of black soot on the people of Aleto community in Eleme Local Government Area?
3. Will environmental health education help to reduce black soot pollution in Aleto?

METHODOLOGY

Descriptive survey research design was adopted for the study. The study was carried out in Aleto community in Eleme local government area. The population for the study consisted of 2 million residents of Aleto community in Eleme Local Government Area of Rivers State. A stratified random sampling technique was used in selecting one community from each of the five communities. A sample size of 260 participants were used for the study and a total of

260 copies of questionnaire were also designed and distributed to members of the Aleto Community in Eleme Local Government Area of Rivers State.

RESULTS

Table 1: Percentage of response on environmental health protection programme to create environmental awareness among the people of Eleme LGA

S/No	Response Item	A	D	Total	A%	D%	%
1.	Environmental health protection programme are organized regularly in my community.	200	60	260	77%	23%	100
2.	Effective environmental health protection can help to reduce black soot pollution.	220	40	260	85%	15%	100
3.	Effective environmental health protection programme can make individuals to be conscious of their environment.	230	30	260	88.5%	11.5%	100

Source: Researcher's Field survey, 2022

From table 1 above, it is observed that 77% (200 respondents), 85% (220 respondents) and 88.5% (230 respondents) responded to item 1, 2 and 3 respectively agreed that environmental health protection programme organized to raise environmental awareness among the people of Aleto in Eleme LGA. On the other hand 60 (33%), 40 (15%) and 30 (11.5%) responded to items 1, 2 and 3 respectively, disagreed with the statement. Therefore, it can be said that the environmental health protection programme organized, are capable of creating environmental health awareness among the people of Local Government Area of Rivers State.

Table 2: Percentage response on the attitude of the people towards environmental black soot pollution

S/No	Response Item	A	D	Total	A%	D%	%
1.	Improper disposal of gaseous pollutant can lead to black soot pollution	180	80	260	69.2%	30.8%	100
2.	Negligence of environmental care can lead to black soot pollution	215	45	260	83%	17%	100
3.	Poor management of gaseous industrial waste can cause black soot pollution	220	40	260	84%	15.4%	100

Source: Researcher's Field survey, 2022

From table 2 above, it reveals that 69.2% or 180 participants, 215 (83%) and 220 (87%) respectively agreed that the attitude of the people toward the environment contribute to environmental black soot pollution in Aleto community. On the other hand, 80 (30.8%), 45 (17%), 40 (13%) of the respondents to item 4, 5, and 6 respectively, disagreed with the statement. People towards the environment contribute to environmental black soot pollution

in Eleme Local Government Area. It can therefore be said that the attitude of the people contribute immensely to environmental black soot pollution in the area.

Table 3: Percentage analysis of response on the environmental health education help to reduce black soot pollution in Aletto in Eleme Local Government Area

S/No	Response Item	A	D	Total	A%	D%	%
1.	Effective enlightenment campaign will increase the participation of the people toward protecting their environment	253	7	260	97.3%	2.7%	100
2.	Educating the people about their environment may improve their attitude towards the environment.	208	52	260	80%	20%	100
3.	Adequate environmental awareness would improve the attitude of the people toward their environment	212	48	260	81.5%	18.5%	100

Source: Researcher’s Field survey, 2022

From Table 3, it shows that 253 (97.6%), 208 (80%) and 212 (81.5%) respondents 7, agreed that environmental health education help to reduce black soot pollution in Eleme petrochemical company. On the other hand, 7 (2.7%), 52 (20%) and 48 (18.5%) respondents disagreed with the statement. Before it can be said that environmental health education will not only reduce environmental black soot pollution in this study but it may also affect the lives of the people in the environment and man activities in the environment.

Discussion of Findings

From the above analysis, it showed that 77%, 88.5 and 88% of the respondents agreed that environmental health protection porogramme organized to create environmental awareness among the people of Eleme, because environmental health protection programme organized may help to change the attitude of the people positively toward the environment. According to Miller (1975), the term environmental could be perceived as the aggregate of external conditions that influence the life of an individual or pollution, especially the air of man and other living organism on the earth surface.

It further showed that 69.2%, 83% and 87% of the respondents were of the opinion that the attitude of the people towards environment contribute to black soot pollution in the Eleme. While 30.8%, 17% disagreed, indicating that the attitude of the people contributes to black soot pollution to the environment. Anderson (2005) stated that the atmosphere is a complex dynamic natural gaseous system that is essential to support life on planet earth.

Furthermore, the result showed that 97.6%, 80% and 8 1.5% of the respondents agreed that environmental health education could help to reduce black soot pollution in Eleme petrochemical company. Environmental health education may help to improve the knowledge of the people on how to prevent environmental black soot pollution. Andrew (2011) stated that black soot pollution was also found to be associated with increased incidence and mortality from coronary stroke in a cohort study in 2011.

Most adults need to be conscientised on the need to be environmentally conscious by protecting and promoting the environment against industrial black soot pollution and environmental health hazards. Anderson (2005) black soot pollution is something that we can not really ignore these days.

Conclusion

The results of this study clearly highlighted the environmental health hazards induced by activities of illegal oil refiners in Aleto Community Eleme Local Government Area of Rivers State in general. Furthermore, the high rates of environmental health hazards induced by black soot pollution in Aleto community in Eleme Local Government Area is due to the release of toxic emission, traffic emission, industrial emission generated from different industries in chemical fertilizer industry, gas flaring, dusts, cloudy smoke emission from refinery and petrochemical (PHRC), heavy machine, vehicles, war machines and of course domestic activities such as cooking with firewood. This study revealed that environmental health hazard induced by black soot pollution in Aleto community in Eleme Local Government Area of Rivers State have been sensitized or informed on the dangers of indiscriminate dumping of waste thereby increasing their general awareness.

Recommendations

Based on the findings of this study, the following recommendations were made:

- 1) Environmental health impact assessment should be carried out before any development project is executed to prevent the occurrence of environmental air pollution.
- 2) Government should have practicable and enforceable environmental laws and policies which will protect and reduce environmental air pollution problems.
- 3) Sensitization and education of the public on the dangers of some of their activities on environment by the concerned government and non-governmental agencies.
- 4) Environmental health programmes should be provided for members of communities on development strategies.
- 5) Provide the necessary logistics for industrial emission and environmental air pollution.
- 6) Regular post-project monitoring should be made in order to determine the effect on the environment.
- 7) Attention should be paid to effective solid waste, management in the communities.
- 8) There is need to increase the general awareness of the citizen in Eleme communities in environmental black soot pollution.
- 9). There should be total ban on the activities of artisanal refiners in the community.
- 10). Clean-up project should be implemented to take care of the pollution in the area.

REFERENCES

- Anderson, A. (2015). Environmental science action for a sustainable future (3rd ed), California: Benjamin. *The Ochsner Journal*, 9(1), 27-31.
- Andrew M.F. (2011). Teamwork in environmental management: Planning and process in environmental management. Ibadan: Macmillan Publishers. *African Journal of Environmental Science & Technology*, 14(12), 422-43

- Anizubike E. E. (2005). Relationships of the environment to health. Unpublished Lecture Series, Institute of Education, Calabar: University of Calabar. *Journal of Neuroscience, 33(4)*, 18641-18653
- Ashley, F.N. (2014). Environmental protection and management planning process and strategies. Nigeria: University of Calabar. *African Journal of Environmental Science and Technology, 6 (3)*,371-379.
- Bernard, O.P. (2016). Essentials of environmental issue. The world and Nigeria in perspective. Ibadan: Daily Graphic Publication. *Scientific Society, 77*, 315-341
- Horsefall A. & Split E. E. (2018). *Environmental protection and management planning process and strategies*. Aja.
- Miller B. (1995). National report on the implementation of agenda 21 for the special session of the UN General Assembly, pp. 23-28. New York:
- Ndukwe, O.U. (2000). *Elements of Nigeria Environmental Laws*. University of Calabar.
- Newton A. U. (2018). Gaseous effective to health, Nigeria is one of the highest emitted of green house gases in African. *Journal Health Pollution, 9(24)*, 284-299.
- Ngaba-Waye A. (1997). Environmental adult education: A factor in sustainable development on the eve of the 3rd millennium. *Adult Education and Development 39*, 251-253.
- Obot, A. (2001). *Strategies for effective waste management and disposal*: (Unpublished) processing of sensitization workshops held at UniUyo Staff School. April.
- Onlyla, G. E. E. (1986). *Nigeria environmental education and management*. University of Calabar.
- Pretty, J.N. (1972). *Waste quality in street environments*. Burges.
- Sule, R.A. (2001). Urban environmental pollutant criticality. A synopsis. Calabar: Baaj. *Journal Health Pollution, 9(24)*, 266-289.