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## IMPACTS OF SOLID WASTE MANAGEMENT STRATEGIES ON THE HEALTH OF SCHOOL CHILDREN IN OIL PRODUCING COMMUNITIES OF RIVERS STATE

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**Abstract:** This survey study was carried out to determine the impact of solid waste management strategies on the health of school children in oil producing communities of Rivers State. To achieve the purpose of this study, fifteen item questionnaires were administered on ninety respondents randomly sampled from ten secondary schools in the area. The data obtained was analysed with simple percentage. The findings show the various methods of solid waste management, a substandard method is used by the school children. The management strategies used impact negatively on the health of school children in the area. Recommendations were also made.

**Keywords:** Solid Waste Management, Oil Producing Communities, Health of School Children

### INTRODUCTION

Solid waste has been defined by various authors and professionals, in different ways. The United states Environmental Protection Agency defined it as any useless, unwanted or discarded materials with insufficient liquid content. Solid wastes are useless, unwanted or discarded materials that arise from man's activities. Solid wastes include household garbage or rubbish, commercial refuse, industrial waste, street sweepings, construction and demolition debris, sanitation residual, abandoned automobiles etc. Solid waste can be categorized into two:- Industrial solid waste and commercial or domestic solid wastes.

Industrial solid wastes are waste materials generated in the course of manufacturing process such as metal scraps, chips pieces of glasses etc, while domestic solid wastes are the byproduct of house activities and consumptions such as wrapping papers, vegetables, cans, bottles or containers (Wokocha, 2015).

Solid waste management is a systematic control of the generation, storage, collection, transportation separation, processing and recovery. Solid waste management is generally accepted as a major aspect of the indigenous community organization and traditional home management hence every compound has a designated area for daily solid waste collection and disposal. In most oil producing areas, there is the absence of a regular and efficient solid waste collection system, waste is dumped in open spaces, on access roads, classrooms, paths and along water courses even around schools in both rural and urban cities. There are no public facilities for disposing of rubbish within any reasonable distance. Where waste bin exists, they constitute health hazards because the rubbish are not promptly removed instead it is left to pile upon and spill over around the streets. Waste dumps are invaded by scavengers and so serve as breeding ground's for diseases vectors, primarily flies and rats (Wokocha, 2015). Leachate from decomposing and putrefying garbages percolate into soil and nearby water sources, the resultant contamination of food, water and soil could be responsible for the transmission of many diseases. Uncollected refuse also finds its way into open drains which become blocked

and thereby promote the breeding of mosquitoes and flies which contaminate foods and cause infections like diarrhea, dysentery cholera, worms, malaria etc.

### **STATEMENT OF THE PROBLEM**

In early times, solid and other waste did not pose any significant problem, these days arising from urban growth which results mainly from natural increase in population and therefore unavoidable at this stage of urban development. No town or schools in the study area with high population density can boast of having found a lasting solution to the problem of filth and huge piles of garbage around so the problem continues to assume monstrous dimension. To teachers, students and other dwellers, public hygiene starts and ends in their sleeping places, while the rest of the surroundings and indeed the city would take care of themselves. The situation has so deteriorated that today the problem of solid waste has become one of the nation's most serious environmental problem, hence this study tries to examine the impact of solid waste management, strategies on the health of school children in oil producing communities in Rivers State.

### **Purpose of the Study**

The objectives of this study are to determine

1. The attitude of school children towards refuse management
2. The various methods used in the collection of solid wastes in the study area
3. The impact of solid waste on the health of school children

### **Research Questions**

This study attempt to answer the following research questions:

1. What are the attitudes of school children in oil communities towards refuse management?
2. What are the various methods of refuse management used in oil producing communities of Rivers State?
3. What are the impacts of solid waste on the health of school children in the oil communities in Rivers State.

### **Scope of the Study**

This study covers all oil producing, communities in Rivers State

### **Area of the Study**

The area of this study is Ogba/Egbema/Ndoni Local Government Area of Rivers State. This area is chosen because it is the largest oil producing communities in Rivers State where the processing, transportation and flaring of petroleum products take place daily. It is also one of the busiest growing cities in Rivers State which is associated with waste management problems.

### **Design of the Study**

A simple survey design was used in this study, the study made use of a defined sample from a population to determine the impact of solid waste on the health of school children and also to determine the various waste management strategies used in the area.

### **Population of the Study**

The study population comprises of all secondary schools in Ogba/Egbem/Ndoni Local Government Area of Rivers State.

**G. A. Wokocho**

**Sample and Sampling Technique**

A total of ninety (90) respondents were randomly sampled from ten schools in oil producing communities in Ogba/Egbema/Ndoni Local Government Area of Rivers State

**Instrumentation**

A structured questionnaire designed by the researcher was used to illicit information for the study.

**DATA ANALYSIS TECHNIQUE**

A simple percentage was used for the data analysis

**Research Question One:** What are the attitudes of School children in oil producing communities towards refuse management?

Items 1-4 of the questionnaire were analyzed to provide answers to this research question as shown in table one below:

**Table One: Response of the Attitude of School Children towards Refuse Management**

S/N	ITEMS	AGREE	AGREE%	DISAGREE	DISAGREE%	TOTAL
1.	The children sweep their surrounding every school day.	70	78	20	22	100
2.	Sweep out solid waste materials.	80	89	10	11	100
3.	Wastes are deposited close to the school.	85	94	5	5	100
4.	Wastes form high heaps near the school	75	83	15	17	100

Above table indicates the attitude of school children towards solid waste management.

**Research Question Two:** What are the various methods of Refuse management used in oil producing Communities?

Items 5-9 of the questionnaire were analysed to provide answers to this research question as shown in table two below:

**Table Two: Response on the Various Methods of Refuse Management**

S/N	ITEMS	AGREE	AGREE %	DIS-AGREE	DIS-AGREE %	TOTAL
5.	Solid wastes are evacuated promptly to designated dumpsite.	10	11	80	89	100
6.	Solid wastes are incinerated	85	94	5	6	100
7.	Hazardous wastes are converted into less toxic forms.	15	17	75	83	100
8.	Some wastes are recovered and converted into useful products.	10	11	80	89	100
9.	There are integrated Waste management systems in place.	4	4	86	96	100

In table two above, the response affirmed the type of refuse management carried out in the area.

**Research Question Three:** What are the impacts of solid wastes on the health of school children?

Items 10-15 of the questionnaire were analysed to provide answers to the research question as indicated in table three below.

**Table Three: Response on the Impact of Solid Waste on the Health of School Children**

S/N	ITEMS	AGREE	AGREE%	DIS-AGREE	DIS-AGREE %	TOTAL %
11.	Waste cause air pollution which affect respiratory system.	85	94	5	6	100
12.	Waste contaminates drinking water causing stomach diseases.	88	98	2	2	100
13.	Heat rashes are common.	86	96	4	4	100
14.	Waste cause accidents.	88	98	2	2	100
15.	Burning of wastes cause fire outbreak.	87	97	3	3	100

From the table above, it is understood that the wastes impact negatively on the people.

## DISCUSSION OF RESULTS

Table one shows the attitude of school children which comprises of daily sweeping of the surrounding to depositing close to the school which eventually results to high heaps of wastes near the school. This is indicated by the high percentage response of 78, 89, 94, and 83 as against 22, 11, 5 and 17. This finding is in line with that of Agarwal (1996) who asserts that the school children show sub-standard attitude to waste management because of their level and also as directed by their teachers as they sweep and dispose house hold garb ages at designated places by the school authority.

Table two shows the various method of solid wastes management which indicates that solid wastes are not promptly evacuated, wastes are incinerated, Hazardous waste are not converted into less toxic form as well as absence of integrated waste management system in place.

This is indicated in the percentage response of 89, 94, 83, 89, 96 as against 11, 6, 17, 11 and 4. This finding is in line with that of ATSDR (1998) who found that enormous volume of wastes which are highly toxic and hazardous and also injuries to human health are produced.

From the analysis in table three, the responses indicated that people within the communities are adversely and negatively impacted by the wastes generated in the area. This is indicated in the percentage of 94, 98, 96, 98 and 97 as against 6, 2, 4, 2, and 3. This finding is in agreement with that of Bergel (1998) who reported from his research finding that crude oil wastes and other solid wastes are not properly managed as some migrate through seepages to contaminate underground water causing stomach upset and at regular consumption of the water resulting in respiratory problems, diarrhea, cholera and even cancer.

## SUMMARY

This research survey was carried out to ascertain the attitude of school children towards refuse management, the various methods of refuse management and the impacts of solid waste management strategies used on the health of school children in oil producing communities in Rivers State.

**G. A. Wokocho**

A structured 15 item questionnaire of agree and disagree was administered to 90 respondents. The findings indicate that some solid wastes produced are toxic and hazardous and that the management of those wastes are inadequate and below standard and that the waste impact negatively on the health of school children in the areas.

## **CONCLUSION**

The following conclusions are drawn from the study:

1. The attitude of the school children can be considered as substandard. As it is localized to daily sweeping and forming heaps near the area.
2. The solid waste management is inadequate as wastes are not promptly evacuated, sometimes incineration method is used and there is absence of integrated management system.
3. People in the research communities are negatively impacted by the waste produced and the management strategies used.

## **RECOMMENDATIONS**

Based on the findings, the following recommendations are made:

1. The National Environmental Standard Regulator and Enforcement Agency (NESREA) should be up and doing to monitor waste disposal strategies.
2. Oil companies should manage their wastes directly instead of subletting it out thereby creating room for substandard jobs.
3. There should be maintenance culture for aging and corroding equipments.
4. Environmental impact assessment should be conducted to ascertain impact of gas and other wastes in the area.
5. Well equipped hospital should be sited in the areas.

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