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Evaluation of the Toilet Facilities in Primary Schools in the Niger Delta: WASH Education Series 2

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Abstract:

Background: Children's ability to learn may be affected by inadequate water, sanitation and hygiene conditions in several ways.

Objective: To assess the availability and functionality of toilets in primary schools in Obia-Akpor Local Government Area.

Methodology: This was a descriptive cross sectional study that involved the use of an observational checklist to get information from 25 primary schools and the administration of 480 self-administered structured questionnaires to pupils in the primary schools. A multistage sampling was employed in choosing the pupils that were studied.

Results: Of the 25 primary schools studied, 23(92%) had water cistern, all (100%) the 23 primary schools had toilet buildings with small windows for ventilation and 22 (95.65%) had toilets with doors that could be closed. Also, of the 23 primary schools with water cistern toilet facility, 22 (95.65%) schools had functional toilet facility and 9 (39.13%) had toilet facilities specifically designed for small children, and 14(60.87%) had toilet facilities that were not designed to suit younger children. Also, 17(77.27%) had separate facilities for teachers and pupil with sex distinction, the toilets to pupil ratio is < 1:40 in 14 primary schools and > 1:40 in 8 primary schools, pupils in 9(40.91%), made use of tissue/paper as personal cleansing material, 4(18.18%) had tissue/paper but occasionally made use of water, 3(13.64%) had water only, 6(27.27%) of the primary schools had no provision for personal cleansing and none had water and soap as personal cleansing material.

Conclusion: This study met with globally satisfactory benchmarks. Advancement and coordination of upkeep arrangement and strict agreeability with admission proceedings to match existing toilet facilities is key to communicable disease prevention and good school performance.

Keywords: Toilet facilities, Water Sanitation and Hygiene, Hygiene education, Primary schools

1. Introduction

Children's capacity to learn may be influenced by deficient water, sanitation and hygiene conditions in a few ways. These incorporate helminth diseases (which influence a huge number of school-age children), skin contaminations, long haul introduction to compound contaminants in water (e.g. lead and arsenic), and diarrhoeal illnesses, all of which constrain numerous school-children to be missing from school. Poor natural conditions in the classroom can additionally make both showing and adapting exceptionally troublesome. Young ladies and young men are prone to be influenced in distinctive courses by lacking water, sanitation and hygiene conditions in schools, and this may help unequal learning open doors. Once in a while, young ladies and female teachers are more influenced than young men on the grounds that the absence of clean offices implies that they can't go to school amid menstruation.¹⁻⁵

WASH mediations are pertinent and diverse, potentially incorporating improvement in all viewpoints; sanitation access (e.g., access to enhanced latrines, latrine upkeep, and faecal sludge management), hygiene drills (e.g., hand washing before eating and/or after defecation, water treatment, soap use, wearing shoes and water storage practices), and water access (e.g., water quality, water quantity

and distance to water). Educating school children and training and retraining teachers on these medications are vital in averting communicable diseases in schools.⁶⁻¹⁵

2. Fundamental School Toilet Necessities

For toilets to be sufficient, there ought to be 1 for every 25 young ladies and 1 for female staff; 1 toilet for every 50 young men and 1 for male staff. Toilets ought to be effectively open to all, including staff, children with disabilities and more youthful children, in not more than 30 meters from all clients, give security and security, suitable to local, cultural and social conditions and age and sex fitting. Toilets ought to be hygienic to utilize, simple to clean, advantageous hand washing offices close-by. A cleaning and upkeep routine ought to be in operation to guarantee that clean and working toilets are accessible at all times.¹

Characteristic lighting and ventilation of the havens are imperative for examination of the toilet for cleanliness and evacuation of awful smells.

Anal cleansing is overlooked in the configuration of hygiene and sanitation offices considerably more regularly than hand washing. Frequently, materials for anal cleansing are not accessible at the office itself and children need to gather water or accumulate sticks, stones, leaves, and so on before defecating. In addition, tossing robust materials utilized for anal cleansing into the clean framework prompts unnecessary topping off of pits, diminishing their lifetime impressively, and successive hindering of release channels. To stay away from this, the material ought to be set aside in a unique container. The accumulation and transfer of anal cleansing materials must be generally sorted out to stay away from unhygienic circumstances, defilement and disturbance brought on by flies, smells, and so forth. Containers must be purged and cleaned all the time and the waste must be discarded somewhere else, in a different pit that won't permit it to come into contact with drinking water sources, or copied in a basic incinerator. On the off chance that the toilet is joined with a sewage framework, flushing of the degradable material utilized for anal cleansing could be considered.¹⁶

3. Utilitarian Status of School Toilet

Accessibility of infrastructure does not suggest that it is legitimately working or utilized by the target beneficiaries, unless it is appropriately worked and kept up. The purposes behind non-working of the toilet offices could be: errors in outline (non-specificity for age), non-accessibility of water for washing and flushing, non-accessibility of stores for operation and upkeep, an excess of clients, low quality of development (floor is not legitimately put and toilet bowl not altered and so on.), occasional cleaning and support (in excess of 100 persons utilizing a latrine need in any event day by day cleaning by a sanitary staff), legitimate utilization (school children not prepared enough to appropriately utilize the office). Lock at any public administration facility, then again, implies that free entry is denied or cornered by few.¹⁷

4. Objective

To assess the availability and functionality of toilets in primary schools in Obio-Akpor Local Government Area.

5. Methodology

5.1. Study design

This is a descriptive cross sectional study of pupils and teaching staff of primary schools in Obio-Akpor local government area.

5.2. Study area

The study was carried out in primary schools located in Obio-Akpor local government area of Rivers State. Obio-Akpor is a Local Government Area in the metropolis of Port Harcourt, one of the major centres of economic activities in Nigeria, and one of the major cities of the Niger Delta, located in Rivers State. The Local Government Area covers 260 sq.km and as at the 2006 Census, it held a population of 464,789. Obio-Akpor, with its headquarters at Rumuokoro, has 45 Public (State Government owned) and 71 Private schools.¹⁸

5.3. Study population

This comprised of teaching staff and pupils in primary five and six in primary schools in Obio-Akpor local Government area.

5.4. Eligibility criteria

- Teacher in a primary school
- Pupils of a primary school

5.5. Inclusion criteria

- Pupil in primary five or six, attending a primary school in Obio-Akpor.
- Teacher in primary school in Obio-Akpor

5.6. Exclusion criteria

- Non-teaching staff of a primary school in Obio-Akpor.
- Pupil not in primary five or six.

5.7. Sample Size Determination

A suitable sample size of teachers and pupils was selected within the target population. This sample size was derived as follows; A prevalence rate of 39.7% was used. Precision (i.e. margin of sampling error) tolerated was set at 5%, at 95% confidence interval, using the formula

$$n = pq / (e/1.96)^2$$

Where n = sample size

P = prevalence rate = 39.7%

q = 100 – p = 100 – 39.7 = 60.3%

e = margin of sampling error tolerated at 95% confidence interval = 5%

Hence, $n = 39.7 \times 60.3 / (5/1.96)^2$

n = 368.00

Adjusting for an attrition or non-compliance rate of 30%

Hence, 30% attrition = $30/100 \times 368.00 = 110.40$

Thus, the adjusted sample size = $368.00 + 110.40 = 478.40$

Working sample size \approx 480 subjects

5.8. Sampling Method

This was a multistage random sampling in which a sample frame of all the primary schools in Obio-Akpor LGA was acquired from the Obio-Akpor Primary School Education Board. There are 45 Public and 71 Private schools. Among these, 10 public and 15 private schools were selected by simple random sampling and the number of pupils to be sampled in each of these schools was predetermined. A stratified sampling by sex and class level was then done to select the number of males and females in each arm of the primary five and six class level to be studied, following which a simple random sampling was done to select an arm in each of the primary five and six class level to be studied. Finally, a simple random sampling was done to select the actual male and female subjects to be given questionnaire. Also, 25 observational checklists (one for each school) which were filled in conjunction with a school teacher/administrator were used for this study.

5.9. Study instrument

A structured self-administered questionnaire was designed and used to collect information from pupils, as well as an observational check list. The information that was collected includes; water source and type of water facilities, water availability and accessibility, toilet facilities (type, location, number), sanitary condition of toilets, awareness of teachers on School Health policy, school curriculum on hygiene education, teacher training on hygiene education, hygiene education resources, provision for hand washing, hand washing facilities (location and access to water and soap), hand washing practice.

5.10. Data analysis

The data was processed using windows excel 2007. Summary statistics, sample frequencies and crossed tabulations was then computed.

5.11. Limitations of study.

- Difficulty in gaining access to some schools, which was overcome by repeated appeals and repeated visitations
- Some pupils could not read, as such, the questionnaires had to be given to others that could understand them.
- Some pupils tried to copy from their peers, necessitating adequate separation of pupils from one another during the administration of questionnaires.

5.12. Consent and ethical approval

A permission to study was obtained from the Obio-Akpor local Government Primary School Board, following the presentation of a duly obtained letter of consent from the department of Preventive and Social Medicine of the University of Port Harcourt. At the beginning of the study, the administrators of the selected primary schools were duly informed. The reason for the study and procedure for data collection was explained to the teachers and pupils before collection of data from them.

6. Results

6.1. Introduction

A total of 25 checklist and 480 self-administered structured questionnaires were used to collect information from teachers/school administrators and pupils in primaries 5 and 6 respectively. Out of this number, 14 questionnaires were excluded from the analysis because they were not properly filled or returned. Thus, the respondent rate of this study was 97.08%.

6.2. Demographic data

6.2.1. Sex distribution of pupils

The sex distribution of the 466 respondents as seen in table 1 below, showed that 187(40.13%) of respondents were male and 279(59.87%) were female.

Type of school	Sex of Pupils				Total No	Total %
	Male		Female			
	Absolute Frequency	Relative Frequency (%)	Absolute Frequency	Relative Frequency (%)		
Private	102	36.69	176	63.31	278	59.66
Public	85	45.21	103	54.79	188	40.34
Total	187	40.13	279	59.87	466	100.00

Table 1: Sex distribution of pupils in primaries 5 and 6

6.2.2. Sex distribution of teachers

The sex distribution of the 25 teachers as seen in table 2 below, showed that 7(28.00%) of respondents were male and 18(72.00%) were female.

Type of school	Sex of Teachers				Total No	Total %
	Male		Female			
	Absolute Frequency	Relative Frequency (%)	Absolute Frequency	Relative Frequency (%)		
Private	4	26.67	11	73.33	15	60.00
Public	3	30.00	7	70.00	10	40.00
Total	7	28.00	18	72.00	25	100.00

Table 2: Sex distribution of teachers

6.3. Toilet facilities in Primary Schools in Obio-Akpor LGA

6.3.1. Toilet type

This study showed that of the 25 primary schools visited, 23(92%) had water cistern and 2 (8%) had no toilet facility, as shown in table 3 below.

Type of toilet	Absolute Frequency	Relative Frequency (%)
Water cistern	23	92.00
No toilet facility	2	8.00
Total	25	100.00

Table 3: showing type to toilet in primary schools

6.3.2. Location of toilet facility.

The study showed that; all (100%) the 23 primary schools with toilets had such facilities located within the school building, as shown in table 4 below;

Location of toilet facilities	Absolute Frequency	Relative Frequency (%)
Within school building	23	100.00
Separate from school building	0	0.00
Total	23	100.00

Table 4: location of toilet facilities

6.3.3. Housing structure of toilet facilities

The study also showed that; of the 23 primary schools that had toilet 18(78.26%) had their toilet building made of concrete with tiled walls and floors and 5 (21,74%) had their toilets building made of concrete but without tiled walls and floors, as shown in figure 1 below;

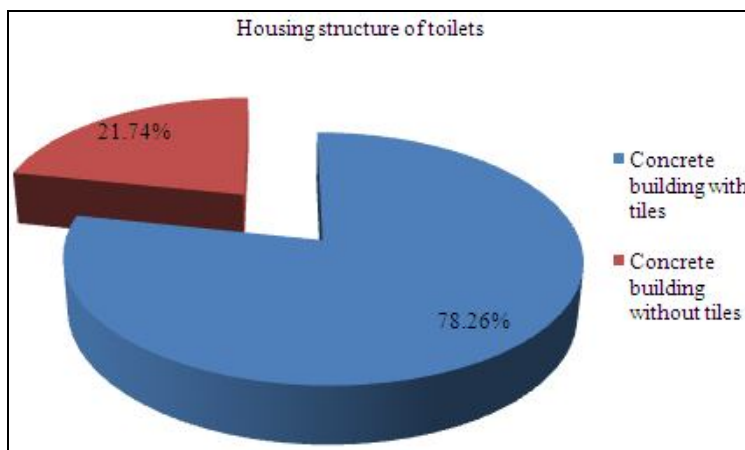


Figure 1: Housing structures of toilet facilities

6.3.4. Ventilation type in toilet facilities

The study also revealed that; all (100%) the 23 primary schools had toilet buildings with small windows for ventilation, as shown in table 5 below;

Ventilation type	Absolute Frequency	Relative Frequency (%)
Small window	23	100.00
No window	0	0.00
Total	23	100.00

Table 5: Ventilation type of toilet facilities

6.3.5. Privacy of toilet facilities

The study showed that; of the 23 schools that had toilets, 22(95.65%) had toilets with doors that could be closed, and 1(4.35%) had toilets without doors, as shown in table 6 below;

Privacy of toilet facilities	Absolute Frequency	Relative Frequency (%)
With doors	22	95.65
Without doors	1	4.35
Total	23	100.00

Table 6: Privacy of toilets in Primary schools in Obio-Akor LGA

6.3.6. Functionality of toilet facilities

Also, of the 23 primary schools with water cistern toilet facility, 22 (95.65%) schools had functional toilet facility and 1 (4.35%) school had toilets that were not functional, as shown in figure 2 below;

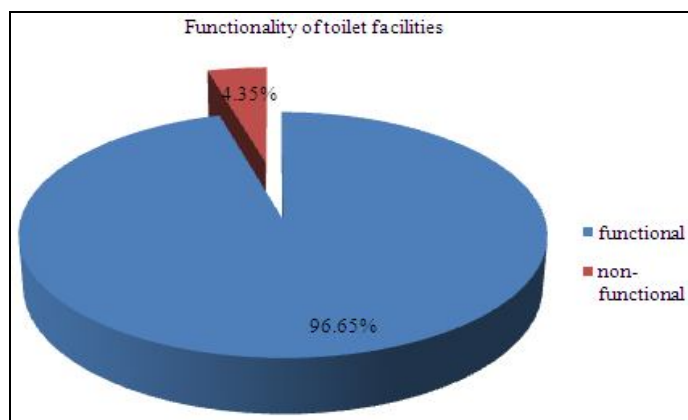


Figure 2: Functionality of toilets

6.3.7. Specificity of toilet design to suit younger children

Furthermore, of the 23 primary schools that had toilet facilities, 9 (39.13%) had toilets facilities specifically designed for small children, and 14(60.87%) had toilet facilities that were not designed to suit younger children. This is shown in figure 3 below.

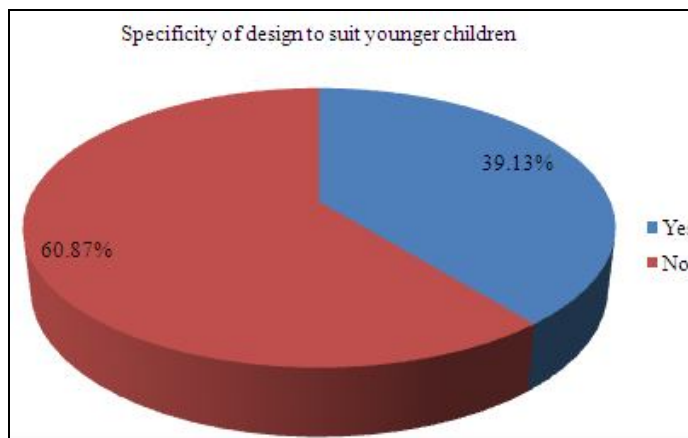


Figure 3: Specificity of design of toilets to suit younger children

6.3.8. Separation of toilet facilities by sex and person

The study showed that; of the 22 primary schools with functional toilet facilities, 17 (77.27%) had separate facilities for teachers and pupil with sex distinction, 3 (13.64%) had separate facilities for teachers and pupil without sex distinction, and 2 (9.09%) of the primary schools did not have separate facilities, as shown in table 7 below;

Separation of toilet facilities	Absolute Frequency	Relative Frequency (%)
For teachers and pupils with sex distinction	17	77.27
For teachers and pupils without sex distinction	3	13.64
No separate facilities	2	9.09

Table 7: Separation of toilet facilities by sex and person

6.3.9. Toilet to pupil ratio

The study showed that; of the 22 primary schools that had functional toilet facilities, the toilets to pupil ratio is < 1:40 in 14 primary schools and > 1:40 in 8 primary schools, as shown in table 8 below;

S/No	Number of toilets	Number of pupils	Toilet to pupil ratio
1	18	1400	1:78
2	14	230	1:16
3	16	230	1:14
4	14	390	1:28
5	11	230	1:21
6	8	390	1:49
7	14	390	1:28
8	6	285	1:48
9	1	150	1:150
10	2	131	1:66
11	10	375	1:35
12	24	540	1:23
13	8	93	1:12
14	4	200	1:50
15	4	256	1:64
16	5	200	1:40
17	6	210	1:35
18	8	107	1:13
19	4	113	1:28
20	2	100	1:50
21	4	77	1:19
22	2	70	1:35

Table 8: Respective toilets to pupil ratio

6.3.10. Type of personal cleansing material in school toilets

Of the 22 primary schools with functional toilet facilities, pupils in 9(40.91%), made use of tissue/paper as personal cleansing material, 4(18.18%) had tissue/paper but occasionally made use of water, 3(13.64%) had water only, 6(27.27%) of the primary schools had no provision for personal cleansing and none (0.00%) had water and soap as personal cleansing material. This is shown in figure 4 below;

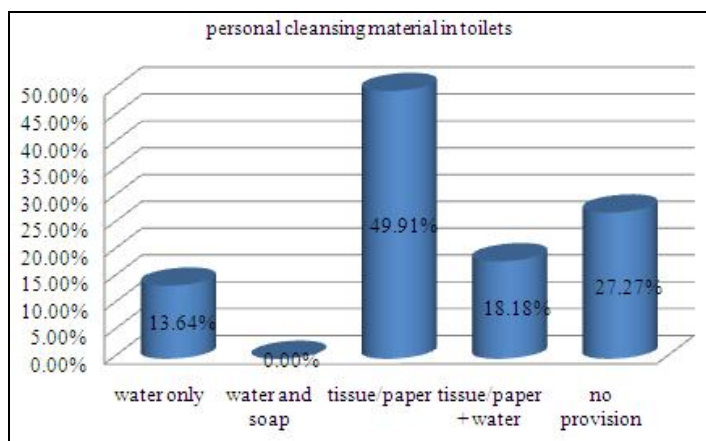


Figure 4: Provision for personal cleaning

6.3.11. Disposal of personal cleansing material after use

Also; of the 13 primary schools that had tissue/paper as personal cleansing material, 4(30.77%) had a waste bucket for disposed of personal cleansing material after use and pupils in 9(69.23%) of the primary schools made use of the toilet receptacle for the disposal of personal cleansing material after use, as shown in figure 5 below;

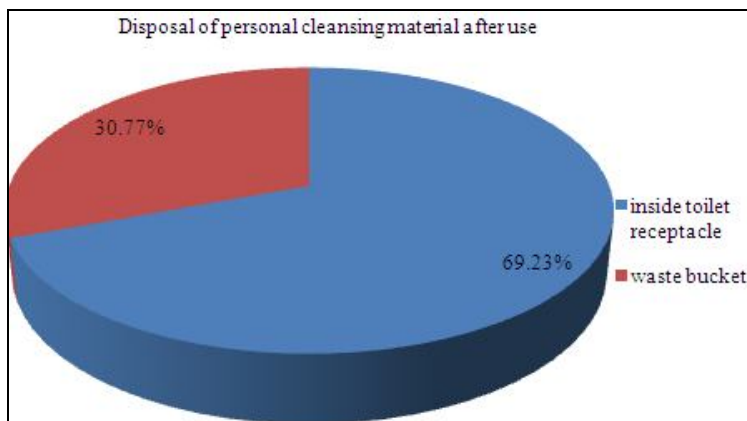


Figure 5: Disposal of tissue/paper after use

6.3.12. Personnel involved in cleaning toilets

The study showed that all the 22(100%) primary schools with functional toilets hired cleaners to clean their toilets, as shown table 9 below;

Use of hired cleaners	Absolute Frequency	Relative Frequency (%)
Yes	22	100.00
No	0	0.00
Total	22	100.00

Table 9: Use of hired cleaner for toilet cleaning in primary schools

6.3.13. Toilet cleaning routine

Also; of the 22 primary school with functional toilets, 5(22.73%) were cleaned more than once daily, 15(68.18%) were cleaned once daily and 2(9.09%) of the schools were cleaned occasionally, as shown figure 6 below;

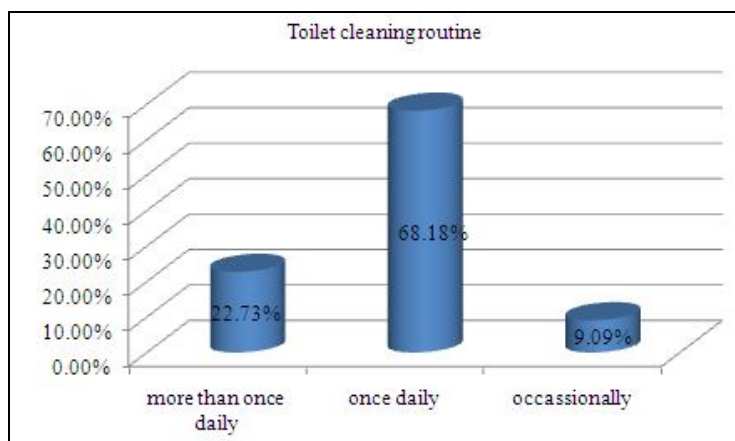


Figure 6: Cleaning routine in Primary schools

7. Discussion

This study revealed that 92% of the primary schools visited used water cistern (improved) type of toilet facility, a sharp contrast with the UNICEF study in which only 3% of schools were said to have water closet and the study done in Edo state in which 40% had water closet. However, 8% of the primary schools had no toilets, also better than 30% seen in the UNICEF study and 28% seen in the study done in Edo state.¹⁹⁻²⁰ The reason for this absence of toilet facilities is the fact that the 2 schools were occupying temporary locations, similar to what was revealed in the study done in Bangladesh, in which 11 latrines had not been handed over to the school authorities.²¹ The schools with toilet facilities had them located within the school building, which are safe and easily accessible as the study done in Swaziland and Zimbabwe suggested.²² The toilet facilities could also be said to be of appropriate design as 78% were concrete buildings with tiles, all having small windows, with 96% having doors that could be closed, however, only 40% of the schools had toilets specifically designed to suit younger children. The toilet facilities could thus be said to be easy to clean well ventilated and affording privacy, as prescribed in section 2 of this document.

It was observed that 96% of the primary schools had functional toilet facilities as opposed to the situation reported in the UNICEF study in which only 28% had toilet facilities rated to be in good condition.²¹ The reason for the non-functionality could be attributable to the fact that the toilets were seen to be locked and devoid of water supply, which are among the reasons advanced in section 3 of this work. The situation for separation of toilet facilities by person and sex can be said to be good, as 77% had separate toilet facilities for teachers and pupils with sex distinction. The toilet to pupil ratio was <1:40 in 64% of the primary schools, which is in line with international standards. This is better when compared to with the situation in Zambia in which only 10% of schools provided adequate number of toilets for pupils.²³

This study revealed that 27% of the schools made no provision for personal cleansing after using the toilet and 13.64% had water only. This is not appreciable as improper cleansing after toilet use could allow for faeco-oral transmission of diseases and increase student absenteeism, retention rate as well as morbidity and mortality. Most schools (69%) allowed for disposal of personal cleansing material inside the toilet receptacle, which could lead to blockage of such facilities when inappropriate materials such as plain paper is used, as pointed out in section 2 of this study. All the schools with toilet facilities used hired cleaners and only 9% of the primary schools were cleaned occasionally. This is better than the situation in Bangladesh in which the latrines were cleaned by the pupils.²¹

8. Recommendations

In order to improve the standard of Water Sanitation and Hygiene (WASH) in primary schools in Obio-Akpor Local Government Area, we recommend the following:

- Public illumination and backing through broad communications, workshops and courses on the significance and requirement for fitting financing of water sanitation and hygiene training in schools, and its importance in communicable disease aversion.
- Development of support arrangement and legitimate supervision and in addition steady supply of consumables, for example, cleanser and tissue paper in the as of late built water, sanitation and hygiene offices in the model grade schools in Obio-Akpor Local Government Area, effectively existing ones and private elementary schools, through the stronghold of a checking team.
- The Primary Education Board ought to guarantee strict consistence with confirmation processes such that the quantity of understudy conceded into both private and open grade schools don't surpass the limit accommodated by the current water, sanitation and hygiene offices in the particular schools.
- Redesigning of existing school toilets to suit more youthful children, detachment of toilet offices for young men and young ladies and in addition obligatory arrangement of holders with spreads for transfer of individual purifying materials in toilets for resulting transfer by incineration or covering, in elementary schools, through enactment and burden of punishments on defaulter.

- Proper arranging and migration of students to suitable destinations with sufficient procurement for water, sanitation and hygiene before leaving on recreation ventures.

9. Conclusion

This study met with globally satisfactory benchmarks. Advancement and coordination of upkeep arrangement and strict agreeability with admission proceedings to match existing toilet facilities is key to communicable disease prevention and good school performance.

10. Acknowledgement

To all the members, staff, teachers and pupils of the primary schools in Obio-akpor Local Government area of Rivers state. Acknowledge our open and unalloyed appreciation.

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