



Research Paper

Poverty and Open Defecation in Mararaba, Nasarawa State, Nigeria.

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ABSTRACT

The impact of poverty on open defecation cannot be overemphasised. While one may blame open defecation on the financial cost of building a toilet facility, the prioritization of the construction of a good and functional toilet facility and the behaviour of the public towards the proper disposal of excreta have also, influenced this practice over the years. This study is aimed at investigating the impact of poverty on open defecation so as to make recommendation that will aid the eradication of open defecation in Mararaba and possibly, Nigeria. This study anchored on rational theory of Adam Smith. It formulated three research questions and used a sample calculator with a confidence level of 95%, margin of error of 5 and a population proportion of 50 to derive a sample population of 380 from which a sample size of 368 was derived. The researchers adopted a descriptive research design and purposively sampled respondents who have lived in Mararaba for a minimum of three years and who also live in poor neighbourhoods. Data were derived through Key Persons Interview and questionnaire. The Key Persons that were interviewed were 5 persons who work with the Nasarawa State Rural Water Supply and Sanitation Agency in Nasarawa state. Findings revealed that the nature of residents people occupy is influenced by their income. It found out that, low income earners (the poor) live in a room or two rooms apartments (in public compounds) where they have to share the toilet facility with other co-tenants in the building. It was found out that most of these buildings do not have a functional toilet facility and most of the inhabitants of Mararaba make use of bucket or pit toilet facility. This has resulted in pollution in the area. Therefore, the study recommends that, the government enforces strict penalty against those practising open defecation and landlords who do not provide a functional toilet for their tenants. It also recommends that, the government and NGOs put their efforts together to ensure the provision of mobile toilet for the populace and also, educate the masses against open defecation through seminars and workshops.

Key words: Open Defecation, Poverty, Toilet.

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I. INTRODUCTION

Poverty is a state of lack or deprivation which is usually measured with the available income, an individual possesses. It can also, be seen as a situation where individuals lack the income that enables them to access good or proper standard of living. Omobowale (2014) describes it as a situation where people are deprived of the good things of life and the ability to achieve the desired state of wellbeing and socially acceptable standard of living.

In furtherance to this view, Chen (2020) opined that, poverty is a state or condition in which a person or community lacks the financial resources and essentials for a minimum standard of living. He further stated that, poverty means that the income level from employment is so low that basic human needs can't be met. Thus, poverty-stricken people and families according to him might go without proper housing, clean water, healthy food, and medical attention.

Globally, the rate of poverty seems to have attained a worrisome rate especially with the outbreak of the COVID-19 pandemic which seems to have crippled a lot of economies. This has made Billions of people across the globe to live in dehumanizing and unclean conditions enriched with hunger, disease, desperation, and degradation (Kharas, Haml & Hofer, 2019).

Various governments of different countries have tried to eradicate the scourge of poverty in their country. But, despite all the amazing developmental programmes that are aimed at eradicating poverty, poverty has continued to rise at an unprecedented rate (World Bank, 2017; World Food Programme, 2016) thereby, increasing the rate of mortality, illiteracy, crime and other adverse consequences that accompanies it.

Brookings Institution annual report (2018) asserts that, Nigeria is categorized as one of the poorest countries in the world above India. This according to the UN Sustainable Development (2021) is a major hindrance to eliminating open defecation in the country.

UN Sustainable Development (2021), Abubakar (2018), Jones, Fisher, Reed (2012) and Saleem, Burdett & Heaslip (2019) defined open defecation as a practice of defecating in open fields, waterways and open trenches without any proper disposal of human excreta. It has also been described as the practice of disposing human excreta in garbage bins, water bodies, public areas, forests, farmlands or other open and green spaces (UNICEF/WHO, 2015 & Abubakar, 2018).

This unhygienic and unimproved method of disposing human excreta has posed serious threat to human health by contaminating the environment. Thus, the President of Nigeria, Muhammadu Buhari signed an Executive Order 009 to stop open defecation by 2025 in Nigeria (Ameh, 2019). According to Ameh, the order highlighted the fact that Nigeria had been ranked the second country with the highest open defecation prevalence in the world, and that about 46 million Nigerians still practise open defecation; a practice which has had a negative effect on the populace and contributed to the country's failure to meet the United Nations Millennium Development Goals (Ameh, 2019).

In commending the president over the signed order, Zaid Jurji noted that only 39% Nigerians use improved toilets not shared by more than one household; while only 37% of health facilities in the country have at least one usable toilet. This according to him has forced people to practise open defecation thereby, exposing the public to diseases like diarrhoea, cholera and typhoid (Ameh, 2019). In view of this, he further stated that signing the executive order 009 to end open defecation is was a very wise decision made by the president, at least to enforce open defecation free behaviour in Nigeria.

Despite signing this executive order in 2019, open defecation seems to have continued to trend especially in poor neighbourhoods and has been adopted more as a cultural practice despites its implications. Therefore, it is important to investigate social factors like poverty and examine its impact on the practice of open defecation in Nigeria. It is against this backdrop that this study investigated the impact of poverty on open defecation in Mararaba, Nasarawa state, Nigeria. This however, is a departure from most studies which tried to assess the impact of poverty on open defecation in other countries like Nepal, India etc.

Statement of the problem

Open defecation is one of the challenges facing the country, Nigeria. This threat may not be as pronounced as other social challenges like insecurity, crime etc. But, a critical look into the problem of open defecation exposes us to the social and health implications of this practise.

While its practice maybe blamed on the financial cost of building a toilet facility, the prioritization of the construction of a good and functional toilet facility and the behaviour of the public towards the proper disposal of excreta has also influenced this practise over the years.

There is no doubt that most houses in poor neighbourhoods are built with one or two toilet facilities however, the population of households and the population of the inhabitants of these households may be too many for the available toilet facilities. This is because; landlords in these poor neighbourhoods may not have prioritized the construction of a functional toilet facility that will serve all tenants when building their houses. In some cases, the toilets in these houses are spoilt or lack water supply thereby, discouraging usage.

This is in cognizance to the fact that, some of those who practise open defecation are those who trade or walk along the road, hawk their wares or trade in shops that lack a functional toilet facility. This category of people most at times, do not have a toilet facility in which use to answer the call of nature. Thus, when this call comes, they engage in the act of open defecation having accepted it as a normal and generally accepted practise in the society.

Research questions

1. In what ways has poverty influenced open defecation in Mararaba, Nasarawa state?
2. What are the implications of open defecation in Mararaba, Nasarawa state?
3. How can poverty and open defecation in Nigeria be curbed in Mararaba, Nasarawa state?

Objective of the study

The study aims at investigating the impact of poverty on open defecation so as to make recommendation that will aid the eradication of open defecation in Mararaba and possibly, Nigeria.

II. RESEARCH METHODOLOGY

Mararaba is a town in Nasarawa state, Karu Local Government Area. It is a suburb that stretches to Nigeria's Federal Capital Territory. Its neighbouring towns are; Ado, Nyanya, New Nyanya and Masaka.

Mararaba is believed to be one of the most densely populated suburbs around the Nigerian capital city, Abuja and this contributes to its reputation as having one of the busiest road channel. The area has also been known for its impoverished status that seems to have served as a catalyst for the breeding of slums and the culture of open defecation. Thus, this study investigated the how poverty influences open defecation in Mararaba due to the level of poverty in the area.

Using a sample calculator with a confidence level of 95%, margin of error of 5 and a population proportion of 50, a sample population of 380 was derived from a total population of 28,245 persons according to European Commission's Joint Research Centre (2021). However, a sample size of 368 was derived from the collected copies of questionnaire. The researchers adopted a descriptive research design because it is effective for a study like this that relies on the opinion of people and happening in the general environment.

The researcher purposively sampled respondents who have lived in Mararaba for a minimum of three years and who also live in poor neighbourhoods. The data used for this study were derived through secondary sources, questionnaire and Key Persons interview (KPI). The Key Persons interviewed were 5 persons who work with the Nasarawa State Rural Water Supply and Sanitation Agency in Nasarawa state.

III. LITERATURE

Open defecation in Nigeria

Open defecation can be described as an unhygienic human practice of defecating outside rather than in a toilet facility. The alternatives to using a toilet are usually fields, bushes, forests, ditches, streets canals or other open spaces (Clansen, Boison, Routray, Torondel, Bell, Cumming and Schmidt, 2014). This practice is predominant in areas where sanitation and toilet infrastructures and services are not readily available (Gbadegesin and Akintola, 2020) like in poor neighbourhoods.

Nigeria is ranked among the nations in the world with the highest number of people who engage in the practice of open defecation, with an estimation of over 46 million people in rural and urban areas engaging in this act (UNICEF, 2017). The prevalence of this practice according to UNICEF Fact Sheet (UNICEF, 2017) is linked to the over 12 million Nigerians that have no access to safe water and about another 40 million who are without improved sanitation.

The 2018 National Demographic and Health Survey (NDHS) reports that 56% of Nigerian households use improved toilet facilities. Going by this report, the proportion of households with no toilet facility has decreased over the last 5 years, from 59% of households in 2013 to 56% of households in 2018. However, open defecation remains widespread in Nigeria, with most households engaging in this unhealthy practice.

The major contributors of this practice are the Unhealthy and unhygienic cultural practices in rural communities in Nigeria (Ngwu, 2017). According to Ngwu, Culture, values, tradition and morals of the people determine how well they assimilate and imbibe new ways of sanitation. In some rural communities in Nigeria, people delight in defecating openly in rivers and lakes which also serves as a source for drinking water, thereby denying them safe and clean water as well as a sanitized and pollution free environment (Ngwu, 2017).

Most people who practise this act grew up to see their family members, peers, and others in the community defecating in the open and as such see this practice as habitual, natural and part of a daily routine. Norms and Practices held from childhood tend to stick and become a way of life such that even where toilet facilities are available, the practice of open defecation remains the preferred option for these categories (Connell, 2014).

The growth of this practice is also attributed to the ever-increasing population and the absence of toilet facilities in most homes in cities. This can also be attributed to the wealth/social status of individuals as those who own good toilets tend to be wealthier than those who engage in open defecation.

Osumane & Kosoe (2013) explained that economic factors encourage open defecation. Abubakar (2018) further added that the level of education of household heads which can also be influenced by economic factors also influences the practise of open defecation. This is attributed to the fact that the more-educated households are the more informed they are regarding health and environmental threats of open defecation. To add credence to the above, WHO in its 2015 survey found that the proportion of the population practicing open defecation seems to decline with increasing levels of education (UNICEF/WHO, 2015).

The practice of open defecation has had huge environmental and health implications for all citizens in Nigeria. The effect is not only limited to those in the rural areas or those practicing it in the urban areas but poses a great challenge for all and sundry. Diseases such as diarrhoea, typhoid, and cholera amongst other infectious diseases are prevalent in areas where the inappropriate disposal of human excreta takes place. Iheonu & Urama (2019) explained that agents of disease or pathogens such as bacteria, viruses, parasites etc. which are passed out in faeces if not properly disposed contaminate the sources of drinking water supply.

He argues that it has been scientifically established that one gram of faeces may contain as many as 10,000,000 viruses, 1,000,000 bacteria, 1,000 parasite cysts and 100 worm eggs (Rose, Parker, Jefferson and Carmel 2015). The effect is an increase in the cases of water borne diseases and a rise in other associated infectious diseases. Closely related to the health problem is the impact of this practice on women and girls because of the need for privacy during defecating activities.

Apart from the health effects of open defecation, the environmental challenges it poses in terms of polluting water ways is also a cause for concern. Open defecation not only deteriorates the quality of drinking water but also makes the water unfit for drinking purposes (Tambekar & Neware, 2012).

Open defecation has also resulted in conversion of large areas of land within the community into fecal fields. These 'fecal fields' potentially put the environment and consequently water sources at risk of flooding with fecal material from surrounding areas during rains (Luby, Gupta, Sheikh, Johnston, Ram & Islam, 2008).

Open defecation also results in the contamination of local environment with human feces, including surface water, public spaces, roadsides and railway lines, and it pollutes the air with foul odor. It also manifests through the use of flying toilets which are human excreta wrapped and indiscriminately thrown away. For example, open defecation pollutes beaches in Lagos and other Nigerian coastal cities thereby decreasing their potentials to attract local and international tourists (Abubakar and Dano, 2018).

Economically, open defecation reduces the human capital of a country's workforce and inhibits people's physical and cognitive development (Mara, 2017). Care givers and parents have to bear the task of taking care of the sick children thereby losing hours of labor productivity time and also income and long hours and finances are devoted towards taking care of the sick (Gbadegesin & Akintola, 2020).

Based on the above literature, it is evident that wealth and education influences open defecation. Thus, it is not out of place to assert that when members of the public are financially empowered or wealthy, it will also empower them to acquire education and access other economic positions in the society that will not just improve their social and economic status but also, make them less likely to engage in open defecation.

However, evidence has shown that the impact of open defecation do not just reflect on the health of the masses but also, poses negative social and economic implications for the public. Therefore, there is need to tackle this as a social problem that threatens the socio-economic development of the country.

Poverty and open defecation

Poverty is not only a plague of developing countries. It is also on the increase in advanced countries, as estimates in 2012 revealed that over 300 million people lived in poverty (ILO, 2012; UNDP, 2016). Incidentally, the poverty prevalence is generally intense in rural areas, than in urban areas (Ogundipe, Ogunniyi, Olagunju & Asaleye, 2019; Aderounmu, 2018). Ogundipe, Ogunniyi, Olagunju & Asaleye, 2019 & Aderounmu (2018) further noted that, close to 80% or huge proportion of the population in rural areas lives below the poverty line, with constricted social and infrastructural amenities (Ogundipe, Ogunniyi, Olagunju & Asaleye, 2019; Aderounmu, 2018).

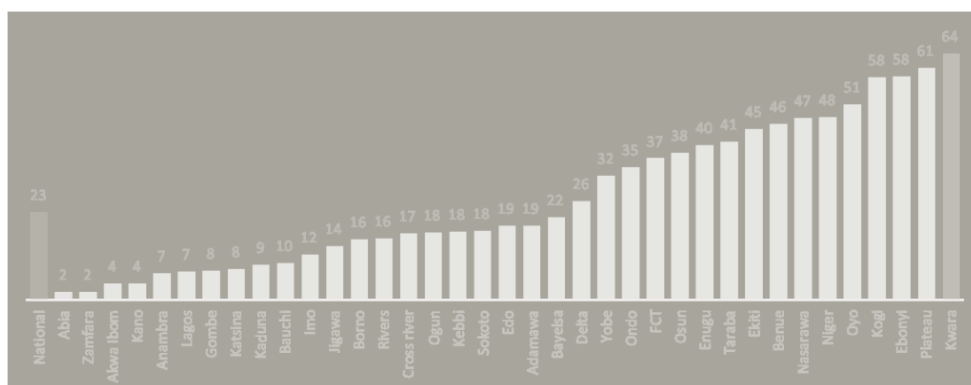
This rate of poverty has been associated with open defecation prevalence in developing countries. Abubakar (2018) reports that in Nigeria, wealth index significantly influences open defecation. He further stated that, richest households in Nigerians are the least to practise open defecation, followed by the richer households and the middle class. According to him, the poorer and poorest aggregated, represents the majority of those households who practise open defecation in Nigeria.

A study by Kirigia & Kainyu (2000) in South Africa revealed that, a unit increase in the income of respondents could lead to 0.1% decrease in the odds of practising open defecation. A similar studies conducted in Indonesia, Kerstens, Spiller, Leusbrock & Zeeman (2016), India, O'Reilly, Dhanju & Goel (2017), Mozambique, Gine-Garriga, Flores-Baquero, Palencia & Perez-Foguer (2017) and Benin Republic Gross & Gunther (2014) also supported the finding in South Africa that poorer households have higher tendency to practise open defecation than richer households.

O'Connell (2014) noted that both open defecators and latrine owners consistently complain that cost is a barrier to building and upgrading facilities. He further stated that, sometimes open defecators overestimate cost contributing to perceived unaffordability as low income rural communities consider building latrine as expensive thereby, constitute an obstacle to open defecation free by 2025. In reality, affordability can be influenced by household income, availability of cash, time of year, access to credit and availability of suitably priced sanitation options in an area (O'Connell, 2014).

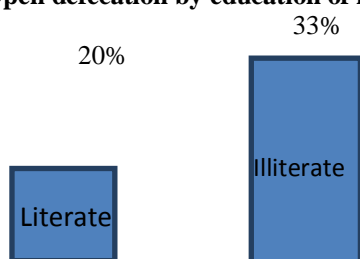
The literature reviewed that poverty is a primary challenge in ensuring an open defecation free society in Nigeria. Though other economic factors also serve as a stumbling block to this realization, they all can be subsumed as poverty in the long run.

Open Defecation by State



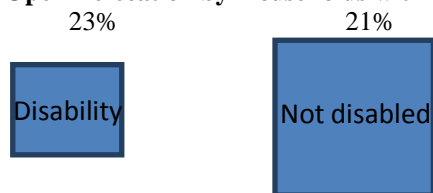
Source: findings from the 2019 UNICEF summary of the National Outcome routine mapping of water, sanitation and hygiene services levels in Nigeria

Open defecation by education of household head



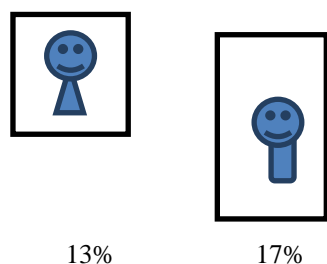
Source: Findings from the 2019 UNICEF summary of the National Outcome routine mapping of water, sanitation and hygiene services levels in Nigeria.

Open Defecation by Households with Persons Living with Disabilities



Source: Findings from the 2019 UNICEF summary of the National Outcome routine mapping of water, sanitation and hygiene services levels in Nigeria.

Open Defecation by Gender of Head of Household



Theoretical framework

This study was anchored on the rational theory of Adam Smith. This theory postulates that an individual will perform a cost-benefit analysis to determine whether an option is right for them. This theory though individualistic, effectively explains the actions of human are based on their assumed self-interest after weighing their options.

Based on this theory, open defecator engage in the practice after performing a cost-benefit analysis to determine whether open defecation is more favourable to them or not. In this analysis, the individual weighs the option of renting an apartment with good toilet facility or building a toilet facility as against his/her income.

Then, assesses the economic implications of engaging in open defecation and resolves that open defecation is more economical considering their income.

Thus, they opt for open fields, lakes or bins to practise an open defecation without considering the long-time effects on the environment and health of the populace which in the long run reflects socio-economically on the masses.

IV. RESEARCH FINDINGS

In what ways has poverty influenced open defecation in Mararaba, Nasarawa state?

S/N	Questions	Responses	Total
1.	How much do you earn in a month?	Below 20, 000 54 20,000-below 50,000 91 50, 000-below 100,000 116 100,000-below 200,000 71 200,000 and above 36	368
2.	What is the nature of your residence?	Flat 23 A room apartment 54 Two rooms apartment 129 Self-contain 62	368
3.	Has your income affected the nature of your income?	Yes 305 No 63	368
4.	If a room or two rooms, is the toilet facility in your place of residence enough for the population and households in the building?	Yes 115 No 253	368
5.	Do you have a functional toilet in your place of residence?	Yes 162 No 206	368
6.	What type of toilet facility do you have in your place of residence?	Pit toilet 174 bucket toilet 116 water system 78	368
6 _b .	If water closet, how do you flush?	Bucket flushing 49 toilet tank flushing 29	78
7.	Have you ever practised open defecation?	Yes 211 No 157	368
8.	Why do you think people practice open defecation in Mararaba?	Lack of education 108 Culture 65 Lack of functional toilet in their houses 195	368

The table above shows that most of the inhabitants of Mararaba are low income earners. This makes them impoverish thereby, affecting their choice of residence as few of the inhabitants of Mararaba live in self-contain or flat. Most live in a room or two rooms apartment which obviously, is in a public compound where the toilet facility is shared by other co-tenants.

The table also shows that, the toilets in these public compounds are not enough for the population and households in the building. This is coupled with the fact that these inhabitants do not have a functional toilet (a good water system toilet with adequate running water) in their place of residence.

The table shows that most of the inhabitants of Mararaba make use of pit toilet while others use bucket toilet. Only a few use water system and flushes directly from the toilet tank. It was also revealed that most people engage in open defecation because, the lack a functional toilet facility in their homes. Lack of education also influenced the practice of open defecation more than the cultural practice of open defecation in Mararaba.

What are the implications of open defecation in Mararaba, Nasarawa state?

S/N	Questions	Responses	Total
9.	Have the inhabitants of Mararaba suffered from cholera outbreak?	Yes 181 No 187	368
10.	Have the inhabitants of Mararaba suffered from pollution?	Yes 219 No 149	368
11.	Have the inhabitants of Mararaba suffered from the outbreak of diarrhoea?	Yes 167 No 201	368
12.	Have the inhabitants of Mararaba suffered from the outbreak of any form of water borne diseases?	Yes 175 No 193	368

The table above revealed that Mararaba have not suffered cholera or diarrhoea outbreak or the outbreak of waterborne diseases but, the area has suffered pollution due to the practise of open defecation in the area.

How can poverty and open defecation in Nigeria be curbed in Mararaba, Nasarawa state?

S/N	Questions	Responses	Total
13.	Enforcement of penalty against open defecators.	Yes 303 No 65	368
14.	Executive order by the president and lawmakers.	Yes 195 No 173	368
15.	Provision of functional toilets in every residential house.	Yes 201 No 167	368
16.	Provision of adequate toilet facilities to serve all the occupants of the households in a residential building.	Yes 211 No 157	368

The above table shows that an executive order against open defecation will curb the practise of open defecation in Mararaba. It also shows that the enforcement of penalty against open defecators and the provision of functional toilet that will adequately serve all the inhabitant of a building will help to curb open defecation in Mararaba.

Findings from the interview

How do you justify poverty as a concomitant of open defecation?

All the interviewees agreed that poverty influences open defecation but, one of the interviewees stated that there was no justification for open defecation considering the harm it constitutes on the society.

One of the interviewees stated that open defecation is prominent in poor neighbourhoods and poor people as such is rarely practiced in rich neighbourhoods, among the rich. He went further to state that outside the fact that the rich might see such practice as barbaric and unsuitable for the social status, the poor may not see it in same light.

An interviewee also added that, education which is most often deprived of the poor does not allow for such practise and exposes one to better economic opportunities that allows individuals to secure good accommodations with functional toilets.

What are the effects of open defecation?

All the interviewees stated that the implications of open defecation is enormous and vary from water borne diseases, diarrhoea, cholera and pollution. Nevertheless, they stated that the current implication Mararaba is currently facing as a result of open defecation is pollution.

One of the interviewee added that the smell coming for the fecal sites are very bad and have become an eye-saw as most people usually try to avoid taking that route.

Another interviewee stated that pollution is one of the major factors causing ill health in Mararaba especially as these fecal sites have become breeding ground for flies and mosquitoes.

How can open defecation be curbed in Mararaba?

One of the interviewees stated that the government should enforce strict penalty against those practising open defecation and landlords who do not provide a functional toilet for their tenants.

Another interviewee added that the provision of mobile toilet will help to curb open defecation in Mararaba. She further stated that there is need for behaviour modification programmes through seminars and workshops that will educate the public on the ills of open defecation and instil in them an open defecation free behaviour.

One of the interviewees further stated that, poverty alleviation programmes will reduce the rate of poverty in Mararaba and thus, reduce the rate at which people patronize landlords with no functional toilets due to the low cost of rent of those houses. This according to him will go a long way in reducing open defecation in Mararaba.

V. DISCUSSION OF RESEARCH FINDINGS

The research found out that low income earners (the poor) are likely to live in public houses (a room or two rooms apartment with no functional toilet; where they have to share the available toilet facility with other co-tenants. Only a few percentage of Mararaba's inhabitant make use of water closet in their houses as most of them make use of bucket toilet or pit toilet. This may be due to the type of residence these category of inhabitants, occupy.

This was found out that almost all the inhabitants of Mararaba seem to have practiced open defecation basically, because they lack functional toilets in their homes. Though, these inhabitants have not experienced the outbreak of Cholera, diarrhoea and water borne diseases, their major challenge as it relates to open defecation is pollution. This also makes them prone to other diseases that accompany pollution.

Therefore, the findings suggested that the enforcement of penalty against open defecators and the signing of executive order will help to curb open defecation in Mararaba. It also suggested that the provision of mobile toilets, implementation of poverty alleviation programmes and the provision of functional toilet, adequate for the population of occupants in a residential building will help to curb open defecation in Mararaba.

VI. CONCLUSION

Poverty influences open defecation in many ways. While those who earn little may not be able to afford good accommodations with functional perhaps due to the high cost of rent of those houses, poverty further deprives them of education which exposes them to better knowledge and economic opportunities that improves their income.

This has increased the incidence of pollution and its concomitant implications on the health and socio-economic life in Mararaba. Therefore, it is pertinent that while efforts are put in place to curb open defecation in Mararaba, poverty alleviation programmes should also be put in place in order to alleviate poverty and make the inhabitants of Mararaba less likely to engage in Open defecation.

VII. RECOMMENDATION

Base on the research findings, the following recommendations were made. They are:

1. Federal and state government should enforce strict penalty against those practising open defecation and landlords who do not provide a functional toilet for their tenants.
2. Federal and state government and NGOs should put their efforts together to ensure the provision of mobile toilet for the populace. They should also organize seminars and workshops to educate the masses against open defecation and modify their behaviours towards such practise.
3. There is need for NGOs, Federal and State government to implement poverty alleviation poverty so as to reduce the rate of poverty in the society and discourage the patronage of houses with low rent with no functional toilet.
4. There is need for the Federal and State government to sign an executive order against open defecation and enforce strict penalty for violators.
5. Landlords should prioritize the construction of functional toilets with consideration with the population of occupants in their house.

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