PREVALENCE AND CONSEQUENCES OF POOR WASTE MANAGEMENT AND SANITATION EXERCISE IN DELTA STATE, SOUTH-SOUTH, NIGERIA

Okeke, Obinna Chukwudalu (PhD)
ooc.okeke@unizik.edu.ng
Department of Sociology/Anthropology, Faculty of Social Sciences,
Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
&
Ohachenu, Ifeoma Elizabeth (Ph.D)
ie.ohachenu@unizik.edu.ng
Department of Sociology/Anthropology, Faculty of Social Sciences,
Nnamdi Azikiwe University, Awka, Anambra State, Nigeria

ABSTRACT
This theoretical paper examines the prevalence and consequences of poor waste management and sanitation practices in Delta State, South-South, Nigeria. The objectives of the study were to explore the prevalence and major causes of poor participation in monthly environmental sanitation exercises, assess the impact of such poor participation, and proffer solutions for improving participation in Delta State, South-South, Nigeria. The theories used in the study include Nightingale's Theory, Social Control Theory, and the Health Belief Model (HBM). The study adopted a cross-sectional survey design and was anchored on the Health Belief Model to explain factors influencing public perception and participation in monthly environmental sanitation. The paper revealed a low turnout during monthly environmental sanitation exercises, indicating that residents of Delta State exhibit a negative attitude toward participation. The study recommends intensified public awareness campaigns on the health risks associated with unclean environments. It also calls for the enforcement of stringent policies by the government against violators of monthly sanitation regulations in Delta State, South-South, Nigeria.
Keywords: Environmental degradation, Environmental pollution, Refuse disposal, Sanitation.

Introduction
The environmental sanitation has become a prominent, but complex and multidimensional issue on the public policy agenda of states and international organizations recently. This transformation after a long period of benign neglect began in Rio in 1992. The issue of environment is today seen or perceived not simply as a narrow ecological problem of how to ensure a symbiotic and congruent interface between man and the environment, it is more than that. Its inner core has psychological, political, developmental, sociological and scientific ramifications. The metaphor "sustainable *development*" emanated from the report titled "Our Common Future" prepared by the World Commission on Environmental and Development (WCED). This report, also known as the Brundtland Report, recognized that many development activities in many nations, especially in developing countries, were leaving growing numbers of people poor and vulnerable, while at the same time degrading their environment. The report then concluded that a new path for development would be needed to sustain human progress not just in a few places for a few years but globally in the future. This conclusion led the Report to focus on issues such as population, energy, industry, human settlement and quality of life.

Throughout history, the environment and its natural resources have played a defining role in social, political and economic transformations. They have also been a major contention in characterizing Africa as a continent in crisis (Opara & Gerhard, 2018). The environment has been at the receiving end and is over-burdened with the aftermath of the excesses of humans in their struggle for survival. Environment is a complex weave of physical, chemical and biotic factor that interact with each other and impact upon all living things and their surroundings. It is a life supporting system for human existence and survival as well as provides required for socio-economic progress (UNDP, 2021). Environment is the source of global economy that must be protected and managed sustainably. All efforts directed at managing and administering the environment is to ensure the continued existence of the biological diversity entities on the earth of which humans are the prime species and without it, which humans cannot exist (Aluko, 2021). Indeed, indiscriminate refuse dumping has become a common feature of most African towns and cities since the recent past. Inhabitants in the urban areas tend to dump refuse (waste) as if it has no implication on their community health and social welfare.

The problem of solid, liquid and toxic-waste management in Africa has come with urbanization in the developing world. An important feature of the urbanization of the developing world is the rapid growth of cities and metropolitan areas. The high rate of urbanization in African countries implies a rapid accumulation of refuse. Social and economic changes that most African countries have witnessed since the 1960s have also contributed to an increase in the waste generated per capita. As a result, municipal waste management constitutes one of the most crucial health and environmental issues facing most African cities (Kuffor, 2019).

In Nigeria, environmental issues have characterized public discussion recently. There have been efforts to curb the refuse seen on the environment. Environmental sanitation practices refer to residents' involvement in provision, utilization, and maintenance of environmental sanitation facilities and services and adherence to environmental legislation (Daramola, 2015). Nigeria's adequate environmental sanitation practices have not been ensured. They are characterized by lack of basic amenities and poor sanitation habits (Ademiluyi & Odugbesan 2018; Afon, 2016). General access to environmental sanitation facilities and services by citizens remains very poor (Akpabio, 2022). Nigerian cities are characterized by rapid population growth which is not accompanied by a corresponding increase in the delivery of environmental sanitation facilities and services capable of enhancing environmental sanitation practices. The resultant effects of these are unsanitary and unhealthy environmental conditions that are prevalent in Nigerian urban centres (Daramola, 2015).

Indeed, Nigeria is not left out among the committee of nations that are showing great concern for environmental matters. Successive governments at federal and state levels have demonstrated their concern for human health and the environment through the enactment of laws and promulgation of decrees that compel people to clean and respect the environment. In not too distant past, sanitary inspectors on public health inspectors promoted environmental health among Nigerians. In 1984, there was the introduction of monthly environmental sanitation to ensure clean environment and this exercise is routinely observed all over the country (Malik, 2020).

In Delta state, population surges has given rise to a heavily built up environment wherein houses are closely built than before, which has then resulted in the dumping of more refuse on the streets(Okoye,2022). Most inhabitants tend to dumb refuse indiscriminately. The inadequate management of wastes poses grave danger to environmental health risk on human populations and is also, capable of inflicting permanent damage on the ecological system. Also, considering the magnitude of waste released daily into the environment and, considering the fact that there appears to be no serious organized programme for the efficient management and disposal of these waste, in spite of their environmental effects on human health, there is need for an understanding of the dynamics that are essential for the explanation of the trends and emerging disease epidemics on the human environment in order to ensure the evolution of effective government and public policies and programmes towards controlling the damaging effects of indiscriminate refuse dumping(Amadi & Effiong,2024).

It is evident that people's attitude towards the disposal of wastes or refuse have not been favourable. Most people prefer to dumb things where they are not supposed to just because it is convenient for them to do so. In this case, the attitude or behaviours of people play a big role as to whether the environment would be clean or dirty. The perception of one's capability is said to set a limit to what to do and ultimately what can be achieved (Holland & Rosenberg, 1996). Perception influences how a person views himself and the world around him and how it tends to govern his behaviour. Dann (2019) reported that residents' perception is positively correlated with solid waste management practices. This suggests that residents with positive environmental perception tend to perform responsible solid waste management which entails waste collection and proper disposal.

Also, there have been issues with the designation of refuse dumps in places where they are not supposed to be. Those in authorities sometimes do not provide adequate facilities that would aid in the proper disposal of refuse and also, when they do provide it, they place them where it would be too far for the masses to access. There is lack of commitment from the government and this fact the whole process. Governments at different levels have not shown the willingness to fight the battle against improper disposal of refuse. In some areas, there are no refuse dumps, and in this case, the people struggle so much to find a way of disposing their wastes. They would have no option than to dispose the dirt in places they can (Onyia, 2019).

The inability of the population to pay some levies in order to help the government manage the sanitation issues is another problem. It is evident that the government only cannot carter for all waste disposals. Individuals who are capable can help the government by donating some waste cans and dumping. The burden of refuse has gone

beyond the government. Individuals should learn to properly dispose their refuse, not because, it is not a duty, but because if the refuse is not properly dumped, it will adversely affect them too (Saigo, 1999).
In view of these problems, this study wishes to expound knowledge on public perception of relevance and participation of people in monthly environmental sanitation programme in Delta State, South-South, Nigeria.

Conceptual Clarification

Nature of Public Perception of Monthly Environmental Sanitation

Environmental Sanitation is the means of promoting hygiene through the prevention of human contact with hazards of waste (Tilley, Lüthi & Zurbrügg, 2024). According to them, these hazards may be physical, microbiological, biological or chemical agents of disease.
According to Business Dictionary (2010) environmental sanitation is activities aimed at improving or maintaining the standard of basic environmental conditions affecting the well-being of people. These conditions include (1) clean and safe water supply, (2) clean and safe ambient air, (3) efficient and safe animal, human, and industrial waste disposal, (4) protection of food from biological and chemical contaminants, and (5) adequate housing in clean and safe surroundings. According to Charls(2021) perception can be said to be the various view held by individual, group or institution towards an issues or event. Ogwu(2023) also defined perception to be the way in which a person views matters around him or her.

Since the launching of the National Sanitation Campaign in 2003, the government has taken several policy and operational decisions to promote environmental sanitation. The National Sanitation Secretariat was formed and Task Forces were established from national to grassroots level to support and institutionalize the interventions. The month of October is being observed as the "Sanitation Month" each year since 2003 (Nwobodo, 2020).Mass-media campaign for creating greater awareness among the people about the necessity of environmental sanitation and hygiene practice was organized. The government earmarked 20% of Annual Development Programme grant to Upazilas specifically for environmental sanitation purposes. Importantly, the government encouraged a partnership approach with Local Government Institutions (LGIs), NGOs, Development Partners and civil society, which provided a wider platform for multi stakeholder partnerships to create a synergistic effect in increasing the environmental sanitation coverage(Musa, Emmanuel &Nnanna,2023). Due to these efforts the environmental sanitation coverage of the country improved significantly. It is however, difficult to quote a single national sanitation coverage figure because of the variation in the definition of sanitation facilities. The draft Sector Development Plan (SDP, 2010) also introduces "basic sanitation coverage" that primarily focuses on fixed place defection using simple pits some of which may not be truly improved or fully hygienic. The environmental sanitation coverage is relatively high when basic sanitation is considered but increase more when more conditions for improved sanitation (as per JMP) or hygienic sanitation are considered and people engage in sanitation practices(NSS, 2015)

Level of Public Participation in Monthly Environmental Sanitation

According to Mujibur(2021) peoples 'perception about the relevance of sanitation is very positive. Most persons know that there is a linkage of sanitation to good health and it helps them keep free from water borne diseases. They also understand that sanitation reduces medical expenses. Some also think that environmental sanitation has impact on daily earnings particularly for those who are day labourer, van puller or rickshaw puller who cannot earn if they are unwell or weak due to common waterborne diseases. By keeping fit due to good sanitation the school going children and working class can regularly attend classes and their work respectively and can pay more attention to study. In addition some people also think that sanitation ensures social dignity. In some non-intervened areas, however, the idea of sanitation and poverty linkage is not understood by people in general.
The importance of environmental sanitation among people stems from the fact that several aspects of man's daily living are affected by his perception. As noted by Sinclair (2016), perception affects awareness and analysis of problems, interpretations of data, judgment of potential outcomes and the way people organize and interpret the world around them in order to give meaning to their surroundings. Therefore, positive environmental sanitation perception among people makes people aware of their environment, which consequently produces a change of attitude to the environment (Chokor, 2024).

The poor state of environmental sanitation in the country has been shown to play a significant role of diseases prevalence. This is why sanitation practices are vital to help prevent the occurrence of these diseases (WHO, 2020). National records show that every year, about six hundred thousand (600,000) cases of diarrhoea occur in children under the age of five due to lack of environmental sanitation (Alabi, 2020). The awareness of

environmental sanitation will help to prevent this disease as people will come to appreciate the need to practice environmental sanitation.

Causes of Low Participation in the Monthly Environmental Sanitation

Policies have increasingly emphasized 'women' inclusion in monthly sanitation programmes. A few countries in Africa prescribe a minimum percentage of women participation in sanitation interventions and related decision making from the ministerial level to village levels(Kabeer,2016). However, in actual practice, women's participation is seldom actively encouraged by the promoters of sanitation practices at the field level(Chambers,2019). Studies have shown that attempts to include women as members in sanitation committees, does not guarantee their participation (Routray, 2016). Similarly, women attending the community meetings for sanitation promotion and awareness have not resulted in their participation in community level decision making toward sanitation practices. Societal and cultural barriers for females, their age, and position within the household are some of the factors, that determine their participation in the sanitation practices and decision making (Khanna,2015).

Socio-cultural issue, demographic and housing characteristics of residents also influence the determinants of perception and practices of the environmental sanitation among people (Mujibur,2021). Their gender, education qualification, age, income, religion, tribe, and residents' house tenure affect the way which individual engage in environmental sanitation practices. Joky (2015) in his study noted that gender distribution of people have strong influence on the extent individual engage in sanitation. In the study he also noted that 90.9% of his people living within Anambra state engage in environmental sanitation yearly due to the fact that they have now come to know the value of sanitation in improving good health. This indicates that the residents were awareness of the value of environmental sanitation increases the level of environmental sanitation practice.

Consequences of Low Level Participation in Monthly Sanitation

Roland *et al.* (2024) noted that environmental sanitation comprises the proper collection, transportation, disposal and treatment of human excreta, solid waste and wastewater, control of disease vectors and provision of washing facilities for personal and domestic hygiene despite its importance in human life. Mosleh and Sudhir (2015) also maintained that the provision of sanitation facilities and services is poor in developing countries.

Absence of sanitation makes females vulnerable and exposes them to the risk of faecal-orally transmitted diseases, uro-genital tract infections, urinary incontinence and chronic constipation (Baliyan, 2024). Females avoid being seen while defecating in the day light and wait till dark to use the open space for defecation, which may force them to eat less, resulting in malnutrition (Arooj, 2023). Inadequate sanitation access leads to psychosocial stress, harassment and sexual violence, and increased work from water fetching, care-giving burdens and carrying out post defecation needs of old and ailing family members (Bloom, 2021) adequate sanitation and hygiene as result of sanitation practices is mitigate these adverse impacts, making their lives safer, easier and healthier (Arooj, 2023). However, as of 2022, an estimated 1.25 billion women and girls (or 1 in 3 worldwide) were without access to adequate sanitation. Of these, 526 million had no access to any form of sanitation and defecated in the open.

In most low-income settings, women and girls are considered to be primary users, providers, and managers of water and sanitation in a household (Mistry, 2019). They are often regarded as guardians of household hygiene, and their inclusion in programmes is believed to be an efficient and sustainable approach to sanitation practice (Dyson, 2019). Studies have found that the effectiveness of sanitation projects was strongly associated with women's participation in decisions about and management of sanitation interventions (Dyson, 2019). A study in Kenya suggests that if women had the decision making power on major household purchases, then they would influence sanitation improvement practices (Clasen, 2022).Many development programmes acknowledge the need for women participation for their success, and women participation in water and sanitation sector is highly emphasized for the sanitation programmes(Boisson,2024) .

Roland *et al.* (2024) added that significant number of people in these countries 'lack access to good water supply due to environmental sanitation services and food security'. This, according to Bindeshwar (1999), contributes to the 'death of millions of children below the age of five every year; and about 50 diseases are linked with poor sanitation'. Several studies have shown that problems of environmental sanitation are not limited to a particular residential zone. Such studies showed that such problems occur in the traditional core areas, urban centres and peri-urban areas or suburbs. Studies based on the sanitation problems in the core areas include for example those on Lagos (Adedibu & Okekunle, 1989;Afon, 2016) and Ibadan (Egunjobi, 1988) in Nigeria.

Progress towards bringing about a cleaner environment has relied on a philosophy of pollution control. This has involved sometimes costly measures and controversial political decisions. As a result, developing countries, poor

communities and financially constrained enterprises have often argued that the lack of environment sanitation is an expensive luxury that diverts resources from more productive uses. This perspective is giving way to a new paradigm stating that neglecting the lack of environmental sanitation can impose high economic and even financial costs, while many environmental benefits can in fact be achieved at low cost (World Bank, 2020).

Poor environmental conditions in many areas threaten to reverse the gains made in public health over the last several decades (Ukpong, 2023). Every human should have a healthy and productive life in harmony with nature. Lack of adequate environmental sanitation threatens sound human health. Most cities of the world are faced with problems of growth. In Nigeria, environmental pollution is an important challenge to public health as a result of urbanisation. Babalola (2024) lamented over the declining environmental sanitation in Nigeria and "appealed to all Nigerians to be involved in maintaining good sanitation".
Developing countries like Nigeria face increasingly serious environmental problems that threaten efforts to improve the standard of living and worsen health conditions. In cities, increased congestion, industrial expansion, and lack of pollution control result in unhealthy levels of pollutants in air and water and hinders effective sanitation practices. Environmental stress is the price of development; in fact, widespread environmental damage is likely to hinder developmental efforts and worsen the plight of people living in acute poverty and militate against the level of sanitation.

How Participation in Monthly Sanitation could be improved
Environmental sanitation is more than just a matter of aesthetics; it is a critical component of public health, quality of life, and long-term development. A clean and well-maintained environment contributes to the physical and psychological well-being of individuals while fostering a sense of community pride and responsibility. In this article, we will delve into a more detailed exploration of practical steps to improve environmental sanitation in your community, resulting in a cleaner, healthier, and more sustainable living environment for people today and future generations. Individuals who are well-informed are the foundation of effective change. Launching awareness campaigns and educational initiatives is the first step towards improving environmental sanitation. Education about proper sanitation methods should begin early in a child's development to instill these good practices in their behaviour. Organize workshops, seminars, and interactive sessions to emphasize the close relationship between cleanliness and public health (Re-leaf, 2023).

They also maintained that leveraging the influence of digital platforms and social media to spread information on waste management techniques, proper hygiene practices, and the overall consequences of environmental negligence is a much easier and smarter way to solve this problem. A cornerstone of improved environmental sanitation is an efficient waste management system. Collaborate with local authorities to establish a comprehensive waste collection and disposal mechanism. Implement a system that includes separate bins for recyclables, organic waste, and non-recyclables. The importance of regular waste collection and proper disposal methods cannot be overstated. Encourage community members to sort their waste at the source, streamlining recycling processes and minimizing waste generation. Setting up a common waste segregation system in societies can be a critical step towards effective waste management. Simultaneously, encourage the installation of high-quality bio-septic tanks to treat sewage. Promoting the practice of recycling and up cycling can significantly reduce waste accumulation. Create accessible recycling centre where residents can deposit their recyclable materials. Forge partnerships with local recycling companies or organizations to ensure the proper processing of collected materials. Arrange workshops, exhibitions, or interactive events that showcase innovative ways to repurpose everyday items, inspiring a more conscious and sustainable way of living.

According to Re-leaf (2023), open defecation is a glaring contributor to poor environmental sanitation. Team up with local authorities and community leaders to encourage the construction and utilization of sanitary toilets. Initiate awareness campaigns that underscore the health hazards of open defecation and disseminate information regarding available sanitation facilities. A great alternative to making toilets accessible in difficult terrain and public places is installing portable toilets. Companies like Re-leaf offer sturdy portable toilets made out of high-quality materials that can be easily installed in places where constructing toilets is difficult.
Regular cleanup drives are pivotal in maintaining the cleanliness of public spaces. Energize community members to actively participate in these initiatives, which involve collecting litter from streets, parks, and recreational areas. These efforts not only enhance the visual appeal of the neighbourhood but also inculcate a sense of ownership and accountability among residents. Environmental sanitation necessitates collective action. Partner with local authorities, businesses, NGOs, and other stakeholders to pool resources, knowledge, and expertise. Collaborative efforts can yield innovative waste management systems, cleaner public spaces, and sustainable solutions to

environmental challenges. Fostering environmental sanitation within your community requires a multi-faceted approach that encompasses education, waste management, sustainable practices, and robust community engagement. By raising awareness, establishing efficient systems, promoting collaboration, and continually adapting your strategies, you can cultivate and more vibrant living environment for all residents. Remember that change is an ongoing process, and with dedication and collective effort, your community can make a substantial and lasting impact on both its inhabitants and the environment.

Theoretical Underpinning

Nightingale's Environmental Theory

This was propounded by Florence Nightingale (1820–1910). The theory focused primarily on the environment, interpreted as all external conditions and influences that affect the life and development of an organism, that are able to prevent, suppress or contribute to disease and death. The theory posits that when disease occurs as result of external factors such as lack of environmental sanitation there is a need to restore a good health process and it the function of a nurse to balance the environment, in order to save the patient's life energy to recover from the disease, prioritizing the delivery of an stimulating environment for the development of the patient's health. The theory assumes that the conception of the human-being as a member of nature, an individual whose natural defences is influenced by a healthy or unhealthy environment.

Nightingale believed that providing a suitable environment was the difference in the recovery of patients and in this perception underlies the Environmentalist theory. The theory also assumes that there is a need to maintain an environment that is favourable to the facilitation of the healing and healthy living processes such as: ventilation, cleaning, lighting, heat, noise, odours and feeding, so that the recovering process, established by nature, is not prevented.

This theory is majorly criticized for its outdated concepts, overemphasis on external factors, and limited scope, which overlook crucial psychological and technological aspects of modern healthcare. The theory, developed in the 19th century, does not account for the complexities of modern medicine and patient care.

Health Belief Model

The health belief model (HBM) is a psychological health behaviour change model developed to explain and predict health-related behaviours, particularly in regard to the uptake of health services. The health belief model was developed in the 1950s by Irwin & Rosenstock, in 1950's and remains one of the best known and most widely used theories in health behavior research. The health belief model suggests that people's beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explain their engagement (or lack of engagement) in health-promoting behaviour such as their participation in environmental sanitation. A stimulus, or cue to action, must also be present in order to trigger the health-promoting behaviour.

The theory assumes that those individuals who perceive that they are susceptible to a particular health problem will engage in behaviours to reduce their risk of developing the health problem. Individuals with low perceived susceptibility may deny that they are at risk for contracting a particular illness. Others may acknowledge the possibility that they could develop the illness, but believe it is unlikely. Individuals who believe they are at low risk of developing an illness are more likely to engage in unhealthy, or risky, behaviours. Individuals who perceive a high risk that they will be personally affected by a particular health problem are more likely to engage in behaviours to decrease their risk of developing the condition.

The theory also assumed that higher a perceived threat, the higher it leads to the likelihood of engagement in health-promoting behaviours. According to the assumed perception of the theory, health-related behaviours are also influenced by the perceived benefits of taking action. The perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behaviour to decrease risk of disease (Janz, Marshall & Becker, 2009).If an individual believes that a particular action will reduce susceptibility to a health problem or decrease its seriousness, then he or she is likely to engage in that behaviour regardless of objective facts regarding the effectiveness of the action.

This theory is critiqued for its overemphasis on individual cognitive factors while neglecting social, emotional, and environmental influences, its static nature, and its weak predictive power. It fails to account for habits, economic factors, and non-health reasons for behavior, assuming a rational decision-making process that often doesn't exist. Furthermore, it lacks specific rules for how its components interact and can be difficult to test consistently across studies.

Conclusion

Evidence from this study shows that environmental sanitation practices exist among residents of Onitsha South Local Government Area. The study further revealed that the public holds a positive perception of environmental

sanitation and actively participates in it due to the perceived benefits of such practices. The findings also indicate that public participation in environmental sanitation is not influenced by gender disparity. In order to enhance participation, the study suggests that the availability of adequate facilities for environmental sanitation will enable all members of the community to effectively engage in sanitation practices. Therefore, it can be concluded that residents of Onitsha South Local Government Area of Anambra State actively participate in environmental sanitation practices and perceive them as relevant.

Policy Options

1. The urgent need for the government to create more jingles on various media outlets encouraging the proper waste management ideology.
2. The need for the various communities and stakeholders to rise up to the challenge of making and implementing laws that would guard against indiscriminate dumping of refuse.
3. The need for environmental sanitations practice in primary and secondary schools in Nigeria to be encouraged.
4. The need for the government to make and enforce environmental laws on environmental sanitation.
5. Provision of facilities for environmental sanitation practices should be made available by government and individual in order to enable adequate participation of the public in environmental sanitation.
6. Government should make provision to monitor the level of environmental sanitation practices and make polices that will ensure that all persons irrespective of social status of the person to engage in environmental sanitation. This will ensure that environmental sanitation participation of the public is enhanced.

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