

## HEALTH EDUCATION APPROACHES IN TACKLING ENVIRONMENTAL CHALLENGES IN NIGERIA

BY

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### Abstract

*Despite the efforts of government and non-government organization, environmental challenges such as pollution related components, oil spillages, deforestation, erosion, and flood cases, increasingly impact public health, economic development and overall quality of life in Nigeria, highlighting the need to evaluate and strengthen health education strategies in the country. These issues are further exacerbated by climate change, leading to increased climate variability, more intense rainfall, and worsening land degradation. The paper therefore examined the health education approaches geared towards tackling environmental challenges in Nigeria. The paper also explores the various health education responsibilities and strategies towards ensuring environmental sustainability. Various environment challenges affecting Nigeria were mentioned, health education theories on environmental challenges as well as the impacts of environmental challenges on health of the population were discussed. The paper concluded that effective health education approaches empowering individuals and communities to adopt environmentally friendly behaviors, supports policy advocacy and encourages local initiatives aimed at environmental preservation among others should be considered. It was recommended that communal workshops and seminars would raise awareness about environmental issues and their impacts on health. This approach not only enhances environmental sustainability, but also improves public health outcomes, contributing to a healthier and more resilient Nigeria.*

*Keywords: Health, health education approaches, environmental challenges.*

### Introduction

Environmental challenges in Nigeria have become increasingly severe, impacting public health, economic development and the overall quality of life. These challenges among others include; pollution problems (air, water and soil), deforestation of inadequate waste management, desertification, and climate change effects (Famuyiwa & Kadiri 2016). Environmental issues according to Federal Ministry of Environment (FME) (2016), pose significantly health risks, leading to respiratory diseases, waterborne illnesses, vector-borne

diseases, and other health complications. Climate change has consequential effects, noticed in term of extreme hotness of the weather, rising sea level, loss of land for farming and distribution of diseases as well as their impact on the economics (Famuyiwa & Kadiri, 2016).

The environmental issues facing the Nigerian state are so enormous with disastrous effects. The nature of these challenges is diverse and encompassing their issues like land degradation, pollution related problems, biodiversity loss and the impacts of urbanization and industrialization (Onuoha et al, 2021). Moreso, Hyellai et al (2021) acknowledged that the environmental health related risks are becoming a primary concern in Nigeria, with diverse environmental problems such as pollution related components, oil spillage, deforestation and desertification, erosion and flooding. The recent incidents of flood cases in Nigeria has been impactful submerging towns and killing over 500 people and displacing over 1.2 million people across 33 states. The most recent flood cases in Maiduguri in Borno State, Mokwa in Niger State and Kogi State has led to killings of over 150 indigenous populations and displacing of over 500 people (Chenemi, 2025). The flash floods were triggered by heavy rain, with poor drainage channels in most of the prone states.

In response to these pressing issues, health education emerges as a vital strategy. Mitigate frequent occurrences According to Moronkola (2022) effective health education can promote awareness, change behaviours and foster community engagement in environmental management (Akpodiogaga & Odjugo, 2020). Health education approaches empowers individuals and communities with knowledge and necessary skills to adopt environmentally sustainable practice that positively influence health outcomes (Shitu, 2021). The effectiveness of health education approach varies depending on their design, implementation and cultural relevance within the diverse Nigerian contexts. Traditional methods such as community outreach, school-based programmes, media campaigns, and policy advocacy can be employed to address these issues (Farooq, Meray & Sensing, 2019).

Despite these efforts, environmental challenges persist, highlighting the need to evaluate and strengthen health education strategies. This paper therefore explores current health education approaches in Nigeria to mitigate the impact of environmental challenges on individual and community behaviours, with the best practices of integrating environmental considerations into health education frameworks. The goal of this paper is to inform policy makers, educators and health practitioners on the need of effective intervention that can be contribute to sustainable environmental management and improved public health in Nigeria.

## The Meaning and Nature of Environmental Challenges in Nigeria

Environmental challenges refer to the problems caused or exacerbated by human activities and natural processes that threaten the sustainability, health and well-being of the environment and its inhabitants. In Nigeria, these challenges impact the land, water, air and ecosystems ultimately affecting the quality of life, agriculture, health and economic development in the country (Shitu, 2021). Moreso, environment challenges are intertwined with the developmental activities and require coordinated policy efforts, sustainable practices and community involvement to mitigate their impact and promote environmental sustainability.

These challenges encompass environmental degradation which is the decline in the quality of the environment, making it less suitable for human use and other life forms (Onuoha et al; 2022). The deterioration of the natural such due to human activities and natural disaster, impact various aspect of life, including health, livelihoods and the ecosystems. Environmental issues did not just happen in Nigeria, they are planned and masterminded by the individuals and community's failures (Akambe & Kpae, 2017). In Nigeria include pollution, related problem poor sanitation, ozone layer depletion, desertification, flooding, erosion, bushfires, deforestation and soil contamination (Ibrahim et al, 2020). Similarly, Evelyn and Tyay (2012) noted that indiscriminate use of pesticides, insecticides, herbicides as well as the indiscriminate dumping of rubbish, excreta and animal dung, crude and refine oil spillages and large-scale bush burning are major causes of pollution in Nigeria.

The nature of environmental challenges in Nigeria are diverse and significant stemming from rapid population growth, urbanization, economic activities, and inadequate governance. The Key challenges according to FME (2016) includes;

- i. **Deforestation:** This involves extensive clearing of forests for agriculture, logging and infrastructure development leading to loss of biodiversity and soil erosion.
- ii. **Pollution:** the components are the air, water and soil pollution caused by industrial activities, vehicle emissions, oil spills and improper waste disposal.
- iii. **Desertification:** this includes expansion of desert areas, particularly in the northern region due to overgrazing, deforestation and climate change
- iv. **Oil Pollution:** this has to do with frequent oil spills and gas flaring, especially in the Niger Delta, damaging the ecosystem and affecting local communities.
- v. **Climate Change:** This has to do with changing weather patterns, rising temperatures and unpredictable rainfall affecting agriculture and water resources.

- vi. **Waste Management:** this has to do with inadequate waste collection and disposal systems leading to environmental degradation and health hazards.
- vii. **Land Degradation:** The overuse of land for agriculture and construction activities, mining of golds and other essential minerals result in reduced productivity and environmental instability. Addressing all these challenges requires integrated policies, sustainable practices, community involvement, and adherence to environmental regulations.

## Health Education Theories on Environmental Challenges

According to Moronkola (2017), health education theories can be applied to address environmental challenges in Nigeria by promoting understanding of how environmental issues impact health and encourage responsible behaviours. Theories like the health belief model, trans-theoretical model, and social cognitive theory can be used to develop interventions that has to do with behaviours related to pollution, waste management and resources use. The Health Belief Model (HBM), helps individual and communities to perceived risks and benefits related to environmental issues. This theory creates awareness on health risks associated with pollution and other environmental threats to health and wellbeing. The theory also suggest that individuals are more likely to adopt environmentally responsible behaviours if they perceive the threat to be serious, and the benefits outweighing the costs, and they have the means to act (Menga, 2024).

Similarly, the Social Cognitive Theory (SCT) emphasizes the interaction between individuals, their environment and their behaviours (WHO, 2018). In Nigeria context, the SCT can be used to promote environmental stewardship by showcasing successful community initiatives and empowering individuals to take action. According to Moronkola (2017), the SCT emphasized on the notion that external factors influences people to act the way they do, and such factors are triadic interaction of behaviour, personal and environmental factors. Utilizing the SCT is essential in promoting community initiative for reducing pollution such as tree planting programmes, and encouraging participation by highlighting social norms and collective action (Gouge, 2023). Gouge (2023) also reported that the Diffusion of Innovative Theory (DIT) of environmental health education can be used to comprehend how information about sustainable environmental practices is adopted by different groups and communities. This theory explains how new ideas and practices spread within a population. It highlights the importance of effective communication and targeting different communities to promote widespread adoption of sustainable practices.

The Nightingale Environmental Theory (NET) developed by Florence Nightingale, the founder of modern nursing is another theory of health education with essential impact on environmental challenges. According

to Megan (2024), the Nightingale Environment Theory (NET) believed that ten major concepts influenced the environments. Concepts such as ventilation and warming, light and noise, cleanliness of the environment, health of houses, bed and bedding, personal cleanliness, food, hope and advice, as well as observation impacts the environment. This theory prioritizes environmental factors such as fresh air, clean water, efficient drainage, cleanliness of the patient and care area, and sunlight as essential for human health and healing (Heather, 2020).

## Impact of Environmental Challenges on Health

Pollutants in the environment or climate related events can have a massive impact on our health. According to Leyla (2025), despite progress in many areas, environmental hazards continue to affect public health. Heavy metal emissions, pollution, noise and heat waves are directly related to asthma, hearing loss, dehydration and heart diseases (Hyellai et al, 2021). Environmental challenges such as climate change, have a significant negative impact on human health, contributing to both infectious and non-communicable diseases. The World Health Organization (WHO) and other international organizations emphasize that environmental pollutants can cause health problems such as respiratory diseases, heart diseases and certain cancer (WHO, 2018). In developing countries like Nigeria, people with low incomes live in polluted areas and are exposed to unsafe drinking water. These populations are vulnerable to water and foodborne diseases such as typhoid fever, cholera, dysentery, and high prevalence rate of malaria (Brusseau, Ramirez & Maximillain, 2019). Children and pregnant women living in these areas are at higher risk and health problems related to lack of waste management and pollution are severe (Landrigan, 2017).

Shilpa et al (2023), acknowledged that varieties of environmental contaminants significantly contribute to human diseases affecting climate change and public health, resulting in increased mortality and morbidity due to lack of adequate health information of the people in remote and hard-to-reach areas. The inhabitants in the remote areas are faced with pollution problems, inadequate waste management, poverty and limited adoption of new technologies. There are also higher risks of health issues and environmental challenges affecting them. Kyriaki and Pheobe (2009) enumerated the impacts of environmental challenges on health as follows:

- i. Air Pollution: breathing polluted air can cause respiratory diseases such as asthma, bronchitis, and other chronic lung conditions. Breathing polluted air is also linked to cardiovascular problems and cancers.
- ii. Water Pollution: problem can lead to water borne diseases like cholera, dysentery and hepatitis. Long term exposure to polluted water can cause gastrointestinal issues and other health problems.

- iii. Soil contamination exposes an individual to chemicals and heavy metals which can eventually lead to skin diseases, gastrointestinal issues and cancers.
- iv. Climate Change Issues may impact the spread of vector borne diseases like malaria and dengue fever. Extreme weather problems can also cause injuries, displacement and mental health issues.
- v. Loss of biodiversity may lead to habitat destruction and pollution. This can impact the ecosystems, stability and can also affect food security and diseases regulation.
- vi. Noise Pollution can cause chronic noise exposure which may subsequently lead to stress sleep disturbances and cardiovascular diseases.
- vii. Chemical exposure such as pesticides, industrial chemicals and urban pollutants can lead to hormonal disruptions cancers and other health issues.

Addressing these challenges requires integrated efforts including pollution control, sustainable practices, policies and raising public awareness.

## **Role of Health Education Tackling Environmental Challenges**

Management of waste disposal has become a major concern in Nigeria despite several attempts by successive governments and non-governmental organizations in tackling them. According to Moronkola (2017) health education play a crucial role in addressing environmental challenges in Nigeria. This can be achieved through promoting sustainable practices, increasing awareness and enabling informed decision making regarding environmental issues. More so, integrating environmental health education into various sectors such as schools, communities and workplaces can also help to mitigate environmental risks and promote sustainable development (Oladimeji, 2019). According to Oladimeji, a comprehensive health education approach is crucial for addressing environmental challenges through integrating environmental health topics into school curricula, this can equip young people with the knowledge and skills to understand and address environmental issues, fostering a sense of responsibility, and environmental stewardship.

Similarly, utilizing public health campaigns, such as promoting water sanitation and hygiene (WASH), can raise awareness about the link between outbreak encouraging individuals to adopt healthier practices (WHO, 2024). Health education also utilizes community-based approaches to empower individual towards developing sustainable environmental change. The role of health education in promoting sustainable practices can lead to waste management and pollution control (FME, 2016). This can lead to responsible waste disposal practices, reduces pollution and mitigate the risks associated with exposure to pollutants.

Famuyiwa and Kadiri (2016) acknowledged that environmental sustainability requires health education strategies such as community engagement school-based health education, policy advocacy and collaboration, behavioural change as well as monitoring and evaluation to foster sustainable environmental development. More so, implementing approaches such as integrating environmental health into school curricula, fostering interdisciplinary partnership, and developing practical advice on reducing exposure in pollutants, plays a crucial role in addressing environmental challenges (Jackson et al, 2006).

## Health Education Approaches in Tackling Environmental Challenges

The environment is threatened by climate change, land degradation, pollution, storm water control and erosion, desertification, inefficient use of energy resources, loss of biodiversity, disasters through fire outbreaks, flooding, petroleum pipeline vandalization and deforestation. To deal with these environmental challenges, there is need for mitigation and adaptation strategies to ensure environmental sustainability (Famuyiwa & Kadiri, 2016). Health education approach towards tackling environmental challenges focuses on educating individuals about the interconnectedness of human, animal and environmental health, empowering them to make informed decisions and adopt sustainable practices. According to WHO (2018), health education approach of tackling environmental issues involves integrating environmental health into education through curriculum integration, skill-based learning, comprehensive school health programmes and promoting positive behaviours. Community-based initiatives involve community engagement, raising awareness, supporting sustainable practices and addressing specific environmental hazards (FME, 2016). More so, health education approach of fostering environmental stewardship involves connecting health and environment, promoting sustainable lifestyles and empowering and equipping individuals with the knowledge and skills to become active participants in creating a healthier environment for themselves and future generation (Ibrahim et al, 2020). Health education approach entails empowering individuals and communities to make informed decisions, adopt sustainable practices and collectively work towards a healthier environment for all.

According to Onuoha et al (2022), health education approaches are geared towards addressing environmental challenges in Nigeria through promoting awareness, behavioural change and community participation. Such approaches require collaboration among government agencies, non-governmental organizations, community leaders and the private sector to create sustainable environmental health improvements. Key health education approaches in tackling environmental problems, according to Hyellai et al (2021) and FME (2016) include;

- **Capacity Building:** this involves training and re-training of health care workers, teachers, and community leaders on environmental health issues to enhance their ability to educate and advocate effectively. Capacity building as a health education approach in tackling environmental challenges is a strategic method design to enhance the skills, knowledge, and competencies of individual and communities in Nigeria to effectively address environmental challenges. This approach emphasizes empowering local stakeholders like health workers, community leaders, and policy makers with the necessary know how of implementing sustainable solutions. The key concepts of capacity building in tackling environmental challenges include knowledge enhancement, skills development, resource mobilization, community engagement and policy advocacy (Federal Ministry of Environment, 2013). In Nigeria, integrating capacity building into health education programme can lead to more sustainable environmental management, improved health outcomes, and resilience against environmental threats.
- **Behaviour Change Communication (BCC):** this approach involves using targeted messages and carrying out interventions to promote behaviours such as proper waste disposal, use of sanitation facilities, and conservation practices. The BCC approach uses strategic, tailored messages and communication channels to encourage individual and communities to adopt positive, sustainable environmental practices as a proper waste management and resource conservation. This approach moves beyond awareness, it uses theories and modules to address behavioural, social and memory factors to tackle environmental challenges. Thus, the BCC employ specific messages to inform and persuade people about environmental issues; it emphasizes the promotion and sustenance of positive behaviours that contribute to environmental sustainability; uses multi-stage approach to influence the people; involves communities in interactive processes and recognizes that behavior change requires environmental support ( FME, 2016).
- **Community Based Education:** This has to do with engaging local communities through workshops, seminars, town hall meetings and outreach programmes to help raise awareness on environmental issues such as pollution, deforestation, and waste management. Making messages available in local languages and cultural contexts would help to increase effectiveness. The National Solid Waste Management in some Nigeria towns and cities focuses in training community health workers, local artisans, and residents on proper waste disposal, recycling, and sanitation to reduce vectors-borne diseases linked to environmental factors. The Lagos State Ministry of Environment in 2018, uses community-based health education campaigns, outreach and demonstration projects to reduce cholera and malaria cases.
- **School Based Programmes:** This has to do with integrating environmental health topics into school curricula. Such methods would help to encourage early awareness among children and adolescents. More so, school clubs, competitions and projects can foster a proactive attitude towards environmental

conservation. Nigeria Conservation Foundation (2017), reported that incorporating environmental health modules into school curricula, as well as active participation of both the teachers and students in tree planting, and cleanup campaign would help to increase awareness among youth and communities about environmental health issues. The foundation believed that training of both students and teachers in on environmental sustainability, conservational practices, would have tremendous positive impact on environmental degradation.

- **Mass Media Campaign:** Utilizing radio, TV, Social media & print media to disseminate information about environmental health risks and best practices can reach a broad audience quickly. The mass media are powerful health education tools in raising public awareness, educating the general public on sustainable practices, shaping attitudes and behaviours, and advocating for policy innovation. This achieved through channels such as print media, radio, television, and online platforms such as the social media like twitter, Instagram, internet, and health promotion models (social marketing). The mass-media has a far reaching catchment areas and information on environmental challenges can be effectively disseminated to individual and communities in hard-to-reach areas (Moronkola, 2017).
- **Participating Approaches:** This involves utilizing community members in identifying environmental health issues and solutions can foster ownership and sustainable change, the techniques for participating approaches include rural appraisals and community action exercises. This approach empowers individuals and communities to become stakeholders in addressing issues such as pollution and climate change by leveraging their experiences, promoting environmental sustainability and facilitating collaboration across disciplines and borders.
- **Midstream and Upstream Interventions:** this involves educating policy makers, stakeholders and industries about sustainable practices to ensure environmental health is prioritized during policy development and implementation. This approach addresses the root causes and underlying determinants of health and environmental problems. This means tackling systemic issues like poverty, rapid urbanization, and resource exploitation that contribute to environmental challenges and poor health outcomes (WHO,2018).

In Nigeria, applying the midstream and upstream principles into health education approach in tackling environmental challenges would help in shifting from reactive treatment to preventive root-cause solutions. The upstream approach would address fundamental socio-economic factors and policies influencing environmental health such as pollution problems or promoting sustainable resource management. Thus, the midstream and upstream approaches focus on early interventions and capacity building like integrating environmental health education into school curricula

or partnering with communities on waste management programmes to prevent environmental degradation (Federal Ministry of Environment, 2013).

## Conclusion

Health education approach towards tackling environmental challenges in Nigeria is a vital strategy that promotes awareness, behavioural change, and community engagement to address pressing environmental issues. By integrating health education into environmental policies and community programmes, Nigeria can foster sustainable practices that reduce pollution, conserve natural resources, and mitigate the health impacts of environmental degradation.

Effective health education empowers individuals and communities to adopt environmentally friendly behaviours, supports policy advocacy and encourage local initiatives aimed at environmental preservation. This approach not only enhances environmental sustainability but also improves public health outcomes, contributing to a healthier and more resilient Nigeria.

## Recommendations

Addressing environmental challenges in Nigeria through health education requires a multi-faceted approach that engages communities, leverages technology, and collaborates with stakeholders. Some useful recommendations include:

1. There is need to conduct community workshops and seminars to raise awareness about environmental issues and their impacts on health, such as pollution, water scarcity and waste management.
2. There is need to incorporate traditional leaders and local influences especially at hard-to-reach communities to ensure cultural relevance and greater acceptance.
3. Modules are sustainable practices; conservation & community health should be included in the school's curriculum to create awareness from young age.
4. There is need to utilize radio television and social media platforms to disseminate information widely, especially in reaching rural areas.
5. Need to collaborate with NGOs governments agencies and international bodies to leverages resources, foster partnerships especially health and environmental organizations.
6. Workshop should be organized for policy makers, training programmes for health workers and educators, on environmental health topics to enable them to re-educate theirs effectively.
7. Encourage and initiate community driven support and projects in form of interventions, tree planting, recycling and clean up campaigns.

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