

ENVIRONMENTAL HEALTH EDUCATION AS PRECURSOR FOR SAFER ENVIRONMENT

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Abstract

A well-informed public is the cornerstone of sustainable development, and environmental health education plays a pivotal role in equipping individuals and communities with the knowledge and practices necessary to foster a safer, healthier environment. The paper discusses environmental health education as a tool for promoting sustainable development and forming attitudes toward maintaining a safer environment. In doing this, the paper explained the concept of environmental health education as a process that provides opportunities for people to engage in environmental issues and take action to improve the environment, justified the relevance of environmental health education in creating environmental literacy and developing a greater respect for nature that will enhance effective and responsible decisions making and then identified some major challenges of environmental health education in Nigeria. Based on the discussion of ideas in the paper, recommendations were made that environmental health education should be incorporated into the secondary school curriculum, community members, stakeholders in health sector and environmental health professionals should take proactive measures in creating awareness on the significance of keeping the environment safe for a healthful living.

Introduction

One of the first things that readily come to mind when thinking about safety is protection from harm, and it is usually a physical harm that is first envisioned especially when it has to do with the environment. Kumar (2021), defined environment as the outer biophysical system in which people and organisms exist. In a broad sense, the word environment can be used to refer to anything, living or non-living that surrounds and influences living organisms. A safe environment for health care is an important prerequisite to developing interpersonal and therapeutic relationships, leading to good healthful living. The safety of environment is achieved most especially when the concepts of environmental health education are taken paramount.

Environmental health education according to Vladova (2023), is a process that empowers people to engage in problem-solving, explore environmental issues and take actions to improve the environment. The essence of environmental health education lies in the fundamental values of education for sustainable development by allowing people to make informed and responsible decisions. Kumar (2021), added that environmental health education is an integral process which deals with man's interrelationship with his natural and man-made surroundings including the relation of population growth, pollution, resources allocation and depletion, conservation, technology, urban and rural planning to the total human environment. Environmental health education is a study of the factors

influencing ecosystems, mental and physical health, living and working condition, decaying cities, and population pressures.

Environmental health education therefore is the process of recognizing values and clarifying health concepts related to environment and its problems in order to develop skills and attitudes necessary to understand the environment. It also entails practice in decision making and self-formulating a code of behaviour about issues concerning environmental quality. Fang *et al* (2023) maintained that environmental factors need to be considered in formulating socio-economic policies, adding that environmental health education aims to raise awareness of the negative impacts of human activities, environmental decision-making, inspire students' social responsibility, and cultivate environmental literacy. Becker *et al* (2017) stated that the goal of environmental health education is to achieve environmental awareness, develop respect for nature, and take actions that help protect the environment. The explanation of environmental health education thus is pointed to one central theme "safe environment" and to achieve a safe environment, effective environmental health education is a necessary prerequisite.

According to Guiding Principles of Environmental Education (2023), effective environmental education is critical for shaping attitudes and appropriate behaviours and, as a long-term outcome, mitigating the adverse effects of environmental degradation and promoting sustainable development. For environmental health education to be effective, it must incorporate guiding principles that address environmental issues. United Nations Educational, Scientific and Cultural Organization (UNESCO) (2018), developed a set of principles that include various components such as knowledge, skills, attitudes, motivation, and commitment to finding solutions to current and future environmental problems. Effective environmental education should also make individuals understand the importance of a healthy environment and a cleaner world. To achieve this, developing and implementing instruction that incorporates high-quality educational foundations and practical problem-solving approaches is necessary. It should also include education about environmental protection, promotion of actions beneficial to overall environmental health, and clarification of the impact of human progress on the environment. To minimize the potentially harmful effects of modern technological developments on the environment, effective environmental education should offer ways to prevent environmental degradation. National Extension Water Outreach Education (2023) stated that for environmental education to be more effective, it should include first-hand experience and hands-on activities. Benciu *et al* (2020) observed that promoting environmental health education is essential for ensuring a sustainable and healthy environment as it promotes the conservation of the natural environment, encourages participation in environmental activities, and develops strategies that sustain and enhance the environmental quality and protect it.

Kujoh *et al* (2020), maintained that we are living at a time when human impact on the environment and the resulting impact of the environment on human health are rapidly growing global concerns. The top international priorities include slowing the rate of human-induced climate change, protecting water and air quality, reducing the health impact of disasters, and minimizing human exposure to toxic chemicals. There is also growing concern that current efforts aiming to curb climate change are insufficient. In these

circumstances, it is essential that environmental health education produces citizens capable of intelligent engagement with environmental health concerns. There are many environmental problems around our cities and rural areas: pollution, waste disposal, slums and land degradation (erosion, soil infertility, flood, deforestation). The impact of environmental problem has been seen and felt by everybody. Therefore, the solution to the many-sided problems of environmental degradation all around us call for the involvement of all citizens. It is in recognition of this fact, that there is a global education termed "environmental health education". Sauve and Godmaire (2015), observed that environmental health education should deal with the following realities: the links between human health and the quality of life systems (ecosystem integrity); the quality of life of humans and other living beings in relation to environmental conditions (biophysical conditions, which are closely related to sociocultural conditions); the effects and impacts of human activities on components of the environment and its dynamics, which may in turn affect human health; evaluating the health risks associated with environmental factors and life styles; individual and collective solutions to problems that may arise "upstream" (in components of the environment) and "downstream" (in human health); and conditions for well-being in relation to the environment, that is, the conservation or creation of environments that foster health and the adoption of ways of relating to the environment that promote both human and ecosystem health. According to Olaniran (2015), environmental health education has achieved notable success in industrialized and developing countries but a large proportion of the world's population in developing countries like Nigeria is either ignorant or insufficiently sensitized to issues relating to environmental conservation, environmental degradation (pollution) and their impact on health, welfare and indeed survival of human species. Environmental health education thus assists the public to understand, appreciate and change attitude favourably towards environment.

According to Moronkola (2016), health education is the study of health behaviour, which is concerned with how people behave when they are afflicted with common diseases and other health issues. Environmental health education aims at helping people understand that health is an asset; inspiring people to adopt health-promoting behaviours by providing appropriate knowledge and helping to develop positive attitude; supporting people to make decisions about their health and achieve the necessary confidence and skills to put their decisions into practice; to train the people with skills, knowledge and attitude; to promote the development and proper use of health service; to develop desirable health practices and health habits; to develop health consciousness in the school and in the community; to combat the superstitions and prejudices in the community; to provide a healthful environment for physical and mental growth.

Alemma-Ozioruva (2017), stated that management of waste disposal has become a major concern in Nigeria despite several attempts by successive governments and private organisations in that direction. That is why it is a common sight across the country today to see heaps of festering waste dumps in almost all nooks and crannies of the communities. Residential apartments, markets, waterways, highways, streets and undeveloped plots of land have been turned to waste dumps for many households. No wonder many say that in Nigeria, waste increases in a geometrical progression, and collection and disposal is at an

arithmetical progression Oladimeji and Omosowon (2020), stressed that efforts should be made to improve the quality of urban centres, especially through environmental control and sanitation through the formation of various legislations and edicts. They expressed concerned over the inadequate management of solid wastes which often leads to the mounting of refuse, and degradation of the environment causing serious threat to human health management therefore should be a priority. However, with adequate health education with special emphasis on environmental education and people centered reorientation programmes, the environmental consciousness will be ignited in them which will lead to a positive lifestyle modification.

Characteristics of a safe environment facilitated through effective environmental health education

A safe environment through environmental health education is essential for effective learning and health promotion. Such an environment ensures the well-being of learners, educators, and the community while fostering meaningful engagement with environmental health issue. The key characteristics of a safe environment that can facilitate through environmental health education include the following:

1. *Physical Safety*: The learning space should be free from physical hazards such as unsafe drinking water, poor air quality, exposed electrical wiring, or structural weaknesses. World Health Organization (WHO, 2021) emphasizes that physical safety is foundational for health-promoting schools and educational settings.
2. *Psychological Safety*: Learners should feel emotionally secure to express their thoughts, ask questions, and engage without fear of ridicule, bullying, or discrimination. According to McLeod (2020), Maslow's hierarchy of needs suggests psychological safety is critical before higher learning can take place.
3. *Inclusivity and Equity*: The environment must support diverse learners regardless of race, gender, ability, or socio-economic background, promoting equal access to learning resources and participation. United Nations Educational, Scientific and Cultural Organization (UNESCO, 2017) advocates for inclusive education as a principle of quality education for all.
4. *Health and Hygiene Standards*: Proper sanitation, clean water, waste disposal systems, and personal hygiene facilities are necessary to prevent disease and model healthy behaviors. Centers for Disease Control and Prevention (CDC, 2019) maintained that good hygiene and sanitation in school environments help prevent outbreaks of diseases.
5. *Environmental Responsibility*: The space should model sustainable practices such as recycling, energy conservation, and pollution control, encouraging learners to adopt environmentally responsible behavior.

6. *Supportive Learning Atmosphere*: Availability of educational resources, trained educators, and participatory teaching methods support safe and effective environmental health learning.
7. *Community Engagement*: Involving families and local stakeholders in environmental health initiatives builds trust, safety, and relevance in education. WHO (2021) states that community participation is vital in school health and environment programs.

Importance of environmental health education

1. *Awareness and Understanding*: Bishoge *et al* (2022), submitted that behavioural change is influenced by many factors including awareness, knowledge, attitudes and practices of the relevant individuals or communities through environmental health education and sustainable practices from primary school to college. Therefore, it is important to reflect on the awareness and knowledge of individuals and communities for sustainable behavioural change. Through the development of these qualities, they can be integrated into personal values and norms to establish routine behaviours that enable communities to use environmental health information to make decisions about their health. Environmental health education therefore helps the individuals, family and community develop awareness and understanding of the natural world around them. It provides knowledge about ecosystems, biodiversity, climate change, and the impact of human activities on the environment. This awareness enables one to make better choices and take actions that contribute to environmental conservation.
2. *Empowerment*: According to Brian (2015), empowerment is the ability to make decisions that lead to desired future outcomes. Environmental health education empowers persons by providing them with knowledge and skills to become a nature loving person. It gives them a sense of responsibility and encourages them to actively participate in sustainable practices. By understanding environmental issues, one can contribute to solving local and global environmental challenges.
3. *Community Engagement*: Environmental health education is essential in promoting health sustainability by minimizing the risk of infectious diseases. According to Mwangi (2024), engaging people through relevant education and instructions can allow them to understand the importance of embracing scientifically proven health interventions. Environmental health education helps to build community engagement and collaboration. Individuals can participate in community based environmental projects, such as tree planting, waste management initiatives, cleanliness drives, or water conservation efforts. These activities not only improve the local environment but also develop a sense of ownership and responsibility.

4. *Health and Well-being:* According to Raghupathi and Raghupathi (2020), both education and health are at the centre of individual and population health and well-being. Environmental health education therefore promotes a healthy and sustainable lifestyle. Individuals, family or the community learn about the importance of clean air, water, and a healthy environment for their well-being. They develop good habits that prioritize sustainable practices such as recycling, conserving resources, and minimizing waste. This knowledge positively impacts their own health and that of their communities. It also contributes by providing them with a healthy lifestyle.
5. *Career Opportunities:* Menezes and Paul (2024), stated that environmental health professionals deal with long-term challenges, such as protecting natural resources and short-term obstacles like disaster management. Environmental health education opens up opportunities for underprivileged individuals in the growing field of environmental sustainability. It equips them with knowledge and skills in areas such as renewable energy, conservation, sustainable agriculture, and environmental management. By nurturing their passion for the environment, environmental health education can help underprivileged persons pursue careers that contribute to sustainable development thus, they can get their career path in this field.
6. *Conservation and Stewardship:* Gani *et al* (2023), submitted that environmental education is crucial in promoting sustainability and conservation practices, raising awareness, fostering knowledge, inspiring action, empowering individuals to become stewards of the environment and contributing to a more sustainable future. Environmental health education therefore helps cultivate a sense of environmental stewardship and conservation ethics and the importance of protecting natural resources and biodiversity for future generations. They develop a deep connection with nature and a desire to preserve it, becoming responsible citizens who are working for the environment.
7. *Equitable Access:* Amin *et al* (2023), stated that by fostering a culture of environmental consciousness, equitable resource distribution, and inclusive education, we can envision a society where every individual has equal access to a clean environment and the opportunity to prosper sustainably. Environmental health education thus ensures that individuals have equal access to knowledge and resources related to the environment. It bridges the gap between different socio-economic backgrounds and provides an opportunity for all children to learn about environmental issues, conservation practices, and sustainable lifestyles.
8. *Holistic Learning:* Spychalski (2023), opined that the implementation of holistic education combined with the implementation of educational innovation regarding shaping a pro-quality attitude in individuals within the society can lead to them

becoming future members of the society who take up the challenge of the further improvement of the educational system towards further innovations and ensuring sustainable development. As such, environmental health education goes beyond traditional classroom teaching. It encourages experiential learning that connects individuals with nature and their surroundings, widening their connection with the natural world. These especially in the community develop a deep connection with the environment and gain a comprehensive understanding of ecological systems by the community members.

9. *Practical Skills for Sustainability*: Elegbede *et al* (2023) disclosed that environmental sustainability addresses issues such as environmental deterioration, global warming, global climate change, the environment and human rights, as well as biological improvement, mitigated air quality, enhanced watershed management, and better regulation of resource extraction. Environmental health education equips individuals with practical skills needed for sustainable living. They learn about concepts such as waste management, energy conservation, water conservation, organic farming, and recycling. These skills enable them to make informed choices and adopt sustainable practices in their daily lives, thereby contributing to environmental preservation.
10. *Critical Thinking and Problem-Solving*: According to Lieung *et al* (2019), every human being has the potential to be able to think critically but not all humans are able to use it in various situations. Someone who has the ability to think critically will have the ability to analyze, be a problem solver and be able to make good decisions. Environmental health education gives critical thinking and problem-solving skills among underprivileged children. They learn to analyze environmental issues, identify root causes, and propose solutions. This encourages creative thinking, collaboration, and a sense of ownership in finding sustainable solutions to local environmental problems.
11. *Long-term Impact*: Erhabor and Don (2016), stated that environmentally aware and empowered youths are potentially the greatest agent of change for the long-term protection and stewardship of the environment. Thus, environmental health education builds values and principles of sustainability in individuals, ensuring their growth as environmentally conscious citizens.

Challenges of environmental health education

1. *Cultural and social issues*: According to Ogundipe (2020), cultural practices are varied across different contexts. They have usually been viewed as the normal way of life and may encourage or discourage active health programme participation in the communities. Unique cultural and social norms can affect the success and goal achievement of environmental health education. Many rural communities have

deeply rooted traditions and cultures around food, lack of trust for medical professionals and outsiders, and/or social beliefs around certain behaviours. It is therefore necessary to make a conscious effort to recognize and understand these norms before implementing the programme and develop strategies to address them. Involving members from the intended population in this process can help achieve cultural competencies and encourage participation.

2. *Conflicts*: Conflict is yet another big challenge facing health promotion in Nigeria today. The impact conflict could have on health promotion is unimaginable. Umeakuka *et al* (2019), stated that Nigerian societies today are characterized by so many conflicts in the form of clashes between ethnic groups, clashes between civilians and the military and other law enforcement agents, clashes between political groups, clashes between one cult group and another, Boko haram insurgency in the north-east, and conflicts of views and ideologies. Conflicts in different parts of Nigeria have led to many deaths, many losing their means of livelihood, many displaced from their homes, abandonment of health programmes etc. Too much pressure would have been put on existing health facilities and programmes as conflicts in Nigeria have become endemic and pervasive.
3. *Weak Institutions*: According to Umeakuka *et al* (2019), health promotion is any combination of health education and related organizational, economic and political interventions designed to facilitate behavioural and environmental changes conducive to health. This definition captures some of the social institutions. The five major social institutions are the political, family, religious, educational and economic institutions. Health and health promotion programmes and activities can be a reflection of the strengths and weaknesses of the various institutions. One may now ask how strong are the various social institutions in Nigeria today? The honest answer, to these authors, is that none of the institutions can be said to be strong. The weaknesses of these institutions, especially economic and political institutions result in the weaknesses of health promotion experiences and consequently little or non-significant impact of the programmes.
4. *Leadership*: van Diggele *et al* (2020) expressed that effective leadership is a complex and high component of healthcare education, increasingly recognized to the delivery of high standard of education. Both experts and non-experts in Nigeria today agree that the country has serious problem with leadership at all levels. Leadership is supposed to define the direction of development of a country. The Nigerian government of today is dueless. The leadership of Nigeria today misplaces every priority. The key sectors of the economy such as education and health etc. have been neglected to the point that the political class, including the president, travel to other countries to receive healthcare. Right now, there is no known serious attention paid to health and environmental health promotion that

even some of the diseases that had been eradicated are resurfacing. Today there is outbreak of one disease or the other here and there.

5. *Global environmental threats:* Nigeria is part of the global village. Any issue that is global also affects Nigeria. World Health Organization (2022), reported that there are global environmental threats to health and they are climate change, depletion of ozone layer, reduction in biodiversity, degradation of ecosystem, and the spread of persistent organic pollutants. As in other parts of the world, global environmental threats also affect health and health promotion programmes in Nigeria
6. *Inadequate funding:* Kujoh *et al* (2020) pointed out that the issue of finance has been a major problem with Nigeria. This is so because once funding is adequate, it will be easy to provide other resources such as the manpower and physical facilities to perform primary functions of teaching and research. The root cause of most of the strike actions in Nigerian universities can be traced to inadequate funding. Without adequate funding of education, environmental education that embraces some attributes of science, sociology, engineering, environmental science, microbiology, law and geology among others cannot be effectively taught in Nigerian universities due to its capital-intensive nature.
7. *Resources and sustainability:* Elegbede *et al* (2023), maintained that the environment encompasses the sources of the raw materials needed to meet human requirements and making sure that the capacity of drains for composting human waste is not surpassed in order to avoid harming people. Human kind must learn to exist within the constraints of the biosphere. Rural communities have finite financial, technological, and workforce resources. For effective environmental health education programme, staff within there may be involved in other activities and commitments. Thus, to create sustainable support for the programme, focus on a shared vision and involved partner organizations and a larger body of community members is required.
8. *Barriers to participation:* According to Cao *et al* (2015), environmental barriers, such as lack of family support and accessibility issues, can have a profound impact on how one lives his or her life, especially for those living with a disability. Local circumstances such as geography can influence programme implementation and operations. The programme design should accommodate people with disability, lengthy travel times, availability of (or lack of) transportation, childcare needs, and site availability to minimize potential barriers to programme participation.
9. *Low level of research:* According to Kujoh *et al* (2020), one of the areas where inadequate funding has affected Nigerian universities is in the area of research. Research activities in Nigerian universities are abysmally low when compared with that of their counterparts even in Africa. Through research efforts, innovations to

enrich university curricula on environmental health education are made available but without research, new knowledge that enriches curriculum design for environmental education will not be there.

10. *Inadequate physical facilities:* Physical facilities are essential tools to effective learning. According to Akomolafe and Adesua (2016), physical facilities refer to buildings, classrooms, library, laboratories, toilet facilities, offices and other materials and infrastructures that would likely motivate individuals towards learning. As mentioned funding, environmental health education requires a lot of resources because it entails both practical and fieldwork. So just like other science subjects that suffer from inadequate physical facilities, newly introduced discipline like environmental education will suffer more.

Strategies for a safe environment

1. *Safety and crisis team:* Havrion (2024), state that the safety and crisis team should, at a minimum include government representative, environmental health educationist, mental health professionals, security personnel, appropriate community stakeholders (such as representatives from local law enforcement and emergency personnel), and other health liaison officers to help sustain efforts over time.
2. *Crisis and emergency preparedness plans:* According to Havrion (2024), having an actively engaged safety team leading this effort will mobilize community support before, during and after an emergency. It's also important to note that these plans must be consistently reviewed and practiced.
3. *Practice emergency communication:* According to Morgan (2022), communicating environmental issues requires an expanded set of transdisciplinary approaches to move beyond a focus on representation of issues. The transdisciplinary bodies of knowledge provide a set of complementary, theoretical and analytical insights that are generally absent in the field of environmental health education. Distributing timely and accurate information to those directly involved will allow quick reactions to an incident. It is important to have multiple personnel and community leaders who are trained to use the system before, during, and after emergency drills.
4. *Involve parents and students:* Allen (2023), submitted that engaging parents and communities in school safety and security initiative offers numerous benefits to everyone involved. In the case of school environment, students are an important source of information and ideas. Their input is significant to enhancing school's awareness and readiness during emergencies. Empower students to actively participate in as many aspects of emergency response as possible such as reporting possible dangers, helping during the response, and keeping their parents'

calm. Parents also play a crucial role in getting students home safely. Sharing directions with parents on what they should do in the event of a crisis can be helpful. Hold meetings and send out information to align parents on procedures they should follow before, during, and after an emergency event.

Conclusion

It is clear that the environment has impact on human wellbeing and as such, all hands must be on deck to ensure that human environment is sustained in such a way that it will be habitable. Individuals, communities and institutions must play a key role in ensuring this in order to aid development at all levels. The following recommendations will make environmental health education an effective tool for a safer environment:

1. Tools and media of environmental health education should be effectively used to create awareness on environment and health related matters.
2. Environmental health assessment should be done regularly and the result communicated to the public.
3. Intervention programmes for environmental protection should focus on multi-settings and community involvement should be mandatory.
4. Regular tree planting exercise must be imbibed by everybody.
5. Portable water supply should be provided by the Government, and proper management of solid waste should be undertaken by all concerned.
6. More Health Inspectors should be trained and mobilized to inspect the environment and environmental health defaulters should be apprehended and appropriate sanctions brought against them.
7. Environmental health education should be incorporated into educational curriculum at secondary schools' level.
8. There must be flexibility in university management to make it proactive and responsive to what goes on in its environment.
9. Individuals and indeed the entire community should be actively involved in decision making process especially when it concerns health and environmental safety.

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