

JUSTIFICATION FOR ENVIRONMENTAL HEALTH EDUCATION AT DIFFERENT SETTINGS

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Abstract

People need good environment for sustenance but the activities of man while searching for resources necessary for sustenance pollutes the environment, making it unfavourable for health and well-being. Environmental health education is the learning process that enables people acquire knowledge, skills, experiences, and builds values that will enable them to act independently to protect and solve environmental problems This paper documented justification for environmental health education as a separate school subject by discussing : the concept of environmental health education, healthy living, environmental problems (as lack of potable water, poor sanitation and hygiene, poor housing conditions, overcrowding and environmental pollution) necessity for environmental education, importance of environmental education and environmental education settings. Environmental health education is the most important strategy for combating environmental degradation. It was recommended, among others, that leaders of different workplaces should ensure that they employ environmental health educators who will educate the workers on environmental hazards they are likely to cause while discharging their duties and control measures.

Keywords: *Environmental health education, Healthy living, Settings*

Introduction

The goals of a sustainable development can only be achieved in the absence of a high prevalence of debilitating, communicable and non-communicable diseases and when population can maintain and sustain a good level of physical, mental and social wellbeing. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without the distinction of race, religion, political belief, economic or social condition which can only be achieved in a conducive environment. United States Department of Health and Human Services (2014) stated that globally, 23 percent of all deaths and 26 percent of deaths among children aged under five years are due to environmental factors. Environmental factors detrimental to health are diverse and far reaching, which includes exposure to hazardous substances in the air, water, soil and food, natural and technological disasters, climatic change and the built environment. Poor environment has its greatest impact on people whose health status is already at risk (United Nations Environmental Programme (UNEP), 2016).

Environment can be defined as the natural surroundings of an organism which directly or indirectly influences the growth and development of the

organism. It can also be defined as the sum total of all living and non living things that compose the surroundings of man. The word environment is derived from the French word “environner” which means “surroundings” (Padmanabhamurthy, 2007). Everything that man needs for sustenance is from the environment and include air, water, and food. The environment is also the surrounding in which living and non living things live, interact, grow and perish. Man’s constant interaction with the environment in search for the basic necessity of life such as food and shelter leads to environmental degradation. The environment is an important factor influencing the health status of individuals (Aslam, 2019). The environment refers to the conditions in our surroundings which enhances comfort and also allows disease transmission. Good environmental conditions such as clean water, proper ventilation, adequate housing, safe communities and roads have been found to contribute to good health especially that of infants and children. Environmental conditions such as lack of proper sanitation, recreational space, and destruction of natural environment leads to lower levels of overall health and wellbeing (Aryal, 2019).

All human actions have environmental consequences. Often, these consequences are negative and human beings have to address them (Chepesiuk, 2007). The impact of environmental risk factors are extremely varied and complex in both severity and clinical significance, for example, the effect of environmental degradation on human health can range from death caused by cancer to psychological problems resulting from noise pollution (Organization of Economic Cooperation and Development (*OECD*), 2001). Nigeria’s commitment to ensuring environmental sustainability is enshrined in its Vision 2020 which is an integrated long term development plan for the country. Access to sanitation and safe water has been a challenge to Nigeria. Safe water and sanitation will help in reducing number of deaths from diarrhoeal diseases, ringworm, and typhoid fever (Kankara, 2013).

Healthy living is the aggregation of personal decisions over which individual has control that can contribute to disease prevention or health promotion. With the ratification of the World Health Organization Constitution in 1948, governments have a strong mandate to promote the health of the population. Health is defined as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. (*WHO*, 1948 in Sartorius, 2006). Today much emphasis has been made on treatment of disease instead of preventive practices to maintain this state. Priorities for social development and investment in people include prevention of non-communicable diseases, access to sufficient nutritious food, promotion of healthy lifestyles, environmental sustainability and universal access to preventive health services both in developed and developing countries (World Economic Forum, 2015). Environmental health education addresses societal and environmental factors that increases the likelihood of exposure to diseases. Adequate knowledge of the

environment enhances healthy attitude and behaviour to ensure clean and safe environment. Environmental health education equips individuals with knowledge and skills which enables them to adopt practices that promotes clean and healthy environment. (United Nations Environmental Programme (UNEP), 2016).

Concept of Environmental Health Education

Environmental health is the science and practice of preventing human injury and illness and promoting well-being by identifying and evaluating sources of hazard and hazardous agents and limiting exposure to hazardous physical, chemical and biological agents in the air, water, food and other environmental media or setting that may adversely affect human health (National Environmental Health Association (NEHA), 2019). In order to promote and maintain health, environmental education is necessary to prevent environmental degradation which has adverse effect on health. Environmental health education is a holistic lifelong learning process directed at creating responsible individuals who explore and identify environmental issues, engage in problem solving and take action effectively to improve the environment. Through environmental health education, individual can develop deeper awareness and understanding of environmental issues and have effective skills to make informed and responsible decisions that can resolve environmental challenges that affects their health adversely. Environmental health education is also a varied and diverse field that focuses on the educational process that has to remain neutral by teaching individuals critical thinking and enhancing their own problem solving and decision making skills in a participatory approach. Environmental education can be taught formally in schools, colleges and universities and informally during workshops, seminars and outreaches in workplaces and communities (Abboud, 2018).

Individuals gain awareness of their environment and acquire knowledge, skills, values, experiences and determination which will enable them to act individually and collectively to solve present and future environmental problems. Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges to enable them develop necessary skills and expertise to address challenges and foster attitude, motivation and commitment to make informed decisions and take responsible actions that will promote their health.

According to North Carolina Department of Educational Quality (2017) the overall goals and objectives of environmental education are to generate environmental actions that improve ecological relationships including the relationship of humanity with nature and people with one another as follows:

- (a) to foster clear awareness of the environment and concern about economic, social, political and ecological interdependence in urban and rural areas;

- (b) to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; and
- (c) to create new patterns of behaviour in individuals, groups and society as a whole towards the environment.

Environmental education objectives are as follows:

- (a) awareness: to help social groups and individuals acquire awareness and sensitivity to the total environment and its allied problems;
- (b) knowledge: to help social groups and individuals gain a variety of experience and acquire basic understanding of the environment and its associated problems;
- (c) attitude: to help social groups and individuals acquire a set of values and feelings of concern for the environment, and the motivation for active participation in environmental improvement and protection,
- (d) skills: to help social groups and individuals acquire the skills for identifying and solving environmental problems;
- (e) participation: to provide social groups and individuals with an opportunity to be actively involved at all levels in working towards resolution of environmental problems (United Nations Educational Scientific and Cultural Organization (UNESCO), 2006 & Mondal, 2019).

The Concept of Healthy Living

Healthy living is a way of life that lowers the risk of being seriously ill or dying early. All diseases and death are not preventable but a large proportion can be prevented. Healthy lifestyle gives one opportunity to enjoy more aspects of good health and live longer. Adoption of healthy lifestyle in a family is a role model for children and others residing within the same household particularly children (World Health Organization (WHO), 2000). Taking care of oneself and the environment prevents premature death, unnecessary illness, disability, reduce health care cost and maintain a high quality of life.

Healthy living involves creating and maintaining health which is a state of physical, mental and social wellbeing and not merely the absence of disease or infirmity. The roots of healthy living are multilayered influenced by social and environmental determinants as well as specific risky behaviours especially tobacco use, unhealthy diets, harmful use of alcohol and physical inactivity. The lack of access to basic prevention, treatment and care further inhibits healthy living. All these factors are interconnected and influence everyday decisions. It is very obvious that enabling healthy living is not just an agenda but an imperative for all members of the society to have a sustained impact. (World Economic Forum, 2015).

Major Environmental Problems and Health Effects

According to Ebong (2013) and NEHA (2019) environmental problems that affect people in developing countries tend to have immediate and long term health effects and includes

Lack of potable water, poor sanitation and hygiene

The health risks involved in poor water, sanitation and hygiene are multifaceted. Various diseases are spread through faeco-oral routes which are far more accessible when water supplies and sanitary conditions are inadequate. Diarrhoeal diseases are mostly caused by environmental factors such as unclean water, unhygienic environment and poor food hygiene. In developing countries, the supply of pipe borne water is inadequate. People now resort to the use of water from borehole, stream, well, river and ocean which may be polluted and if not properly treated expose them to infections. Poor water supply, lack of sanitary facilities, use of faeces as fertilizers can cause infections such as cholera, dysentery, typhoid and paratyphoid fever (Ebong, 2013).

Poor housing conditions and overcrowding

Poor housing conditions is most prevalent in urban areas, population growth puts additional strain on housing and infrastructural facilities. On the other hand, most urban infrastructures also rely on sufficient population densities to uphold its use, maintenance and financing. Overcrowding, inadequate ventilation, poor drainage and plumbing are important factors for disease transmission. Some building materials are hazardous to health. Low cost houses contractors may make use of materials that are dangerous to health, for example, asbestos used as roofing materials poses health risks such as cancer (NEHA, 2019).

Environmental pollution

Environmental pollution is the release of harmful substances into the environment. It can be land, air or water pollution. Indoor pollution is released from cooking fires or other combustion indoors. Out-door pollution is caused by the use of fossils fuels, and open burning for example bush burning. High levels of hospitalization as well as deaths occur when urban air pollution levels rises. Indirect effects of ambient air pollution affects the agricultural and natural ecosystems. The accumulation of nitrogen in the ecosystem has adverse effects on the health of human beings (Ebong, 2013).

The pollution of water bodies such as rivers and lakes, destroys aquatic life and threatens the health of human beings. Human beings are exposed to diseases caused by water pollution through ingestion of contaminated water, fishes and other animals found in water. Contamination of water is caused by the release of domestic and industrial effluents and water used for irrigation into the water bodies among others Klishadi, 2012).

Air pollution is the contamination of air which is essential for healthy living. Human induced climatic change is primarily as a result of carbon dioxide and other green house gases such as methane and nitrous oxide being released into the atmosphere. There is increased level of air pollution in developing countries. Carbon dioxide emission is high with potential green house effects (Achalal & Achalu, 2004). Climatic changes have wide ranging health effects which are on the increase in tropical and sub-tropical parts of the world. Most respiratory infections encompassing several problems affecting the lungs, throat, mouth and middle ear are caused by polluted air which can be acute or chronic. Acute respiratory infections include cold, sore throat, ear infections, tonsillitis, lower respiratory tract infections, pneumonia and bronchitis. Chronic obstructive pulmonary diseases include bronchitis and emphysema (Appanagari, 2017).

Land pollution is caused by indiscriminate disposal of waste. Diarrhoeal diseases such as cholera and dysentery are caused by lack of safe water and unsanitary environmental condition. Humid and dirty environment is necessary for breeding of mosquitoes and other vectors that transmit diseases such as malaria and other vector-borne diseases. Pollution of the environment with chemicals also contributes to increased development of cancer (Achalal & Achalu, 2004).

Need for Environmental Education

There is increased need for environmental health education to make the environment a safe place for living (UNEP, 2016 & Verma & Dhull, 2017) due to the following reasons;

i. Sources of human exposure to pollutants are increasing. Chemicals reach the environment through emission from industries, anti-roofing plants, marine vessels, pesticides used for agriculture, waste incineration and leakage from waste disposal sites. Uptake of chemicals through food consumption has increased because of the use of preservatives in packaged food. Intensive agricultural production makes use of chemicals like pesticides, fertilizers, feed additives and medications for live stock. Chemicals in food include bio-accumulative chemicals in the environment such heavy metals and persistent organic pollutants which can be found in fish, meat and dairy products (UNEP, 2016).

- i. The effect of exposure to pollution varies from allergies to cancer. A direct causal relationship has been found between environmental pollution and diseases. Urban air pollution can cause asthma, allergies, respiratory and cardiovascular diseases if exposure is continuous and long term. Heavy metals cause neurological disorders, cancer, birth defects and reproductive defects. The depletion of the ozone layer has lead to increased exposure to ultraviolet radiation and a greater risk of skin cancer. Environmental contaminants can cause psychological problems.

Noise pollution impacts on human health, decreasing the quality of life and contributes to depression. Climatic changes and natural disaster is acknowledged as a major health risk multiplier which affects human health. This is caused by human activities on land and water bodies (UNEP, 2016).

- ii. Conserving nature and environment will be much easier if people are taught about depleting resources, environmental pollution, land sliding, degradation and extinct of plants and animals. Environmental education is an investment that is capable of changing the environment for the better (Verma & Dhull, 2017).
- iii. There is increasing technological advancement and people now ignore the importance of conserving the environment. Human beings explore natural resources without remediation measures to conserve the environment. Environmental degradation is occurring at an alarming rate because of increased population growth, industrialization, changes in consumption pattern and poverty. This threatens equilibrium existing between people and the environment (Verma & Dhull, 2017).

Importance of environmental education

- i. Awareness: Environmental education increases our knowledge of the surroundings (Claro Energy (CE), 2015) Environmental education builds the knowledge and skills needed to address complex environmental issues as well as take action to keep our natural world healthy, our economy productive and communities vibrant (Sustainability Forestry Initiative, 2019).
- ii. Sustainability: It is necessary to ensure that the needs of the future generation would be met by the earth's resources. This can be achieved by moderate consumption of resources today. Increased rate of consumption of natural resources will deplete the resources with little or none remaining for the future generation. Environmental education can help people to understand the effects of over exploitation of natural resources and act accordingly. Human beings depend on the environment for all its basic needs such as food, water, air and shelter (CE, 2015).
- iii. Health benefits: Health and safety of the people is enhanced by improving air quality and decreasing the emission of toxic substances into the environment. Both physical and mental health are usually affected by depletion of the environment. Environmental protection prevents mortality and morbidity associated with an hazardous environment (Ebong, 2013).
- iv. Renewable sources of energy: It enables people to understand the importance of renewable sources of energy such as solar energy and wind energy. Renewable sources of energy does not pollute the environment.

Non renewable sources of energy like petrol and diesel are major sources of the world pollution. Environmental education is imperative in our fight against global warming and climatic changes that contribute to poor health (CE, 2015).

- v. Economic benefits: It saves money required for control of pollution and treatment of diseases associated with it. Pollution leads to contamination of the environment which affects plants, animals and human beings. Contamination of plants and animals endangers the lives of people who depend on them for food (World Economic Forum, 2015).

Environmental Health Education Settings

Protecting the environment is the responsibility of everyone; hence environmental education cannot be confined to a particular group in the society. Every individual must be prepared to save the environment. Environmental education must be lifelong (Kaur, 2016). Environmental health education can be taught formally in institutions of learning and informally in the community and workplaces. Environmental educators believe that environmental literacy must be pursued through many ways that reaches out not only to teachers, parents, students, but also to politicians, community leaders and medical practitioners (Chepesiuk, 2007).

i. School environmental health education

Environmental health education may be taught in schools as an independent subject as well as being integrated into other subjects such as health education, biology and agricultural science among others. Environmental education in schools is a means of fostering responsible attitude and behaviour in students towards the environment. School environmental education is the sum total of all institutionalized learning experiences that learners undertake to help them develop environmental literacy, skills in solving problems, decision making and active participation in taking action towards the environment while taking into consideration the ecological, political and economical aspects (Verma & Dhull, 2017). According to Keshelman, Levin, Krame, Matzkin and Dutcher (2011), the classroom is a natural place to teach about the environment and human health. Unfortunately, it has received little attention in schools. Environmental health education can be taught in schools through lecture method, lecture-discussion method, independent study method, demonstration method and outdoor recreational method?? (Moronkola, 2013). Environmental education taught at all levels of education helps people to develop environmental consciousness.

ii. Workplace environmental health education

The level of environmental literacy in workplaces is very low. Workers in the course of delivering their duties pollute the environment which

adversely affects their health. Workplace environmental health education can help workers to dispose solid and liquid waste generated in their workplaces in a manner that will not be harmful to human health. It also helps the workers to know and identify the type of environmental threats present in their environment and to find possible ways of conserving the environment. Environmental health education in the workplace can be carried out through seminars and workshop to stress the pollutants likely to be emitted while discharging their duties and proper waste disposal and control measures. If pollution in the workplace is controlled the environment will be a safe place to live in (Chepesiuk, 2007).

iii. Community environmental health education

Environmental health education should take place where people live. The community should be mobilized to enable them identify and collaboratively find solution to environmental problem. When members of the community are involved in decision making process of how to deal with the problems of environmental degradation, sustainable solutions to environmental problems will be realised. Community members have a common interest in protecting and improving their quality of life. Through community environmental education, people acquire skills which enhance data collection, analysis and application of information for the purpose of making the environment favourable for their health and wellbeing. Community environmental education builds knowledge, skills and infrastructure for change that is sustainable, equitable and empowering (Andrew, Stephen & Wise, 2019). Environmental education in communities ensures collaborative efforts between different organizations in the community to proffer solutions to environmental problems. It also empowers the community with knowledge and skills necessary to critically evaluate local environmental issues which in turn improves the local environment (Blair, 2008).

Implication of Environmental Education on Healthy Living

The environment we live is a major determinant of our health. The collaboration of all sectors in keeping the environment clean and safe is enhanced through environmental education. Keeping the environment clean is the duty of everyone. Radiation protection and environmental sanitation prevents respiratory, diarrhoeal diseases and cancer which constitute the major burden of disease globally. These are caused mainly by environmental factors which mostly affect children. The prevalence of vector-borne disease, particularly malaria also depends on the environmental conditions of human settlements as well as the structures for combating disease-carrying vectors. Environmental health education enhances protection and restoration of the degraded ecosystem which supports human health, reduces exposure to natural disaster, enhance food

security and prevent the emergence of pathogens and disease outbreak. It also contributes to the improvement of nutritional quality (UNEP, 2016).

Human excreta are major contaminants in the world. Where there are no or inadequate toilet facilities, people defecate indiscriminately and are usually exposed to pathogens which cause diarrhoeal diseases. People gain knowledge about liquid and solid waste management strategies through environmental health education. The disease transmission route can be intercepted by better hygiene, access to adequate and safe water and sanitary facilities. Environmental education promote behaviours that enhance control of environmental factors that can potentially affect health (WHO, 2016).

Environmental education replaces and reduces the utilization of hazardous chemicals, non renewable sources of energy and generation of toxic waste and ensure proper management of chemicals and waste. This prevents harmful effects that will occur as a result of such exposures, for example, cancer, burns, and system damage among others. Overcrowding, indoor air pollution as well as unhygienic condition also exacerbate the prevalence of infections of the respiratory tract. Practising environmental sanitation and maintaining local environmental quality improves health through disease and disablement prevention (Kjellem, 2001). The author further stated that the knowledge gained through environmental education helps in preventing overcrowding, indoor air pollution as well as promote housing conditions which reduces the prevalence of infections.

Conclusion

The environment which we live is a strong determinant of health and should be protected. In the course of utilizing resources necessary for sustenance, the environment is usually polluted which exert deleterious effect on health of the community members. Environmental health education is one of the modalities for improving the health of people. It equips individuals with knowledge, values and experiences necessary to conserve the environment. Environmental health education should be taught from childhood through adulthood in different settings to ensure environmental sustainability and health promotion. Knowledge gained through environmental education at various settings will enhance elimination of hazards in the environment through good environmental practices.

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