

Global Warming And Health Promotions Implications For Public Health Education

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Abstract

All over the world, global warming as a result of climate change is of great concern because of the consequences and implications on health. Therefore, it is a public health issues that require health promotion and prevention, since health promotion is a process of enabling people to increase control over their health and its determinants and thereby improving their health positively and solution for the menace of climate change. The study focused on global warming and health promotion and the implication for public health educators. The concepts related to the issues in climate change where explained for a proper and better understanding of the issue at stake, such as extreme heat events, pollution, water and food borne infectious diseases, radiation, allergies, mental health amongst others. The study also showed the relationship between population and climate, public health education and global warming. The study also revealed some solutions for global warming.

Keywords: Global warming, climate change, health promotion, public health.

Introduction

Global warming can be described as an observed increase in the average temperature of the earth atmosphere leading to climate change and other effects. It is global warming that cause's climate change. According to Anuj (2010) a small rise in temperature (2⁰f or 1.1⁰c) can have serious effects on climate conditions and weather change. Global warming is a serious concern and it is happening more quickly in some parts of the world than others. A great number of scientists have agreed that global warming is a serious issue growing steadily in bad light.

There are evidence that human activities are responsible for climate change. Stern (2006) emphasized that serious concern on the economic and consequences of climate change is induced by human activities which leads to increase in greenhouse gases and the effects, fossil fuel, increasing population which is one of the greatest factor in global warming, massive rise in the level of greenhouse gases in the earth atmosphere, changes in weather pattern that brings about heavy rains and severe drought, pollution, extreme weather conditions, increasing diseases and animal species dying. This is a serious public health concern and an effective public health response can prevent injuries, illnesses and disasters because climate change poses a public health threat over the coming years and decade and this is likely to have significant impact on health.

Therefore, we require global solution for a huge problem like climate change, this means the whole world working together with scientists collecting, sharing information and government taking action, in order to seek solutions to the problem. The future of the earth now depends on us, efforts are needed at the individual, local, national and international levels to be able to combat the menace of global warming. Climate change has great impact on health, it can affect the health of people through;

- Direct effect of heat.
- Health effects related to extreme weather events.
- Water and food borne infectious diseases.
- Vector borne and zoonotic diseases.
- Emerging pathogens susceptible to weather conditions.
- Allergic and,
- Mental health disorders.

Agarwala (2008) defined climate change as a negative shift in climate balance which has adverse consequences for the ecosystem, human aquatic life and vegetation. Therefore climate change has effect on everything and this is a serious matter. So health promotion is vital here, health promotion has been defined as the process of enabling people to increase control over their health and its determinants and thereby improving their health (World Health Organisation, 2005). And health promotion incorporated public health education and also addresses social factors. Therefore public health education is a major key for empowering people to control human activities that leads to climate change.

Some demograph groups are more vulnerable to the health effects of climate change than others. Children are at greater risk of worsening asthma, allergies and certain infectious diseases, while the elderly are at greater risk due to heat waves, extreme weather events and exacerbation of chronic diseases. People of low socio-economic status are vulnerable and women are also affected because they face gender inequalities which climate change tends to exacerbated. The health effect of climate change on a given community depend not only on a the exposure of the community, but also on how these characteristics interacts, because heat waves are more likely to affect certain population, like the homebound elderly, poor and minority population and those living in the areas with less green space.

Public health education is a major avenue for educating people on how to reduce and control their human activities, cleaner transportation, cleaner energy, eco-friendly homes, preservation of the forest and ocean, saving energy and so on, that lead to climate change. Public health is the practice of protecting and improving the health of the people and the community or a nation and it uses such means as preventive medicine education and control of communicable diseases to respond to health concerns. Public health education empowers people through health promotion and disease prevention.

Related issues in climate change

There are so many factors that affects the health of every individual and the basic ones are heredity, environment and behavior (Money, 2008). These factors operate jointly to determine the quality of health of the individual. The environment is one of the climate change related concepts. The release of harmful chemicals into the environment is a public health concern because these chemicals pollute or make harmful the food people eat, the water they drink and the air they breathe and such pollution increases the risk of health problems.

According to Lucas and Gilles (2003), the environment refers to both the natural and human created environment. The natural environment on its own may create problems for human health as evidenced by temperature fluctuation and therefore natural events as forest fire, tidal waves, and landslides. For instance, a heat wave may result in cases of heat stroke and forest fires will produce smoke resulting in respiratory problems. The created environment also poses much risk to health, for example the slum areas of many cities are in themselves health hazards due to poor housing, ventilation, poor availability of safe water and sanitation. But the good news is that environmental health which is the theory and practice of accessing, correcting, controlling and preventing those factors in the environment that can potentially affect adversely the health of the present and future generation (Fitz Patrick and Kappos, 1999) can help to reduce the menace of climate change in our environment. Anyhow, newspaper articles or television and radio news programmes often feature

reports about our environment and often we see clear evidence that the earth, air, water, land and living things are precious. These natural resources must be protected and each individual can protect the environment in special ways. Humans contribute to the environment just as the environment contributes to humans, for example we breathe out carbon dioxide which plants in turn give off oxygen which human need to breathe and survive, thus a balance of nature is maintained, when any part of the environment is hurt or destroyed this balance is altered.

Natural events are constantly disturbing the balance of nature, human activities of nature and these activities have created waste that have an immediate effect on health. For example oil spill on water can kill the fishes and water fowls living there and if that water is used, humans are affected. People from the oil rich communities in Niger Delta in Nigeria suffer frequently from oil spillages and various health issues thereafter.

Extreme Heat Events

The health effect from these ranges from loss of life and acute trauma to direct effects such as loss of homes, large population displacement and subsequently mental health effect, damage to sanitation infrastructure, interruption of food production and also damage to the health care infrastructure. These could lead to poverty, epidemic, drought, homelessness which are all public health concerns.

Pollution

This is the presence in the air, soil or water substances that are harmful, while pollutant is a substance that creates harmful effects in the air, soil, or water. Examples of pollutants are oil spillages and fumes. Air pollution according to Lucas and Gilles (2006) is a major health problem in both developed and developing world. Increasing amount of harmful gases and particles are being emitted into the atmosphere resulting in damage to human and the environment. Acute respiratory infection (ARI) is one of the most important causes of ill health and death in the developing world and air pollution is considered a very important risk factor in the developing of acute respiratory infection. Air pollution may be divided into anthropogenic (manmade) and natural sources like dust, storms and volcanic action (Lucas and Gilles, 2006).

Climate change may affect air quality by modifying local weather patterns and pollutant concentrations affecting natural sources of air pollution and promoting the formation of secondary pollutant, for example high surface temperature especially in urban areas promote the formation of ground level ozone. Ozone can irritate the respiratory system, reduce the function of the lungs and aggravate asthma and also inflame and damage the cells that line the airways. It may also cause permanent lung damage and aggravate chronic lung diseases. Every day we breathe in air, when the air we breathe in is polluted toxins enter into our body and when this happens frequently, it could damage the lungs. We can be affected by air pollution whether you are out door or indoors. Indoor air pollution can also cause respiratory problems, such as shortness of breathe, a nagging cough, nose and throat irritation and some can cause certain cancer, eye irritation, stomach upset, headache, sleeplessness, depression, dizziness and fatigue.

For the green house effects, many scientists believe that air pollution especially the increase in carbon dioxide in the air is causing greenhouse effect on the earth. A greenhouse is a warm and humid inside with a glass ceiling that traps the heat of the sun. The greenhouse effect is a natural process, but more heat is trapped in the atmosphere as the amount of greenhouse gases increases.

Water and food borne infectious diseases

The world demand for oil and petroleum is high and to meet this high demand more oil and petroleum are transported across the ocean, sometimes tankers carrying this product leak causing oil spills on water. This spills

kills wild life and leave behind carcinogens that can affect human. Altered weather pattern resulting from climate change could affect the distribution and incidence of food and waterborne diseases. Outbreak of cholera, heavy rainfall has also been listed as a contributing factor in the overloading and contamination of drinking water treatment system. This illustrates the need of effective public health surveillance of water and food borne diseases.

Allergies

Warmer weather conditions and higher water concentrations promote the growth of some plants including some that produce allergies. Such effect aggravates symptoms in those who suffer from allergies and asthma.

Mental Health Problems

The aftermath of disasters such as severe weather events may include post-traumatic stress and related problems. This explains the need for a comprehensive public health approach to climate change.

Radiation

Matter is composed of atoms. Some atoms are unstable, therefore as these atoms change to become stable they give off particles called radiation (United States Environmental Protection Agency). Radiation is classified into ionizing and non-ionizing radiations. Over exposure to ionizing radiation can have serious health effects including cancer, birth deformities and mental anguish (WHO, 2000). Cancer is the most significant health risk associated with over exposure to ionizing radiation and this cancer can develop after 10-40 years of exposure (Lucas and Gilles, 2006).

Radiation affects health, it is the transmission of energy in the form of waves, it also occurs naturally in the environment usually people are exposed only to low levels of radiation such as x-rays. Too much radiation may also cause cancer in humans. People who are exposed to high levels of radiation may experience radiation sickness and some of the signs of radiation sickness are stomach upset, vomiting, headache, diarrhea, hair loss and fatigue. This sickness can lead to death.

Effects of Population on the Climate

Problems such as the World growing population, deforestation, solid waste, noise pollution can affect the environment and climate because these problems affect the environment and also affect health. Famine can result from the world's population, that is increasing on a daily basis, many people inhabit the earth, the more automobiles and industries, air pollution will increase and as air pollution increases global warming will increase too while the ozone layer gets thinner. As the ozone layer gets thinner more harmful rays from the sun will get into the atmosphere and with more harmful rays cases of skin cancer will increase.

As the population and the industries have increased, so has noise, noise radiation occur when sound in the environment become too much and too much exposure to loud noise over a long period can cause deafness, it may also cause stress and other related problems as high blood pressure, tension, aggression and fatigue. Deforestation, cutting and clearing trees causes drought and famine because you have to make room for human settlement, planting of crops and grazing of cattle. The earth needs trees to maintain the delicate balance.

In Nigeria we have our own unique environmental problems, and some of the problems are flood, erosion, overcrowdings, bush burning in some parts of the country, capturing of the ocean in Lagos and blocked drainage and gutters and these have resulted in health hazards such as cholera outbreak, epidemics, homelessness, ocean surge and deaths.

The public health educator and global warming

In view of the impact and consequences of global warming as a result of climate change and therefore given the differential burden of the health effects of climate change on certain population, public health preparedness must include assessments to identify the most vulnerable population to global warming and anticipate their risk. At the same time health communication targeting these vulnerable populations must be devised. An effective public health response to climate change can prevent injuries, illness and death. There is no single solution to global warming which is primarily a problem of too much heat trapping carbon dioxide (CO₂), methane and nitrous oxide in the atmosphere. The technologies and approaches outlined below are all needed to bring down the emissions of these gases by at least 80 percent.

Boosting energy efficiency. There should be public health education that the energy used to power, heat and cool our homes, businesses and industries is the single largest contribution to global warming and that technology allows us to use less energy to get the same or higher level of production. This approach has vast potential to save both energy and money.

Green transportation, people must be aware that the transportation sectors emissions have greatly increased and at a faster rate than any other energy – using sector over the past years. Therefore a lot of solutions are at hand, all modes of transport, switching of low carbon fuels and reducing vehicle miles travel and more efficient mass transportation systems.

The public needs to be aware that renewable energy sources such as solar, wind, geothermal and bioenergy are available around the world. Multiple studies have shown that renewable energy has the technical potential to meet the vast majority of our energy needs. Renewable technologies like biofuel can be deployed quickly and it is cost effective, creates jobs while reducing pollution.

Phasing out fossil fuel electricity, reducing our use of fossil fuel especially carbon-intensive coal is essential to tackle climate change. There are several ways to begin the process, and the first step is not building any new coal burning power plant, capturing and storing carbon emissions from power plants, while it sound like science fiction, we have technology that can store carbon emission underground. The technology has not been deployed on a large scale or proven to be safe and permanent but it has been demonstrated in other contexts such as oil and natural gas recovery.

Managing forests and agriculture, we can fight global warming by reducing emissions from deforestation and forest degradation and by making our food production practices more sustainable and exploring nuclear because nuclear power results in global warming emissions, an increased share of nuclear power in the energy could help reduce global warming emissions, an increased share of nuclear power in the energy could help reduce global warming but nuclear technology possess serious threats to our society.

Ensuring sustainable development. According to Olise (2007), the concept of sustainable development has been gaining momentum since the early 1960s with the appearance of articles, books and meetings on the relationship between man and his environment on one hand, and the survival of human race on the other side. The widely accepted definition of sustainable development is that given by the Brundtland Commission; as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. The country of the world, from the most to the least developed vary in their contributions to the problem of climate change and in their responsibilities and capacities to confront a successful global climate change and this must include financial assistance from rich countries to poorer countries to help make the transition to low carbon development pathways and to help adapt to the impact of climate change.

Adapting to changes already underway, as the climate demonstrates the impacts of a warming world, which are already being felt by people around the globe. If climate change remain unchecked, these impacts will get worse from sea level rise to heat waves from extreme weather to disease outbreaks and each unique challenge requires suitable solutions to prepare for and respond to the impact of global warming. Unfortunately those who will be mostly hit by the impact of a changing climate are likely going to be the poor and the vulnerable, especially

those in the less developed countries like Nigeria. Therefore developed countries must take a leadership role in providing financial and technical health for adaptation.

Conclusion and Recommendations

Solutions to global warming in Africa and Nigeria in particular should include an effective land use planning to avoid forest degradation, developing renewable energy and limiting the expansion of coal firing power plants. The African countries have some of the lowest overall and per capital global warming emissions on the planet, they are also likely to suffer from some of the worst consequences of climate change. These impacts may already be unfolding in the form of drought, famine, erosion and population displacement in the context of the high level of poverty and malnutrition, the priority of many African countries to increasing access to energy services and improving the economic welfare of the people. By pioneering new renewable energy projects and establishing forward thinking innovation centers. African countries are looking towards renewable energy as a solution to meet their growing energy needs in a sustainable way, while working towards practical adaptation strategies to reduce the impacts of global warming. Meeting these adaptation and challenges is the responsibility of not only African countries that are facing them, and also developed countries have been the historical responsibility for most global warming emissions while progress is being made, much more needs to be done to address energy needs in the African continent. Therefore in solving global warming we have to harvest in green jobs, cleaner energy, create green homes and building, cleaner's transportation, eco-friendly homes, preservation of forests and oceans and for the future we have to save the earth.

Global warming as a result of climate change, this is the period to act, there is no gain saying that climate change is assuming a critical stage locally, nationally and internationally. Protecting the environment is the responsibility of everyone, government of the world, communities, industries, individuals and laws protecting the environment. For instance scientists are searching for ways to harness solar energy, or energy from the sun. Solar energy is a clean and environment safe energy source. Using it to heat and cool homes could reduce the need for oil, gas and electricity. Even solar energy may one day be used to power some vehicles. Recycling can also be used to reduce solid waste, recycling means reusing materials instead of buying new ones. It saves national resources. Therefore newspapers, cardboard, aluminum, plastics can be recycled. We should always remember the three R^s for environmental protection, they are reduce, reuse, and recycle as it will help in no small measure to reduce the effects of global warming as a result of climate change.

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