IMPLICATION OF GLOBAL WARMING TO HEALTH SECURITY

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Abstract

The term health security is used to depict health issues that have significant influence on human security. To secure the health of the public, factors that pose threat to human health must be addressed. Such factors include global warming and environmental changes. This paper discussed the causes of global warming, the implication of global warming, steps to be adopted in reducing the implication of global warming. The paper recommends among others that human activities that cause global warming should be checkmated through enactment and implementation of law and policy formulation, awareness on the need to ensure health security by acting on climate change should be created, empirical studies should be carried out on health protection from global warming.

Key words: Health Security, Global Warming

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Introduction

Health security is essential part of human security. It emphasizes any threat and emergencies that affect or are likely to affect public health. The threat could be medical, chemical, biological, environmental or food security. Related terms to health security include public health security, global health security, international health security, and global public health security. The eight categories of concern of health security include emerging diseases; global infectious diseases, deliberate release of chemical and biological materials; violence, conflict and humanitarian emergencies; natural disaster, environmental change; chemical and radioactive accidents; and food security and poverty.

Health security depicts health issues that have significant influence on human security. World Health Organization, WHO, (2007) defined public health security as the activities required, both proactive and reactive, to minimize vulnerability to acute health events that endanger the collective health of populations living across a geographical regions and international boundaries. Two WHO reports, World Health Day (2007) and World Health Report (2007) listed several issues pertaining to health security. One of such issues is environmental change. Environmental change is brought about by global warming. Therefore, this paper discussed the causes of global warming, its implication to health security and measures to reduce its impact.

Global warming is disruption of the balance of natural systems that supply the necessities of life, including the most fundamental determinants of health food, air and water. According to Beniston (2002), global warming brings about adverse health effects. For instance, in 1986, accumulation of carbon dioxide, suddenly expelled from Lake Nyos, suffocated up to 1880 people. The Indian Ocean Tsunami in 2004 killed nearly 285,000 people. Recently in 2008, an earthquake in Sichuan injured millions of people (Ya Wen, 2009). The recent flood in Nigeria is as a result of global warming although the accurate overall statistics of the damage has not been revealed.

In Nigeria, climate change or global warming has become a new reality, with deleterious effects: seasonal cycles are disrupted, as are ecosystems; and agriculture, water needs and supply, and food production are all adversely affected. Sea-level rise in Nigeria last year was as a result climate change Apata (2012) reported. The attendant consequences of global warming as seen in the Nigerian cases include fiercer weather, increased frequency and intensity of

storm, floods, drought, increased frequency of fires, poverty, malnutrition and series of health and socio-economic consequences, Apata concludes.

The impact of global warming make some stable ecosystems such as the Sahel Savanna to become vulnerable because warming will reinforce existing pattern of water scarcity and increase the risk of drought in Nigeria. As well, the country's aquatic ecosystems, wetlands and other habitats will create overwhelming problem for an already impoverished populace. The problem of global warming in Nigeria and in other countries can be reduced through conservation of natural resource such as planting of trees; proper disposal of waste, and avoiding indiscriminate falling of trees.

The goals to protecting health from global warming include ensuring that public health security concerns are placed at the centre of the response to climate change; to implement adaptive strategies to minimize the impacts of climate change on health; and to support strong actions to mitigate climate change and avoid further health impacts. To achieve these goals, actions needed include raising awareness of the need to ensure public health security by acting on climate change; strengthen public health system to cope with threats posed by global warming; to ensure capacity to deal with public health emergencies; and to enhance applied research on health protection from climate change (Third World Network, 2008).

Causes of Global Warming

Global warming is primarily caused by human activity, especially burning of fossil fuels. As the earth warms, the delicate balance of climate, weather events and life is disrupted. Trapping of green-house gasses (like carbon dioxide) in the earth's atmosphere affect biodiversity and pose a serious health hazard to public health this trapping of green-house gases in the atmosphere results in global warming.

According to Medindia (2010) greenhouse gases that occur naturally such as carbon dioxide, water vapour, methane, ozone and nitrous oxide hold heat in the atmosphere. Although this creates a greenhouse effect, it keeps the earth warm enough to sustain life. Consequently, enhanced greenhouse effect caused more than normal heat to be trapped in the atmosphere and thereby results in global warming. Such greenhouse effect or abnormal increases of greenhouse gases are due to human activities such as burning of solid waste, wood, fossil fuels like oil, natural gasps and coal, deforestation and the release of

hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6) from industrial processes. Increase in the accumulation of aerosol particles can lead to global warming (Daly, 2012).

Consequences of Global Warming to Health & Health Security

Global warming increases the frequency of extreme heat waves. Heat waves triggers heat related illnesses such as heat exhaustion. The symptoms of heat exhaustion as outlined by Aldis (2008) include intense thirst, heavy sweating, anxiety, dizziness, fainting, nausea and headache. Heat exhaustion progresses to heat stroke. Heat wave mortality is often related to cardiovascular, cerebrovascular and respiratory causes. Again, air pollution concentration rises during heat wave, especially as people turn on their air conditioning, thus increasing their use of electricity. According to Haines (2006) air pollution exacerbate preexisting health conditions such as asthma.

Global warming triggers climatic change which causes environmental degradation and can lead to such conditions as storm, earthquakes, flood, hurricane, tsunami etc. These conditions invariably affect public health. According to Global warming Fact (2010), recent outbreak of malaria, dengue fever (break bone fever), Hanta virus and similar diseases in the West are due to global warming. Kraft (2008) stated that global warming increases the incidence of kidney stones. Still on the health consequences of global warming, Crocker (2009) and Liberman, Van and Ippen (2005) revealed that climate stress on agriculture worldwide adds millions of victims of malnutrition to the existing number.

Study carried out by Crocker (2009) revealed that Alga bloom may occur more often especially in polluted sea and cause infectious diseases such as cholera. It has also been noted that warmer climates increase the infestation of malaria carrying mosquitoes. Warmer temperatures also aggravate air and water pollution which poses health hazards to the public. Air pollution increases the incidence of air-borne disease. On the other hand, water pollution increases one's chances of contracting water-borne diseases such as cholera and guinea worm infection. In warmer climate, the cardiovascular system works harder to cool the body. This added work load increases the vulnerability of people with ailing heath to heart attacks.

High air temperature increases the ozone concentration at the ground level. Natural ozone layer in the upper atmosphere

protects the earth from the harmful ultraviolet radiation from the sun but at ground level ozone becomes a harmful pollutant that damages living tissues and aggravates asthma and other breathing disease. In a healthy individual, exposure to modest level of ozone can cause nausea, chest pain and pulmonary congestion. Federal Emergency Management Agency (2005) reported that global warming leads to injuries, death, reduced availability of fresh foods and water, increase stomach and intestinal disease as well as contributes to mental health impacts such as depression and post traumatic stress disorder.

Human beings face a wide range of health hazards due to exposure to climate change. WHO (2007) estimated global warming which results in climate change to be responsible for 3% of diarrhea, 35% of malaria, and 3.8% of dengue fever deaths worldwide in 2004. Scharonu, Van Caulil and Biberman (2002) projected that malnutrition would increase due to global warming because drought reduces variety in diets.

Global warming cause heatwaves, floods, storms, fires and drought (Aldis, 2008). Food has been shown to result in increased domestic violence and psot-traumatic stress disorder in women. The effects of drought on health include deaths, malnutrition, infectious diseases and respiratory diseases. Drought has also been linked to endemicity and epidemic frequency of meningococcal meningitis. Forest and bush fires case burns, damage from smoke inhalation and other injuries (Kaft 2008).

World Health Organization (2007) stated that climate change the range of some infectious disease vectors. Vector-borne diseases (VBD) are infections transmitted by the bite of infected arthropod species, such as mosquitoes, ticks, triatomine bugs, sand flies and black flies. Other diseases associated with global warming according to WHO (2008) include diarrheal disease, pneumonia, chronic obstructive pulmonary disease, asthma, allergic rhinitis and other respiratory diseases.

Food-borne diseases such as salmonella and other bacterial related in food may cause food poisoning because bacterial grow rapidly in warm environment. Disease causing agents (pathogens) can be transmitted through food and animals such as deer, birds, nice and insects (United States Global Change Research Program 2009). California Air Resources Board (2011) reported on how smog in Los Angeles decreases visibility and can be harmful to human health.

Developed nations have the ability and infrastructure to quickly identify and take adequate measures to curb problems that

challenges health security resulting from global warming. Example include emergency measures such as moving people struck by heat stroke to air conditioned rooms; and stringent action taken to reduce the emission of photochemical compounds that causes ground level ozone (World Health Organization 2007). Developing and under-developed countries like Nigeria are seriously handicapped in these areas of infrastructure and failure to draft and implement stringent laws against factories for adding to pollution and hence global warming (Haines, 2006). According to National Research Council (2010), global warming already contributes to more than 150,000 deaths and 5 million illnesses annually.

Measures for Reducing the Implication of Global Warming to Health Security

Daly (2012); WHO (2007); and Natural Research Council (2010) out lined the measures for reducing the health implications of global warming to include:

- Using less fossil flues and electricity-switch off lights, fans, air-conditioners, computers etc when not in use.
- Buying energy-efficient products such as compact fluorescent light (CFL) bulbs.
- Recycling of papers, plastics etc
- Planting more trees
- Using solar heaters to heat water
- Harnessing alternative sources of "clean" energy such as solar and wind energy that do not emit carbon dioxide.
- Avoid wastage of food and water.

Conclusion

In summary, global warming has severed adverse effect on the health of the public, the environment and plants. It has become a risk factor for heat stroke, cardiovascular, respiratory and infectious diseases. Health cannot be secured in the presence of global warming. Therefore, there is a great need to curb global warming by reducing to the bearest minimum those human activities that promote or cause global warming. Measures for reducing the implication of global warming to health and health security should be adopted internationally.

Recommendation

- Human activities that cause global warming especially burning of fossil fuels should be checkmated through enactment and implementation of law, and policy formulation.

- Awareness on the need to ensure health security by acting on climate change should be created.
- Empirical studies should be carried out on health protection from global warming.

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