ENVIRONMENTAL IMPACT OF TOBACCO SMOKES AND HUMAN HEALTH ISSUES

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Abstract - According to the United Nations report of 31 October (2011), World population reached 7 billion, out of which about 14 million people are tobacco smokers with inherent consequences resulting to respiratory morbidity and mortality. Inherent in tobacco is nicotine, an addictive substance in tobacco that causes smokers to continue their smoking habits. Along with nicotine, smokers inhale about 7,000 other chemicals (WHO, 2014). These chemicals harm nearly every organ in the body. Dangerous in tobacco smoke includes Tar, carbon monoxide, Hydrogen cyanide, hydrocarbons, nitrous oxides, organic acids, phenols, metals etc.

Keywords - Tobacco, Smoking, Human Health, Environment

BACKGROUND

Smoking has the direct impact of environmental pollution, about four thousand (4000) chemicals are presents in the cigarette which are breathed out and released to the atmosphere resulting in air, water, and soil pollution. Researchers estimated that 1.7 billion pounds of cigarette butts accumulate oceans, lakes, and waterways, these butts may be taken up by fish and other sea animals who may have mistaken them for food and humans, in turn, take sea foods, thereby storing these chemicals in their systems which are dangerous carcinogens. Discarded cigarette butts and filters consist of similar cancer-causing chemicals contained in a cigarette including other poisons.

These poisons according to researchers includes tar, carbon monoxide, hydrogen cyanide, hydrocarbons, nitrous oxides, organic acids, phenols, metals etc. Researchers around the world rank cigarette butts as one of the top most environmental nuisance because its heaps can be found everywhere and are non-biodegradable as well as toxic. They are recalcitrant found in soil, flowing and stagnant water, oceans, lakes for years and decades forming ocean soup, its presence in the water bodies and soil is a concern because it brings about wholesome hardship to birds and the sea animals in the ecosystem. The alarming rate of tobacco smoking fire incidences according to researchers cause about half a billion dollars per annum and 3 billion to tobacco-related fire cases used for cleaning and maintenance. The horror-stricken effect of this fire according to researchers is that cigarette fires killed about 800 people and injured a total number of 1,660 in 2005. According to (WHO,2014) tobacco kills up to Half of its users and tobacco smoke kills nearly 6 million people each year. The epidemıc is one of the biggest public health threats the world is facing. Approximately, one person dies every six seconds due to tobacco, in 10 adult death ranges to one tobacco user (WHO,2013,2014).However, according to Carlozo (2009) cigarette butts can ooze out chemicals such as cadmium, lead, and arsenic into the delicate marine environment within an hour of contact could be disastrous, water and swimmers including the sea animals may perhaps imbibe these chemicals into their system resulting to serious health problems. These chemicals and their health related issues are described as below.

Tar consist of different particles in tobacco smoke. It is the resinous and particulate matter present in tobacco smoke and other plant smoking subtances. The particles contains Benzo (a) pyrine and other dangerous chemicals (carcinogens), that causes teeth colouration to tobacco smokers, color deposit to the lung tissues and finger nails. Tar is bioaccumulative and is stored in the body over time which is toxic and damages smokers lungs through different biochemical and mechanical processes. Tar damages mouth by rotting and blackining teeth, gums and desensitizing test buds. Tars are mutagenic and carcinogenic agents in tobacco smokes. Tars when presence in the lungs may affect the cillia causing them not to work or work properly resulting to lung cancer as tobacco particles in the cigarette are no longer trapped by the cillia but may enter aveoli directly enhancing rough breathing.

Carbon monoxide is a fatal odourles gas that penetrates the blood stream displaces oxygen from heamoglobin because it has more affinity to heamoglobin than oxygen which may lead to sudden sufforcation in tobacco smokers, a concentration of over 2000 ppm is a concern. However, tobacco smokes increases the CO content of the blood. According to researchers the CO level for nonsmokers depends on the background level in the air and is between 0 and 8 parts per million. Smokers level of CO depends on the time of the day and the amount of cigarette sticks or pack taken per day. For example a smoker that takes one pack of cigarette per day will have CO level of 20 parts per million.

Researchers said once a smoker stops smoking, the CO level will return to normal within one to two days.

Hydrogen Cyanide. lungs contains cilia like tiny hairs that cleanses the lungs but hydrogen cyanide stops celia action in the lungs causing poısonous chemicals from smoke to build up in the lungs, these includes hydrocarbons, nitrous oxides, organic acids, phenols, oxidizing agents. Hydrogen cynide concentrations in cigarette varies according to countries. İn the United States the amount of hydrogen cyanide in cigarette mainstream inhaled is between 0.6-27 percent. Smoking cigarette is one of the major source of cynide exposure for people who are not working in cyanide related industries. Non smokers are at risk of breathing in cyanide poison when exposed to cigarette smoke. High level of cyanide in the body can cause headache, dizziness, weakness, nuasea, vomiting etc.

Metals. Metal subtances found in tobacco smoke includes Arsenic, Cadnium, and lead. Several of these metals are Carcinogenic. According to (WHO,2014) tobacco kills up to Half of its users and tobacco smoke kills nearly 6 million people each year.. However, according to Gbadamosi et al (2015) report on selected tobacco brand were found to contain metals like Fe, Ca, Zn, Cu, and some heavy metals such as Cd, Ni and arsenic which are lethal. Pesence of these metals in human body has high health implications and are mostly carcinogens. Long term exposure to arsenic from drinking water and food can cause cancer and skin lesions (WHO, 2015). People who smoke tobacco can also be exposed to the natural inorganic arsenic content of tobacco because tobacco plants essentially take up arsenic naturally present in the soil.High exposure to arsenic may also result to cardiovascular disease, neurotoxicity and diabities. When smokers imbibe arsenic through their daily intakes, this substances may continue to increase in number to a toxic level that can no longer be controlled which may finally cause sudden death in the life of a smoker.The symptoms and signs caused by long-term elevated exposure to inorganic arsenic differ between individuals, population groups and geographical areas. Thus, there is no universal definition of the disease caused by arsenic (WHO, 2010). Smoking of 20 sticks of cigarette per day has been estimated to result to inhalation of 2-4 microns of cd and 1-5 microns of Pd (Mohammad et al, 2012). When lead is inhaled through smoking it accumulates in the blood stream, bones and soft tissue. And because it is not readily excreted. Will continue to pile-up around the renal organ, liver, nervous system and other organs in the body. Excessive exposure to lead may cause anemia, kidney disease, reproductive disorders, and neurological impairments such as seizures, mental retardation, and/or behavioral disorders. Brain inflammation caused by excessive cigarette smoking is associated with low intelligence, poor motor function, attention deficits and behavioral problems in children, decrease cognition in adults, high rate of stroke, multiple sclerosis, autism and Parkinson's disease.

CONCLUSION

Since tobacco smokes/smoking is dangerous to health and since smokers are liable to die young, it is pertinent to say and to advise smokers to change from their smoking habits in other for them to enjoy the good things of life. This will no doubt reduce to minimum the inherent disease effects of smokes and smoking. And will no doubt reduce issues of climate change globally.

REFERENCES

[1] BUTTsOUT. Ten things you should know about cigarette butt litter. Cited 2009 Apr 7. Available from:http://www.buttsout.net/litter_stats.

[2] County of Fairfax, VA. Don't be a litterbug: You're your butt where it belongs! 2008 Nov Available from: http://www.fairfaxcounty.gov/nvswcd/newsletter/buttlitter.htm.

[3] Carlozo, LR. Cigarettes: 1.7 billion pounds of trash. Chicago Tribune 2008 Jun 17 (cited 2009 Apr 7). Available from: http://archives.chicagotribune.com/2008/jun/17/news/chi-cigarette-butts-0618-nujun18.

[4] Lindblom, E. Toll of tobacco in the United States of America. Washington, C: Campaign for Tobacco-Free Kids. Available from:http://www.tobaccofreekids.org/research/factsheets/pdf/0072.pdf.

[5] Centers for Disease Control and Prevention. Fire prevention research saves lives. Injury Research in Action (cited 209 Apr 7). Available from: http://www.cdc.gov/ncipc/ERPO/UNC-success-story.pdf.

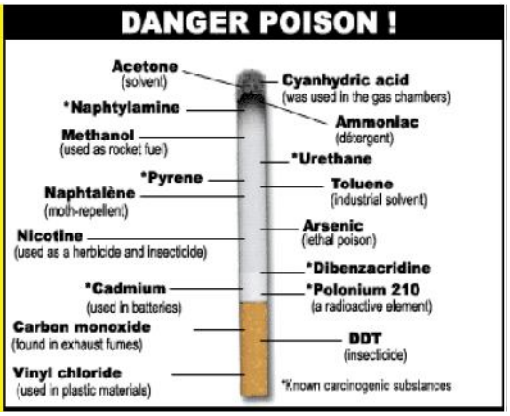
[6] National Institute of Dental and Craniofacial Research. Spit tobacco: A guide for quitting. Bethesda (MD): National Institutes of Health; 2009 Feb 11 (cited 2009 Apr 7). Available from:http://www.nidcr.nih.gov/OralHealth/Topics/SpitTobacco/SpitTobaccoAGuideforQuitting.htm.

SUPPLEMENTARY MATERIALS









Sources: World Health

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