

Indoor Air Pollution and Effects on Environment

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ABSTRACT

Indoor pollution is degradation of indoor air quality by harmful chemical and other materials; it are often up to 10 times worse than outdoor pollution. This is because contained areas enable potential pollutants to create up quite open spaces. Statistics suggest that in developing countries, health impacts of indoor pollution far outweigh those of outside pollution. Indoor pollution from solid fuels accounted for 3.5 million deaths and 4.5% global daily-adjusted life year (DALY) in 2010; it also accounted for 16% particulate pollution. Over 80% of time for most people is generally spend indoor environments, so that the influence of building structures, surfaces and ventilation on important considerations when evaluating air pollution exposures. Indoor air pollution happens when certain air pollutants from pieces and gases contaminate the air of indoor surroundings. These air pollutants can cause breathing diseases or even cancer type of pollution is significantly more harmful due to how concentrated the is in indoor environments. Objective of this paper to study the indoor air pollution effect the environment.

KEYWORDS: indoor air pollution, environment

INTRODUCTION

Indoor air pollution dates back to prehistoric times when humans first moved to temperate climates and it became necessary to build shelters and use fire inside them for cooking, heat and light. The fire led to exposure to high levels of pollution, as evidenced by the soot found in prehistoric caves. Approximately half of the world's population and up to 90% of rural households in developing countries still rely on unprocessed biomass fuels in the form of wood, manure and crop residues. They usually burn indoors in open fires or stoves that malfunction. As a result, there are high levels of air pollution, to which women, especially those responsible for cooking, and their young children, are more exposed.

In developed countries, modernization has been accompanied by a shift from biomass fuels such as wood to petroleum products and electricity. However, in developing countries, even where there are cleaner and more sophisticated fuels, households often continue to use simple biomass fuels. Although the proportion of global energy derived from biomass fuels fell from 50% in 1900 to around 13% in 2000, there is evidence that its use is now increasing among the poor. Poverty is one of the main barriers to the adoption of cleaner fuels. The slow pace of development in many countries suggests that biomass fuels will continue to be used by the poor for many decades.

Despite the importance of exposure to indoor air pollution and the increased risk of acute respiratory infections in childhood, chronic obstructive pulmonary disease and lung cancer, the research community, donors and formulation managers of policies have neglected the effects on health. We

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present new and emerging evidence of such effects, including the impact on public health. We consider the perspectives of interventions to reduce exposure and identify priority issues for researchers and policymakers.

Biomass fuel is any material derived from plants or animals that humans deliberately burn. Wood is the most common example, but the use of animal manure and crop residues is also widespread. China, South Africa and some other countries also use coal widely for domestic needs.

In general, the types of fuel used become cleaner and more convenient, efficient and expensive as people ascend the energy scale. Animal manure, on the lower rung of this ladder, is succeeded by crop residues, wood, coal, kerosene, gas and electricity. People tend to climb the scale as socioeconomic conditions improve. Other sources of indoor air pollution in developing countries include smoke from nearby houses, burning of forests, agricultural land and household waste, the use of kerosene lamps and industrial and vehicle emissions. Indoor air pollution in the form of environmental tobacco smoke can be expected to increase in developing countries. It is worth noting that fires in open homes and the smoke associated with them often have considerable practical value, for example in insect control, lighting, food and fuel drying, and the taste of food.

Many of the substances in biomass smoke can damage human health. The most important are particles, carbon monoxide, nitrous oxides, sulfur oxides (mainly from carbon), formaldehyde and polycyclic organic matter, including carcinogens such as benzo [a] pyrene. Particles

with diameters less than 10 microns, and particularly those less than 2.5 microns in diameter, can penetrate deep into the lungs and appear to have the greatest potential to harm health.

Effects

1. Asbestos is the main cause of indoor air pollution. Asbestos can be found in various materials commonly used in the automotive industry, as well as in house building. They are most commonly found in coatings, paints, building materials and roofs and tiles.

You will not find asbestos as often as you used it because newer products do not contain asbestos. However, if you have an old house that was built a long time ago, the risks of asbestos is much greater than those of a new house. Asbestos has been banned in the United States and is no longer used.

2. Formaldehyde is another major cause of indoor air pollution. It is no longer produced in the United States due to its ban in 1970, but it can still be found in paints, sealers and wood floors.

3. Radon that can be found under your home in various types of mother rock and other building materials can also be a cause of indoor air pollution. Radon can get into the walls of your home and put you and your family at risk.

4. Tobacco smoke that comes from outside and inside areas can also be a contaminant of indoor air.

5. Many pollutants that grow in humid environments can be brought from outside areas. These contaminants such as mold, mold, bacteria, dust mites, as well as animal dander, can enter the home and make you sick.

6. There are many objects you have in your home that also cause indoor air pollution. Objects such as wood stoves, stoves and fireplaces, all emit carbon monoxide and nitrogen dioxide. There are still billions of people who use this type of fuel to heat their homes on a daily basis.

7. Other household products, such as varnishes, paints and certain cleaning products, can also emit pollution to the air you breathe inside your home.

Serious Effects of Indoor Air Pollution

The effects of indoor air pollution can be life threatening. Children and the elderly are more prone to the side effects of indoor air pollution.

1. If asbestos is found in your home, it can cause very serious health problems, such as lung cancer, asbestosis, mesothelioma and other types of cancer.

2. If contaminants such as animal dander, dust mites or other bacteria enter the home, some serious effects will also occur. You will begin to experience symptoms of asthma, throat irritation, flu and other types of infectious diseases.

3. If lead is found in the home, it can also be seriously fatal. It can cause brain and nerve damage, kidney failure, anemia and a defective cardiovascular system.

4. Formaldehyde, one of the most common indoor air pollutants, can also cause health problems. You may experience irritation of the throat, eyes and nose, as well as allergic reactions. There have been several cases in which it has also caused cancer.

5. Tobacco smoke causes people to experience severe respiratory irritation, pneumonia, bronchitis, emphysema, heart disease and lung cancer.

6. Chemicals such as those used in certain cleaning agents and paints can cause you to experience loss of coordination, liver, brain and kidney damage, as well as various types of cancer.

7. If you use gas stoves in your home, it can cause respiratory infections and lung damage and irritation.

Recommendations

1. Smoking is one of the most common types of indoor air pollution. The best thing to do is to **quit smoking and make your home anti-smoking zone**. The less smoke that is emitted into the air the less chance of one of the listed effects happening to someone that you love. Smoking is a leading cause of cancer. Lung cancer is the most common form of cancer caused by smoking.

2. Make sure you **check the ingredients on any of your cleaning supplies** to make sure they are environmentally friendly. Do your homework on what is considered to be a dangerous ingredient. You can also find an environmentally friendly cleaning list online so you know exactly what to buy.

3. **Have your home checked for asbestos**. This is typically done before you move into the home. If you have a home that was built prior to the ban of asbestos, it is important to make sure there is none still lingering within the home.

4. **Stop using gas stoves** in your home as well as certain types of space heaters. They release harmful chemicals that could be dangerous to human health.

5. **Have your home inspected for any mold, radon, or any other harmful chemical** or bacteria that may be in your home. These types of inspections are traditionally done before you move in so keep that in mind as well.

6. **Use a good vacuum cleaner that has strong brushes** to keep out chemicals and allergens that can accumulate in your home. Areas in your home which are most commonly visited must be cleaned thoroughly by using the vacuum several times.

7. Most of the dirt comes in the home from the shoes. **Keep a large mat out of every room** that will reduce the amount of dirt, and other pollutants from getting into your home.

Understanding the causes and effects of indoor air pollution will help you to understand why it should be prevented and what you can do to prevent it yourself. There are various online resources that can help you to discover the best options for you and your family. Making small changes within the home can really make a huge difference. Having your home inspected on a regular basis can really help you

to prevent any further damage to not only your home, but you and your family as well.

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