HAZARDS OF PASSIVE SMOKING
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INTRODUCTION
Breathing other people’s smoke is called passive, involuntary or secondhand smoking. It is either from "side-stream" smoke from the burning tip of the cigarette or from the “mainstream” smoke exhaled by the smoker. Many potentially toxic gases are present in higher concentrations in the sidestream smoke than the mainstream smoke and nearly 85% of the smoke in a room results from the sidestream smoke. In fact secondhand smoke is a major source of indoor air pollution. Non-smokers can get affected by breathing in cigarette smoke at home, at work, in bars and other smoky environments outside the home. Infants and children are especially prone to passive smoking if their parents smoke.

About 2.2 million people in UK are exposed to passive smoking in their places of work. According to World Health Organization (WHO), around four million, or almost half of the world’s children, breath air polluted by tobacco smoke particularly at home. A survey conducted in London found that over half of the non-smoking employees (51%) were exposed to tobacco smoke at work, with almost a third (31%) being exposed every day or most of the days.

Toxins in the smoke: Tobacco smoke contains over 4000 chemicals in the form of particles and gases. The particulate phase includes tar (composed of many chemicals), nicotine, benzene and benzo(a)pyrene. The gas phase includes carbon monoxide, ammonia, dimethyl Nitrosamine, formaldehyde, hydrogen cyanide and acrolein. Some of these have marked irritant properties and some 60 are known or suspected carcinogens. The Environmental Protection Agency (EPA), USA has classified environmental tobacco smoke as a class A (known human) carcinogen along with asbestos, arsenic, benzene and radon gas.

HEALTH IMPACTS
It is thought that the health risks of passive smoking may have been substantially underestimated. Some of the immediate effects include eye irritation, headache, cough, sore throat, dizziness and nausea. Adults with asthma can experience a significant decline in lung function, while new cases of asthma may be induced in children.

In the long term, passive smokers have a 25 per cent increased risk of heart disease and lung cancer. A major review by the Scientific Committee on Tobacco and Health (SCOTH) concluded that passive smoking is a cause of lung cancer and ischaemic heart disease in adult non-smokers, and a cause of respiratory disease, cot death, middle ear disease and asthmatic attacks in children.

Heart disease: Studies have shown that passive smoking is a risk factor for ischemic heart disease and may be associated with vascular endothelial dysfunction. Even short term exposure to tobacco smoke has a measurable effect on the heart in non-smokers. It reduces the coronary blood flow. A recent analysis combining the results of 18 studies involving more than half a million subjects suggested that exposure to passive tobacco smoke increases one’s risk of coronary artery disease by 25%. American Heart Association believes that passive smoke causes 40,000 cardiac related deaths per year, which are more than the estimated deaths from lung cancer due to passive smoking. A study published in the British Medical Journal suggests that previous studies on the effects of passive smoking on the risk of heart disease may have been underestimated. The researchers found that blood cotinine levels among non-smokers were associated with a 50-60% increased risk of heart disease.

Lung cancer: It has long been known that passive tobacco smoke increases one’s risk of developing lung cancer. Because most cigarettes have filters, some scientists think that sidestream smoke is more harmful than the smoke exhaled by the smoker. Non-smokers who are exposed to passive smoking, have a 25% increased risk of heart disease and lung cancer. A more recent review of the health impacts of passive smoking by the International Agency for Research on Cancer (IARC) noted, “The evidence is sufficient to conclude that involuntary smoking is a cause of lung cancer in non-smokers.”

Risk to young children: Almost half of all children in the UK are exposed to tobacco smoke at home. Passive smoking increases the risk of lower respiratory tract infections such as bronchitis, pneumonia and bronchiolitis in children. One study found that in households where both the parents smoke, young children have a 72 per cent increased risk of respiratory illnesses. Passive smoking causes a
reduction in lung function and increased severity in the symptoms of asthma in children, and is a risk factor for new cases of asthma in children.\textsuperscript{17,18} Passive smoking is also associated with middle ear infection in children, as well as possible cardiovascular impairment and behavioural problems.\textsuperscript{19}

Infants of parents who smoke are more likely to be admitted to hospital for bronchitis and pneumonia in the first year of life. More than 17,000 children under the age of five are admitted to hospital every year because of the effects of passive smoking.\textsuperscript{19} Passive smoking during childhood predisposes children to develop chronic obstructive airway disease and cancer as adults.\textsuperscript{20} Exposure to tobacco smoke may also impair olfactory function in the children. A Canadian study found that passive smoking reduced children’s ability to detect a wide variety of odours compared with children raised in non-smoking households.\textsuperscript{21} Passive smoking may also affect children’s mental development. A US study found deficits in reading and reasoning skills among children even at low levels of smoke exposure.\textsuperscript{22}

Exposure to passive smoking during pregnancy is an independent risk factor for low birth weight.\textsuperscript{23} A recent study has also shown that babies exposed to their mother’s tobacco smoke before they are born grow up with reduced lung function.\textsuperscript{24} Parental smoking is also a risk factor for sudden infant death syndrome (cot death).

Deaths from secondhand smoke: Whilst the relative health risks from passive smoking are small as compared to those from active smoking, the overall health impact is large. It is estimated that domestic exposure to secondhand smoke in the UK causes around 2,700 deaths in people aged 20-64 and a further 8,000 deaths a year among people aged 65 years or older. Exposure to secondhand smoke at work is estimated to cause the death of more than two employed persons per working day across the UK as a whole (617 deaths a year), including 54 deaths a year in the hospitality industry. This equates to about one-fifth of all deaths from secondhand smoke in the general population and up to half of such deaths among employees in the hospitality trades.\textsuperscript{25}

Public opinion: Public opinion surveys have shown widespread support for smoking restriction in the public places and this has been growing steadily in recent years. A survey of smoking attitudes in 2002 found that 86% of respondents (including 70% of smokers) agreed that smoking should be restricted at work and a similar proportion favoured smoking restrictions in restaurants. The survey also revealed that a majority of people supported smoking restrictions in pubs.\textsuperscript{26}

Concern for developing countries: The majority of studies measuring costs of children exposure to tobacco smoke have been conducted in the developed countries. For developing countries, these costs while likely to be significant may be affected by country’s specific conditions. The magnitude of costs in any country depends not only on the level of children’s exposure and rates of disease but also on the monetary values placed on health care and other resources. If a country lacks a well-developed health care system, the costs will appear artificially low, as individuals does not have access to care. As less developed countries grow up and their health care systems evolve, the costs will become more real and are likely to increase from their current levels, as smoking prevalence is on the rise in these countries.

CONCLUSION & RECOMMENDATIONS

Passive smoking poses a significant health risk, especially for children. Public health policies are needed to protect this vulnerable population. The aim of such policies is to ensure the right of every child to grow up in an environment free of tobacco smoke, in accordance with the United Nations Convention for the rights of child.

We recommend the following measures in every country to reduce smoking:

1. To ban all advertisement and promotion of tobacco products.
2. To increase the price of tobacco products.
3. To prohibit sale of tobacco products to minors.
4. To ban smoking in most workplaces and public places.

REFERENCES

4. International Consultation Environmental Tobacco Smoke (ETS) and child health 1999; Geneva, Switzerland.

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