

CALCULATING THE ECONOMIC COST OF SMOKING



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One of the leading causes of non-communicable diseases and preventable deaths is tobacco consumption.^{1,2} The world loses more than 8 million lives annually due to tobacco use.³ Aside from causing premature deaths, smoking imposes substantial costs on society by causing diseases to both smokers and non-smokers.^{4,6} In 2012, the global costs associated with tobacco use was equal to 1.8% of global GDP, with 40% of the loss concentrated in developing countries.⁵ There are various factors that need to be considered when calculating the economic costs of smoking. We list and discuss some of these below.

The costs associated with smoking can be divided into direct or indirect costs.^{4,6}



- The direct cost of smoking represents the monetary value of goods and services consumed as a result of smoking and smoking-related illness and for which a payment is made.⁴ These costs are related to direct healthcare utilization as well as nonhealthcare costs.
- Healthcare costs include inpatient services, outpatient department visits, medications, and all other services from healthcare providers to treat smoking-related diseases. Costs of herbal treatments and traditional healers are also included.⁴
- The nonhealthcare cost associated with smoking are the costs of transportation to the healthcare provider, care-giving by nonhealthcare providers, losses from fires due to smoking, and expenses to train or hire replacements for sick smokers.

- The lifetime approach estimates the excess costs expected to occur as a result of smoking-related illness among current smokers compared to never smokers over their lifetimes. The costs are the excess lifetime costs per smoker compared to a never smoker due to smoking-related diseases if he/she continues to smoke throughout life at their current smoking levels.^{4,6}

Two main methods are used to estimate the costs of smoking: additive & subtractive.



- The indirect costs of smoking, on the other hand, include the costs generated from two potential sources: morbidity and mortality.⁴
- Morbidity costs of smoking relate to the value of lost productivity by sick and/or disabled persons from smoking-related disease. They include costs associated with **absenteeism** — the number of workdays lost due to poor health and **presenteeism** — the reduced quality or intensity of work due to poor health while working.^{7,8}
- Mortality costs measure the value of life lost due to smoking, i.e. the productivity losses due to premature death from smoking-related diseases.

- The additive method allows us to estimate the healthcare costs incurred by smokers for various smoking-related diseases after which Smoking Attributable Fraction (SAF) is applied to determine the costs that can actually be due to smoking. The SAF is the proportion of deaths, healthcare utilization, costs and/or other health outcome measures that can be attributable to smoking.⁴

- The subtractive approach considers two groups: smokers and nonsmokers with very identical demographic characteristics except smoking status. The healthcare costs are determined for each group and the costs attributable to smoking is the excess cost of smokers compared to never-smokers.⁴

Depending on who bears the cost directly, costs of smoking may be internal or external.



The cost of smoking can be calculated for a year (one time) / for the lifetime of the individual using either the annual cost approach (the lifetime approach).⁴



- The first approach sums the excess cost of smoking-related diseases and deaths among current smokers and ever-smokers compared to never-smokers in any particular year.* These costs are incurred as a result of smoking-related illnesses manifested during that year due to past consumption of and/or exposure to tobacco. Total economic cost under this approach relates to persons with newly diagnosed smoking-related diseases, those in advanced stages of smoking-related illness, and those who die of smoking-related illness in that year, irrespective of the time of quitting or initiation.⁴

- Internal costs of smoking are borne by smokers directly. They include costs such as the purchase price of tobacco products, healthcare costs, fire losses and productivity losses for the individual.

- External costs of smoking are the costs imposed on nonsmokers. Examples of external costs of smoking are the healthcare costs paid by nonsmokers due to second-hand smoking, subsidized healthcare costs of smokers by nonsmokers through insurance payments or public health systems and productivity losses.⁴

Smoking imposes cost on both smokers and nonsmokers, hence the need for strict regulations to reduce the economic cost of smoking.

References:

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* Current smokers are people who have smoked 100 cigarettes in their lifetime and who currently smoke cigarettes; never-smokers are those who have never smoked or have smoked less than 100 cigarettes in their lifetime; and ever-smokers are those who have smoked at least 100 cigarettes in their lifetime and who had quit.⁹

