

An Analysis of the Effects of Major Causes of Deaths on Life Expectancy in Sri Lanka

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The life expectancy at birth is considered as an indicator of economic and social development of a country. The life expectancy in Sri Lanka which is about 73 years is considered exceptionally high compared to its per capita income level. This situation can be further improved if the major causes of deaths are carefully targeted.

The objective of this paper is to analyse the effects of major causes of deaths on life expectancy at birth. The seriousness of each major cause is ascertained by determining the increase in life expectancy at birth if each of the major causes is eliminated. Since the total elimination of a cause is not possible, the increase in expectancy is also calculated if each of the causes is eliminated by a certain percentage.

The major causes were selected by considering the magnitude of the death ratios for the year 2004 published by the department of Census and Statistics in 2010. The selected causes were diseases of circulatory system, external causes, diseases of respiratory system, diseases of nervous system, neoplasm and diseases of digestive system. The life expectancy at birth for the country was estimated using the familiar techniques. The cause-eliminated life expectancy was calculated by constructing separate life table for each cause based on cause-eliminated probabilities of dying. The proportional increase in life expectancy if the i^{th} cause is eliminated by δ percentage was estimated by the result $H^{(i)}\delta$, where $H^{(i)}$ is the minus weighted average of logarithms of $l_x^{(i)}$, the weights being the $l_{(x)}$ column.

The years of life that would be added if each of the six major causes was eradicated are 9.75 years, 1.77 years, 1.46 years, 1.41 years, 1.18 years, 0.64 years for the major causes respectively. A ten percent drop in each of the major causes would raise the life expectancy by 0.22 years, 0.16 years, 0.08 years, 0.052 years, 0.092 years, 0.056 years, respectively. These results indicate that life expectancy at birth can be further improved by carefully eradicating major causes by targeted percentages.

Key words: *Life expectancy, Cause-Specific- Deaths, Cause-Eliminated probabilities, Cause- Eliminated life expectancy*