Respiratory disease pandemics since the beginning of the 20th century: mortality specifics in Sweden

Abstract

This work aims to characterize the impact of studied respiratory disease pandemics on mortality trends in Sweden from the early 20th century to the present and to provide a comprehensive overview of their effects on mortality in the Swedish population. It focuses on five pandemics: the Spanish flu (1918–1920), the Asian flu (1957–1958), the Hong Kong flu (1968–1969), the Mexican swine flu (2009–2010), and the coronavirus COVID-19 pandemic (2019–present), including the historical context of each pandemic and virus transmission mechanisms. The primary objective is to provide a comprehensive overview of these pandemics with a focus on Sweden and to evaluate their impact on Swedish mortality. The second objective is to identify similarities and differences between the pandemics in relation to age-specific mortality patterns. To achieve these objectives, the study utilizes specific mortality rates before, during, and after the pandemic periods, excess mortality rates, absolute changes in life expectancy at birth, and changes in interval life expectancy. The Spanish flu and COVID-19 pandemics had the greatest impact on Swedish mortality, marked by significant changes in life expectancy at birth. In contrast, the Asian and Hong Kong flus had milder effects, and the impact of the Mexican swine flu was almost negligible. The Spanish flu caused a significant increase in mortality among young adults aged 20–45, while the other influenza pandemics and COVID-19 predominantly affected older age groups.

Key words: influenza, pandemics, COVID-19, mortality, life expectancy