

Analysis of the Mortality Trends in Japan after the Outbreak of COVID-19

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The aim of this study was to analyze recent mortality trends in Japan after the outbreak of COVID-19. Accordingly, age-standardized death rates and life tables were used.

The levels of actual and expected age-standardized death rates were almost the same in 2019, whereas the actual level was lower than expected in 2020. Although the actual rates in 2021 were higher than expected, they had not significantly deteriorated compared to recent trends. The actual life expectancy in 2020 for females was higher than expected, and that for males was almost the same as the expected level. The actual life expectancy for both sexes in 2021 was lower than expected, with a comparatively larger difference for males than females.

Age-standardized death rates for COVID-19 in 2021 were much higher than those in 2020. Death rates from pneumonia plunged in 2020 while deaths from heart disease increased in 2021. Regarding the extension of life expectancy by cause-deleted life tables, female suicides were at a high level in 2020 and 2021. The monthly rates for female suicide rose after July 2020 and remained at a high level thereafter.

A decomposition of the extension of life expectancy between 2019 and 2021 by cause revealed the negative contributions of COVID-19 for both sexes, particularly between 2020 and 2021. The contribution of pneumonia was positive for the period 2019-2021, whereas that of heart disease was negative between 2020 and 2021 and that of female suicide was highly negative between 2019 and 2020. The negative contributions of COVID-19 for females between 2019 and 2021 were -0.086 years, whereas the contributions of female suicide were -0.075 years (almost the same level). The share of the contribution aged from 15 to 44 is nearly 80% in female suicide that reveals crucial impact of the younger aged mortality by suicide.

We analyzed the Japanese mortality trend until 2021 in this study. An increase in the number of deaths in 2022 is expected due to the sixth and seventh waves of infections related to COVID-19. It is important to analyze the level of the mortality not only by the number of deaths or crude death rates, but also by the age-standardized death rates and life tables that are not affected by the change in the age distribution, since we are facing rapid population aging in Japan. It would be desirable to observe and analyze Japanese mortality trends—including those resulting from COVID-19—continuously using the demographic methods presented in this study.

keywords: COVID-19, age-standardized death rates, life expectancy, life tables, mortality analysis