

The purpose of this study is to investigate the effect of non-pharmaceutical interventions on Covid-19 mortality. Focused on Japan, state of emergency declared by Government of Japan is viewed as the package of multiple public health interventions aimed to suppress the spread of Covid-19. In this analysis, I collect data on Covid-19 related deaths from Nippon Hoso Kyokai, Japan Broadcasting Corporation (NHK) from Jan 16, 2020 to May 8, 2022, and then I get information on state of emergency from the official website of Cabinet Office of Japan. The route of Covid-19 spread in Japan makes the two-stage least square with instrumental variables (TSLS-IV) estimation possible, and the distances from four main airports to 47 prefectural capitals serve as the instrumental variables. Though NPIs in Japan failed to retard the excess death rates, these anti-viral measures were effective in decreasing the relative peak to average death rate ratio, which means the voluntary lockdowns in Japan have their inherent limitations but still helped to relief the heavy burden on medical system and flatten the curve. We also find the original two-dose vaccine series are of great help to reducing both excess death rates and relative ratio, and vaccines are powerful weapon against SARS-CoV-2 virus.

Keywords: non-pharmaceutical interventions, state of emergency, vaccination