Peer Review Report

Review Report on The Impact of the COVID-19 Pandemic on Mortality Rates from Non-Communicable Chronic Diseases in Taiwan: An Interventional Time Series Study

Original Article, Int. J. Public Health

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EVALUATION

Q 1 **Please summarize the main findings of the study.**

It has been noted that the COVID-19 pandemic has negatively affected certain non-communicable chronic diseases (especially cardiovascular diseases and diabetes), potentially due to factors such as reduced access to hospitals and healthcare services, as well as individual behavior changes (inactivity, weight gain, etc.). During the pandemic, a marked increase in death rates attributable to hypertensive diseases, heart diseases, and diabetes (13.4%, 4.3%, and 8.2%, respectively) was observed. The authors recommend that policymakers and healthcare institutions develop strategies to improve and support healthcare service delivery for patients with chronic diseases and metabolic risk factors during the pandemic.

Q 2 **Please highlight the limitations and strengths.**

Covering a long time period (2011–2022), using an appropriate model like SARIMA to assess post-intervention changes in the time series, having a large sample (the entire country), and the ability to interpret the results from practical and policy perspectives constitute the strengths of this study.
The limitations of the article are clearly stated (for instance, the sample is limited to Taiwan, the possibility of misclassification of causes of death, etc.). However, more attention could be paid to the potential impact of certain differences, such as the delayed onset of the early pandemic wave in Taiwan compared to other countries. While selecting January 2021 as the “intervention point” is a reasonable approach, there were also some measures and concerns in Taiwan in 2020 (albeit not extensive). Therefore, it could be emphasized that there might have been a partial “transition period” effect during that time.

Q 3 **Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.**

The study aimed to investigate whether deaths from non-communicable chronic diseases in the country increased during the COVID-19 pandemic. Using a population-based (national-level) dataset, it analyzes the impact of the pandemic on chronic disease mortality through an “interventional time-series” model. Methodologically, this is a stronger approach compared to many studies in the literature that rely on simpler segment comparisons.
1. However, chronic obstructive pulmonary disease—which, according to the World Health Organization’s World Health Statistics 2023 – Monitoring Health for the SDGs report, is among the four major non-communicable diseases causing the highest number of deaths—was not included in this study. It is mentioned that the study included the top 10 fatal non-communicable chronic diseases, but under those circumstances, I do not fully understand why chronic obstructive pulmonary diseases were not on that list. WHO ranks them among the top four, and according to my brief web search, chronic obstructive pulmonary diseases are generally also in the top 10 non-communicable diseases causing the highest mortality in Taiwan. Could you please explain why they were not included in the study? If you have access to the relevant data, I believe it would be more beneficial to include chronic obstructive pulmonary disease as well.

2. The authors state the possibility of inaccurate recording of causes of death as a limitation. However, in the discussion section of the article, they focus on the increase in death rates from hypertension, heart disease, and diabetes being due to disruptions in the healthcare system or due to restrictions such as quarantine and related behavioral changes. Rather than mentioning it only as a limitation, it would be beneficial to discuss in the discussion section as well that the observed increase in the records of deaths from hypertension, heart diseases, and diabetes might be attributable to misclassification.

Some countries have published their own guidelines for identifying all deaths attributable to COVID-19, but in practice, there are reported differences between countries and even among different physicians in the same country. Providing a brief explanation of the procedure followed in Taiwan to confirm a death as being caused by COVID-19 would help readers gain a sense of the reliability of the dataset.

In the introduction of the study, it is reported that there were “9 million COVID-19 cases and 15,755 deaths” in Taiwan in 2022. This corresponds to a rate of 1.7 deaths per 1,000 cases, which is quite low compared to the global figure of 5 to 20 per 1,000. This could possibly be explained by factors such as a high testing capacity, good access to healthcare and intensive care, and a high vaccination rate.

However, the key point I want to highlight here is that readers might wonder: “Could the number of COVID-19-related deaths in Taiwan have been underrecorded?” or “Could deaths attributable to COVID-19 have been recorded as deaths due to hypertension, diabetes, or heart disease?” Therefore, providing information about the death registration system and discussing whether the observed increase in hypertension-, diabetes-, and heart disease-related deaths could have been influenced by such misclassification would be valuable in the discussion section.

PLEASE COMMENT

Q 4 **Is the title appropriate, concise, attractive?**

If the authors find it appropriate, using the title 'The Impact of the COVID-19 Pandemic on Mortality Rates from Non-Communicable Chronic Diseases in Taiwan: An Interventional Time Series Study' would be more fluent and academically more accurate.

Q 5 **Are the keywords appropriate?**

yes

Q 6 **Is the English language of sufficient quality?**

Yes

Q 7 **Is the quality of the figures and tables satisfactory?**

Yes.

Q 8 **Does the reference list cover the relevant literature adequately and in an unbiased manner?)**

Yes

QUALITY ASSESSMENT

Q 9 **Originality**

Q 10 **Rigor**

Q 11	Significance to the field	■■■□□
Q 12	Interest to a general audience	■■■□□
Q 13	Quality of the writing	■■■■□
Q 14	Overall scientific quality of the study	■■■■□

REVISION LEVEL

Q 15 Please make a recommendation based on your comments:

Minor revisions.