BMC Public Health

CORRECTION Open Access

Correction: Does mask usage correlate with excess mortality? Findings from 24 European countries

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Correction: BMC Public Health 25, 913 (2025)
https://doi.org/10.1186/s12889-025-22172-x

Following publication of this article [1], the Editors received correspondence raising concerns that parts of the original text implied a causative link between the variables under investigation. The correspondence noted that the data analyzed in the study are observational in nature, and that the analyses are therefore only able to demonstrate association rather than causation.

Having been made aware of these concerns, the authors have revised parts of the text to clarify that, given the observational nature of the data, the analyses cannot prove causation.

At the request of the Editors, additional content has also been added to the article to provide context and clarity on the source and limitations of the data on mask usage.

Changes made to the text are indicated below:

In the Methods section under the header "Data sources", after the second sentence, the following new sentence has been added regarding the source of mask usage data:

"The IHME mask data was obtained from the Global COVID-19 Trends and Impact Survey (CTIS) database, which is, in turn, is based on daily Facebook surveys in 200 countries/territories and multiple languages [24, 25]."

The following two publications have been added to the references list, with subsequent citation numbers adjusted throughout the manuscript:

1. 24. Kreuter F, Barkay N, Bilinski A, Bradford A, Chiu S, Eliat R, et al. Partnering with a global platform to inform research and public policy making. Survey Research Methods. 2020:Vol 14 No 2 (2020): Survey Research Methods During the COVID-19 Crisis.
2. 25. Badillo-Goicoechea E, Chang TH, Kim E, LaRocca S, Morris K, Deng X, et al. Global trends and predictors of face mask usage during the COVID-19 pandemic. BMC public health. 2021 Nov;21:2099.

In the same paragraph, after the third sentence the following additional sentence has been added to provide readers with an updated link to the mask usage data to assist with transparency and reproducibility:

"The CTIS data on mask usage and other parameters can be downloaded from https://ihmecovid19storage.blob.core.windows.net/archive/2022-01-10/ihme-covid19.zip."

In the same paragraph, the following wording change has been made to avoid ambiguity regarding the source of mask usage data:

The original article can be found online at https://doi.org/10.1186/s12889-025-22172-x.

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Originally:

"Except for the Gini index, obesity rate and population density all data shown in Tables 1 and Table S1 (Supplementary file 1) were downloaded from the Our world in data (OWID) website…".

Corrected:

"Except for mask usage, the Gini index, obesity rate and population density all data shown in Tables 1 and Table S1 (Supplementary file 1) were downloaded from the Our world in data (OWID) website…".

In the Results section, under the header "Bivariate correlations" the following wording change has been made to the first sentence in the paragraph:

Originally:

"Our first step was to analyze the associations between excess mortality, medical and socioeconomic variables (Table 1)".

Corrected:

"Our first step was to analyze the associations between excess mortality and putative medical and socioeconomic variables (Table 1)."

In the first paragraph of the Discussion section, the first sentence has been edited.

Originally:

"This is the first study to examine the impact of mask usage on excess mortality across European countries, encompassing a population of about 500 million people."

Corrected:

"This analysis represents an initial attempt to assess the association between mask usage and excess mortality at the ecological level across European countries, encompassing a population of about 500 million people."

In the same paragraph, the third sentence has been edited.

Originally:

"The main conclusions of this study are twofold: at the population level (1) masks did not reduce COVID-19 transmission, and (2) mask usage is significantly associated with excess mortality."

Corrected:

"The main conclusions of this study are two-fold: (1) at the population level, no clear evidence was found that mask usage reduced COVID-19 transmission, and (2) a significant association was observed between higher mask usage and higher excess mortality."

In the Discussion section, in the paragraph beginning with the words "It could be argued…", the following two sentences have been added after the second sentence to clarify points of discussion relating to Figure S1:

"It should also be noted that the reverse does not hold, as increased mask usage did not necessarily lead to higher COVID-19 mortality. Instead, mask adoption rates in each country were primarily shaped by governmental mandates and individual choices."

In the final paragraph of the Discussion section (beginning with "A primary limitation of this study…") the following sentence has been added before the fifth sentence to highlight limitations of the mask usage data, with a minor change in the wording of the beginning of the fifth sentence to preserve the flow of discussion.

Originally:

Other limitations were that no in-country comparisons with subsets of the populations have been performed and that the linear regression model that we used did not include non-linear terms and interaction terms between the variables.

Corrected:

Another limitation is that data on mask usage were obtained through Facebook surveys, as described elsewhere [25, 24]. Even though responses were weighted for age, gender, and location, the samples may not fully represent the population of a given country. Other shortcomings were that no in-country comparisons with subsets of the populations have been performed and that the linear regression model that we used did not include non-linear terms and interaction terms between the variables.

The first sentence of the Conclusions section has been edited:

Originally:

"In conclusion, our results suggest that, at a population level, masks not only fell short of preventing COVID-19 transmission in Europe but may have also contributed to unforeseen adverse effects."

Corrected:

"In conclusion, our results suggest that, at the population level, mask usage in Europe did not appear to prevent COVID-19 transmission and may have been associated with unintended adverse effects."

The original article [1] has been updated.

Published online: 09 December 2025

References

1. Tausk D, Spira B. Does mask usage correlate with excess mortality? Findings from 24 European countries. BMC Public Health. 2025;25:913. https://doi.org/10.1186/s12889-025-22172-x.