



# Re-examining the importance of mask-wearing at mass gathering events—Authors' reply

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We thank Michio Murakami for his comment<sup>1</sup> regarding the protective effect of mask-wearing during the mass gathering events analyzed in our previous work.<sup>2</sup> As M. Murakami notices in his letter, the benefits of mask-wearing for reducing SARS-CoV-2 spread could be likely attributed to two combined effects: 1) the reduction of the actual viral shedding by infected individuals and 2) the protection of uninfected individuals from contagion.

Of note, all participants in the event analyzed in our study tested negative in an antigen rapid-detecting test (Ag-RDT) before entering the event. Therefore, all transmissions that occurred during the event should be attributed to infected individuals with false-negative results. Based on previous evidence, the negative predictive value of Ag-RDTs is approximately 99.6% in screenings of asymptomatic individuals,<sup>3</sup> which would have yielded 138 individuals with false-negative results in the event analyzed in our study. Unfortunately, our study design did not allow identifying individuals with false-negative results. Also, our survey for assessing adherence to preventive measures was intendedly constrained to the respondent's behavior to minimize recall biases. Hence, we could not include mask-wearing among companions as an explanatory variable in the statistical model, thus limiting our analysis to the protective effect of masks on uninfected individuals.

The overall acknowledged ability of face masks to reduce both, viral shedding in infected individuals and viral uptake in uninfected individuals,<sup>4</sup> indicates that the overall contribution of mask-wearing to preventing SARS-CoV-2 spread in a crowded event is far beyond than the protecting effect for contagion reported in our analysis.

## Contributors

C.S., D.O., B.C. and O.M. designed the original study. C.S., D.O. and J.P. collected data. C.S., D.O., B.B., M.A.R. and O.M. analysed data. C.S., D.O. and O.M. interpreted data. C.S. wrote this manuscript. All authors reviewed and approved the final version of this manuscript. C.S. verified the underlying data.

## Declaration of interests

We declare no competing interests.

## Acknowledgements

We thank Gerard Carot-Sans for providing medical writing support.

## Funding

Crowdfunding campaign YoMeCorono (<https://www.yomecorono.com/>).

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The Lancet Regional Health - Europe

2022;18: 100425

Published online 22 June 2022

<https://doi.org/10.1016/j.lanepe.2022.100425>

DOI of original article: <http://dx.doi.org/10.1016/j.lanepe.2022.100337>, <http://dx.doi.org/10.1016/j.lanepe.2022.100423>

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