

## Authors' response

We thank the authors of the letter for reading our article<sup>1</sup> with interest and emphasize the importance of appropriate use of personal protective equipment (PPE) but would guard against interpreting the importance of any one component over the others based on our study findings. Though there is a relative paucity of high-quality evidence on the role of PPE in averting infections, a recent Cochrane review has found that PPE made of more breathable materials may not be associated with higher infections, gowns provide better protection than aprons, spoken instructions provide fewer doffing errors and various ensembles of PPE sets do not have significant differences in infection events<sup>2</sup>. Since our study was not designed or statistically powered to examine relative protective effects afforded by various PPE components, we recommend that the associations be interpreted with caution and standard guidelines for PPE use be followed<sup>3</sup>.

Our study<sup>1</sup> was undertaken to inform public health responses during the COVID-19 outbreak in the country. While we acknowledge the shortfall in reaching the calculated sample size, the response rate in our study has been higher than those reported in the literature from India and abroad<sup>4-7</sup>. We also adopted several strategies to reduce the non-response rates, such as training of interviewers, multiple call attempts, targeted call times and establishing credentials and significance of the research topic at the beginning of the interview<sup>8-10</sup>. We did not intend to match the cases and controls for gender and other demographic factors to avoid overmatching. As we selected them from the eligible pool (1073 SARS-CoV-2-infected and 20329 non-infected HCWs) in a random manner, any baseline differences that were captured in the cases and controls could be reflective of the existing differences in demographic variables in the databases forming the

pools. Further, we chose a parsimonious model and avoided individual consideration of masks and gloves in the final multivariate model as the use of these items had a conceivable chance of being correlated. We agree that the sizes of some of the diagnostic subgroups in the multivariate model were small.

We would like to highlight that the authors of the letter were rightly alarmed by the lack of mask usage in HCWs, but some of them were HCWs in low-risk settings, such as administrative staff in healthcare setting or security personnel. Moreover, some of the responses could be timed to the earlier phase of the pandemic in the country when the use and availability of PPE was patchy and perceived risks between members within a particular occupational group also varied.

Pranab Chatterjee<sup>1</sup>, Tanu Anand<sup>7</sup>, Kh. Jitenkumar Singh<sup>2</sup>, Reeta Rasaily<sup>3</sup>, Ravinder Singh<sup>4</sup>, Santasabuj Das<sup>8</sup>, Harpreet Singh<sup>5</sup>, Ira Praharaj<sup>6</sup>, Raman R. Gangakhedkar<sup>6</sup>, Balram Bhargava<sup>†</sup> & Samiran Panda<sup>9,\*</sup> <sup>1</sup>Translational Global Health Policy Research Cell, <sup>†</sup>Department of Health Research, Ministry of Health & Family Welfare, New Delhi 110 001, <sup>2</sup>ICMR-National Institute of Medical Statistics, <sup>3</sup>Division of Reproductive Biology, Maternal Health & Child Health, <sup>4</sup>Division of Non-Communicable Diseases, <sup>5</sup>Informatics, Systems & Research Management Cell, 6Division of Epidemiology & Communicable Diseases, <sup>7</sup>Multidisciplinary Research Unit/Model Rural Health Research Unit, †Indian Council of Medical Research, New Delhi 110 029, <sup>8</sup>Division of Clinical Medicine, ICMR-National Institute of Cholera & Enteric Diseases, Kolkata 700 010, West Bengal & 9ICMR-National AIDS Research Institute. Pune 411 026, Maharashtra, India \*For correspondence: director@nariindia.org

## References

- Chatterjee P, Anand T, Singh KJ, Rasaily R, Singh R, Das S, et al. Healthcare workers & SARS-CoV-2 infection in India: A case-control investigation in the time of COVID-19. Indian J Med Res 2020; 151: 459-67.
- Verbeek JH, Rajamaki B, Ijaz S, Sauni R, Toomey E, Blackwood B, et al. Personal protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff. Cochrane Database Syst Rev 2020; 4 : CD011621.
- World Health Organization. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages. Available from: https://apps.who.int/iris/bitstream/handle/10665/331695/WHO-2019-nCov-IPC\_PPE\_use-2020.3-eng.pdf, accessed on June 16, 2020.
- Zhang R, Thacker N, Choudhury P, Pazol K, Orenstein WA, Omer SB, *et al.* Comparison of two survey methods based on response distribution of pediatricians regarding immunization for children in India: Mail versus telephone. *IJTDH* 2016; 16: 1-10.
- Gahr M, Eller J, Connemann BJ, Schönfeldt-Lecuona C. Subjective reasons for non-reporting of adverse drug reactions in a sample of physicians in outpatient care. *Pharmacopsychiatry* 2016; 49: 57-61.
- Peretti-Watel P, Bendiane MK, Pegliasco H, Lapiana JM, Favre R, Galinier A, *et al.* Doctors' opinions on euthanasia, end of life care, and doctor-patient communication: Telephone survey in France. *BMJ* 2003; 327 : 595-6.
- DuVal G, Clarridge B, Gensler G, Danis M. A national survey of U.S. internists' experiences with ethical dilemmas and ethics consultation. J Gen Intern Med 2004; 19: 251-8.
- de Leeuw ED, Hox JJ. I am not selling anything: 29 experiments in telephone introductions. *Int J Public Opinion Res* 2004; *16*: 464-73.
- Sangster RL. Can we improve our methods to reduce nonresponse bias in RDD surveys? In: 2003 joint statistical meetings - Section on survey research methods. San Francisco: American Statistical Association; 2003. p. 8.
- O'Toole J, Sinclair M, Leder K. Maximising response rates in household telephone surveys. *BMC Med Res Methodol* 2008; 8:71.