Review of: "Real-World Efficacy of N95, Surgical, and Cloth Masks in Mitigating SARS-CoV-2 Respiratory Infections: A Comprehensive Comparative Study"

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Potential competing interests: I have no potential competing interests to declare. I am an industrial hygienist with expertise in respiratory protection and infectious aerosol exposures. I consult with individuals, organizations, companies, government agencies, etc. on these topics, both paid and voluntarily. None of my consulting work conflicts with my ability to provide a fair and unbiased review of this research.

This is an interesting idea but there are some important issues that need to be addressed before I can agree with the conclusions.

Methods

- You don't describe the time period of this study - was it during 2020 before vaccines were available?
- If it was after vaccinations were available, do you know the vaccination status of the participants? If so, were the rates of vaccination similar in each of the 3 groups?
- Who were the subjects? How were they recruited? What were their demographics (age, sex, health status, etc.)? Were the three groups matched in terms of demographics? [If not matched, then the differences seen could be due to demographics & not the different interventions.]
- Did you provide the masks or respirators to the participants? If so, please describe each in detail - manufacturer, model number/name, etc. [Please note - an “N95” is not a “mask” but a **respirator** if it meets the testing criteria in its country of manufacture.] Not all N95 respirators are the same. For example, N95 respirators with ear loops do not fit well.
- Did you make any effort to ensure that participants received a “well-fitting” mask or respirator? Did you provide participants with different sizes? Did participants receive any training in how to correctly wear the mask or respirator (US approved respirators usually come with manufacturer instructions).
- Did you conduct any fit testing for the masks or respirators?
- Did you collect any information about “wear time” or “exposures” from the participants? What they did each day, how many people they encountered, the types of spaces they were in, what was happening in those spaces, etc.

Results

If you don't know the demographics, vaccine status, or exposures for participants in each group, then the differences could be due to these variables rather than to the different type of face covering. For example, it may be that people wearing N95 respirators are less likely to spend time in shared spaces with people they don't know, which would lower the likelihood of exposure and thus result in less chance of being infected. Thus, the lower incidence of infection could be a result of lower exposure rather than a better control.

Limitations

It is always important to list both strengths and limitations of a study. My comments above should give you an idea of some of the limitations that may apply to this research.

References

A number of the references you cite in the Literature Review do not match up with your statements. For example, #5 is a single modeling study and does not support the statement about studies in “real-world settings.” If you are referring to studies cited in #5, then you need to cite those studies (and be sure to review them). The same applies to other statements and citations in this section.