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Competing interests

None declared

Reference

1. Moe S, Dugré N, Allan GM, Korownyk CS, Kolber MR, Lindblad AJ, et al. PEER simplified tool: mask use by the general public and by health care workers. *Can Fam Physician* 2020;66:505-7 (Eng), e187-9 (Fr).

Response

Thank you for your letter concerning our infographic¹ and the systematic review² of randomized controlled trials (RCTs) evidence regarding masks and viral infections. One of the key principles of the PEER (Patients, Experience, Evidence, Research) Group is to promote clear and consistent messaging informed by the best available evidence.

While evidence is important, it is not the only factor that contributes to recommendations. Decisions regarding health include considerations of evidence, clinician experience, and patient preferences and values. This infographic provides clinicians with a synopsis of the current best evidence, and for full transparency we also included the ranges of potential benefit and the gaps in high-level evidence. It was not designed to communicate a specific policy, agenda, or guideline. We state in our last sentence: “This simplified tool is not a guideline; rather, the information is presented to promote application informed by the best available evidence.”¹

You have asked for a number of changes and also expressed a number of comments and concerns:

Make it clear that these are studies of influenza. In each infographic, we mention influenza at least once and also state flulike illness several times (which is likely more than just influenza). We also state there is no mask research in coronavirus disease 2019 (COVID-19). We believe this makes it pretty clear we are not talking about severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection.

It would be prudent to outline how SARS-CoV-2 might behave differently than influenza viruses, that masks in this pandemic are primarily for source control, and the mounting evidence regarding asymptomatic spread further supports the need for public masking. As mentioned above, the purpose of this infographic was to present the RCT evidence, not to discuss how the coronavirus behaves or asymptomatic spread. These topics have been covered in a previous Tools for Practice article, summarized in the journal.³

Put distancing and hand hygiene in the same (larger) font size as masking. We suggest that this be the recommendation for the public: “Masking is one part of preventing infection. Do this along with 2-metre physical distancing and hand hygiene consistently for your best chance to prevent infection.” We already state quite clearly in the middle of each infographic, “Masks are only one part of preventing infection,” and then add in examples of what people should consider.

Those who spoke with members of the public, family, or friends about the infographic found that a large number of the public concluded that this proved to them that cloth masking in public was not helpful. We are not sure how, if the infographic was fully reviewed, one would assume cloth masks do not work for community prevention. As stated in the infographic, we focused on RCT evidence and thus do not know yet if cloth masks work in the community. Unfortunately, there is no RCT evidence examining cloth masks for the community prevention of viral respiratory illness.

On the health care worker side, we mention based on 1 trial, cloth mask users had 2% more flulike illness than surgical mask users over 4 weeks. This does not say cloth masks do not work (they might be markedly better than nothing) and the finding is specific to the health care setting. We believed this part of the graphic would help health care professionals make choices around mask type use. Interestingly, the graphic supports the present pattern of use in health care settings: use of surgical masks for most encounters and progression to N95 for high-risk encounters.

There is fair evidence to suggest that the public tends to overestimate the benefits of preventive interventions. For instance, a survey published in the *New England Journal of Medicine* suggested that women overestimated the benefit of mammography by approximately 30 times.⁴ A 4% absolute reduction in transmission of influenza-like illness with surgical masks translates to a number needed to “mask” of 25 over 6 weeks. For comparison, the number needed to screen with mammography is approximately 2000 women over 7 years to prevent 1 breast cancer death.⁵ Perhaps a closer example is influenza vaccine for reduction of influenzalike illness from 21.5% to 18.1%, giving a number needed to “vaccinate” of 30 over a flu season.⁶ It is important to keep the effectiveness of other interventions in context when evaluating benefit.

We do not have the luxury of waiting for RCTs to determine the magnitude of benefit that masking could provide for this novel virus. We agree decisions around wearing masks need to be made without waiting for RCTs of masks for the prevention of SARS-CoV-2 infections. However, in the absence of direct evidence for masks for prevention, we believe it is important to consider the best indirect evidence, such as wearing masks

for the prevention of viral respiratory infections in general. It is tempting to consider observational evidence, which suggests a relatively large benefit to wearing masks (ie, an odds ratio of 0.32 [95% CI 0.26 to 0.39]).⁷ However, these results could have been influenced by many biases, including known and unknown confounders. Perhaps people who wore masks in these observational studies were different; for example, they might have been more careful in other ways than people who did not wear masks. Thus, RCTs are needed to determine the potential effect of individual interventions like masks.

Interestingly, even into 2020, systematic reviews of RCTs suggested wearing a mask in the community did not reduce the risk of developing a viral infection.^{8,9} However, we believe previous systematic reviews had potential biases, most specifically pooling studies with different designs, potentially obscuring possible benefits. Pooling studies which more closely mirror generalized use of masks in the community to reduce viral transmission, we demonstrated there is high-level evidence that wearing masks in the community can reduce flulike infections (risk ratio of 0.83 [95% CI 0.69 to 0.99]).² We believe this is the first time a reduction in viral infections with masks in the community has been shown. While these results were not from trials in SARS-CoV-2 and do not clarify if mask use protects others, they provide the first high-level evidence to the argument for community mask use as part of the preventive efforts to reduce transmission of viral infections like COVID-19.

It was hoped this information would be helpful to the public, clinicians, and policy makers, while we await further COVID-19-related evidence—preferably RCTs. Finally, we would encourage others to listen to 2 “Best Science Medicine” podcasts (<http://therapeuticseducation.org>) released in August (episodes 455 and 456),

where we discuss the results of our systematic review, the development of the tool, and how we believe this evidence could be put into the context of personal protective equipment. We believe you will hear our messages are not dissimilar to yours.

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