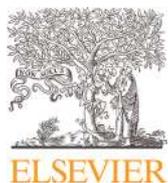




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## Letter

**Response to “MacIntyre et al., 2020: A rapid systematic review of the efficacy of face masks and respirators against coronaviruses and other respiratory transmissible viruses for the community, healthcare workers and sick patients”**



Dear Editor,

In response to the recent article “A rapid systematic review of the efficacy of face masks and respirators against coronaviruses and other respiratory transmissible viruses for the community, healthcare workers and sick patients” (MacIntyre et al., 2020) published in your journal, we would like to emphasize the tantrum revolving face-coverings throughout COVID-19 pandemic. The authors have efficiently pointed out the puzzlement and discrepancy among different authorities towards the recommendation of face protective gears as well as the guidelines of its use - “The World Health Organization recommends surgical mask for health workers providing routine care to a coronavirus disease patient, whilst the US Centers for Disease Control and Prevention recommend a respirator” (MacIntyre et al., 2020). In the closed isolation settings, the viral load could be maximum. Healthcare workers are the foremost targets of the nosocomial contagion. MacIntyre et al. (2020) suggested for continuous use of respirators by health professionals during working hours which were likely to be more protective than medical masks as aerosolization of SARS-CoV-2 at medical centers had also been reported in current studies. The authors stated - “but any protection is far less than from a respirator”. Smereka et al. (2020) also added that loosely fitted surgical masks (pore diameter >100 µm) may hardly resist tinier air-borne SARS-CoV-2 (60–140 nm diameter) particles. Thus, they have also advised that health-care givers may use filtering face piece 3 (FFP3). FFP3 respirators have a maximum internal leakage limit of 5% and can retain 99.95% of particles smaller than 0.5 µm (Smereka et al., 2020). But a recent study displayed the effectiveness of surgical masks to lessen the detection of several viruses along with seasonal human coronavirus copies in respiratory droplets as well as aerosols (i.e. NL63 was found in respiratory droplets whereas OC43 and HKU1 were present in both samples) Coronaviruses were successfully detected in aerosol samples of 40% ‘unmasked’ individuals of the cohort but none of their samples tested positive for coronaviruses when they were ‘masked’ (notably, the surgical masks) (Leung et al., 2020b). MacIntyre et al. (2020) have also mentioned this experiment in their review article. Hence, we highlight the fact that surgical masks may effectively protect health-care personnel in the case of COVID-19 particularly when the respirators are not readily available to fulfill the demand. Additionally, Quan et al. (2017) developed salt-coated fibrous filtration layers for surgical masks which could inactivate influenza virus subtypes. It may un-

lock a way to next-generation masking system by using better fabrics coated with non-harmful polymers or nano-particles which can essentially desensitize most air-borne pathogens.

Furthermore, we should concur that the mass-masking single-handedly will not effectively protect the front-liners until clumped with other personal protective equipment such as gloves, gowns, face-shields, eye-protective stuff, contact and droplet precaution and scrupulous hand hygiene (Klompas et al., 2020). MacIntyre et al. (2020) duly mentioned the improved protection from the virus when facemasks were clubbed with hand hygiene. Notably, these body-protective gears in combination are not easy to use at established health care centers and temporary quarantine or isolation centers having significant variations in temperature and moisture. We would like to draw further attention to the fact that loads of countries could hardly provide personal protective equipments to all levels of clinicians. In that view, clinicians tend to depend on medical masks or simply cloth masks. But relying on masks alone may deflect them from practicing other basic safety measures and anomalously it would lead to spread more COVID-19 contagion. Otherwise, once a local outbreak starts in community settings general public begins panic-buying face-masks or sardonically, the N-95 respirators leading to a scarcity in the worldwide supply chain, price-hike and shortage for front-line healthcare providers (Fen et al., 2020). No available mask exposes them to a bigger threat during patient interaction. Moreover, the improper face-mask use as well as the repetitive use of disposable masks may increase the vulnerability towards the transmission of COVID-19 (Fen et al., 2020).

Above all contradictions, nonetheless, masks are trouble-free, easily available, low-priced and clearly efficient. Masks are the visual alarm to the need for social distancing along with additional protective measures. Furthermore masks are also the insignia for front-line healthcare professionals reminding them of their well-being, self-confidence, security, and trust upon their hospital authorities (Klompas et al., 2020). Mass-masking, no less than altruism, would work more than an individual level in community settings. It may lead to a significant reduction of the basic reproduction number of SARS-CoV-2 and consequently may portray an effect parallel to herd immunity (Cheng et al., 2020). In this regard, researchers are urging policymakers to re-evaluate the role of universal masking in the way to combat COVID-19 (Leung et al., 2020a). Afterward, we would like to urge to reassess the importance of prioritizing the health workforce in the mass-masking chain.

#### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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