Importance of Face Masks for COVID-19: A Call for Effective Public Education

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Considerable debates about the general community use of face masks for protection against coronavirus disease 2019 (COVID-19) stemmed out from differing views taken by health authorities. Misconceptions and stigmatization towards the use of face masks may hinder the containment of the COVID-19 pandemic. We address this previous debate by analyzing the advice on the community use of masks across different credible health authorities: countries that promoted the use of masks acknowledged that masks are effective but also explained the importance of their proper use along with other hygiene measures. In contrast, authorities that recommended against the community use of masks mainly cited shortage of supplies, the argument that the public do not have the adequate skills to wear them, or that wearing masks might reduce compliance with other important behaviors. We suggest promoting effective behavioral changes in personal protective measures by teaching microbiological knowledge instead of just listing out the “do’s-and-don’t’s.”

Keywords. COVID-19; face masks; misconception; public health; effective education.

This article discusses the basis of the previous worldwide debate prior to 6 April 2020 on whether surgical face masks (also called medical masks) should be used in the general community for protection against the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that causes the coronavirus disease 2019 (COVID-19) [1]. This debate stemmed from the previous guidelines issued by the World Health Organization (WHO) on the use of masks for prevention of COVID-19 [2, 3]. According to the earlier versions of WHO's guidelines, asymptomatic individuals in the general public need not wear medical masks unless they care for or had close contact with ill individuals. Public health authorities released similar statements subsequently in some Western countries on the use of masks (see Table 1). However, on 6 April 2020 WHO softened their stance on the use of masks in healthy individuals, although their guidelines did not specifically recommend widespread use in community settings [1]. This article also discusses what impact this debate had on the general public and whether a change in stance is adequate to promote behavioral changes.

We acknowledge that there are limited supplies of medical masks worldwide. Before going into the details of mask use in the community, it is important to first note that we should ensure there is a sufficient supply of face masks for use by healthcare workers. In addition, high-performance respirators such as N95 masks should be reserved for healthcare settings where they will be used most effectively. However, it is inevitable that healthy individuals from affected areas start to opt for the use of medical masks when there is an increased evidence of community outbreaks, particularly now that the WHO softened their stance on their use. As of 10 May 2020, the outbreak of COVID-19 has resulted in more than 4 million confirmed cases worldwide in over 209 countries/territories, causing more than 280 000 deaths [24]. Infections spread from person to person in the community, and it is essential to identify and implement measures to reduce transmission to slow down or even stop spread. Protective behaviors and actions at the individual level can contribute to reducing transmission at the community level [25].

However, confusion from previous public health guidelines has already resulted in stigmatization in Western countries toward the choice of using masks by many Asian communities as one of the means to prevent the spread of SARS-CoV-2. Research has shown that it is indeed a challenge for a conceptual change to occur when a strong medical misconception had rooted in the general community, as in the case of misinformation against vaccination [26]. There have been reports on both the continuous mistrust on the effectiveness of masks and the improper use of masks in the community. In order to comprehend the basis of the public’s misinterpretations on the effectiveness of face masks, it is necessary to first understand the content of the original guideline published by WHO on prevention of COVID-19 in community settings on 29 January 2020 [3].

As summarized in Table 1, the original guidelines from WHO did not contradict the recommendations of public health...
Table 1. Summary of the Earlier Recommendations on Medical Masks Use in the General Community Across Different Credible Health Authorities Prior to 6 April 2020

| Source | Encourages Community Use of Face Masks? | Reasons/Further Notes Provided? | Suggestions on the Use of Masks for Healthy Individuals Under Alternative Circumstances? |
|--------|----------------------------------------|----------------------------------|--------------------------------------------------------------------------------------|
| WHO [2, 3] | No | Improper use may hamper its use; No evidence to support the effectiveness against COVID-19 of mask-use in the community | Use masks when: When the culture has been to use masks; When the local government encourages their use; Upon close contact with infected/suspected/high-risk individuals |
| United States [4] | No | Spread of SARS-CoV-2 is mainly through close contact; Stockpiling of masks may place a burden on the supply to medical staff | Use masks when [5]: In workplaces of and upon contact with infected/suspected/high-risk individuals |
| Canada [6] | No | Improper use may increase infection risks; May induce a false sense of security that that played down other essential hygiene measures | Use masks when: When the culture has been using masks; when the local government encourages their use; Upon close contact with infected/suspected/high-risk individuals |
| United Kingdom [7, 8] | Not explicit | Nil | Use masks when: Upon close contact with infected/suspected/high-risk individuals |
| Australia [9] | No | little evidence supporting the widespread use of surgical masks in healthy people | Use masks when: Upon close contact with infected/suspected/high-risk individuals |
| New Zealand [10] | No | Cited as suggestions from WHO | Use masks when: Upon close contact with infected/suspected/high-risk individuals |
| France [11] | No | Facemasks cannot be worn at all times | Use masks when: Upon prolonged close contact with an infected individual |
| Italy [12] | No | Citing as suggestions from WHO; Increased the risk of infection due to a false sense of security and greater contact between hands, mouth and eyes. | Use masks when: Upon close contact with infected individuals |
| Spain [13] | No | Worn by people who are sick; An inadequate use of masks can contribute to a shortage of them in those situations for which they are indicated. | Use masks when: Upon close contact with infected individuals |
| Germany [14] | No | Citing as suggestions from WHO | Nil |
| Singapore [15] | No | Only for sick individuals | Nil |
| China [16, 17] | Yes | The general community should make the judgment of mask-use based the risk levels.; Masks are recommended in situations which include, going to medical institutions, in crowded open spaces, in a crowded or densely populated indoor environment, and close contact with people of quarantine at home | Masks are not required: When you are at home (in isolation), engaging in outdoor activities or in well-ventilated indoor places |
| Hong Kong SAR, China [16, 19] | Yes | Recommended when taking public transport or staying in crowded place, clinics or hospitals visits.; Face mask provides a physical barrier to fluids and large particle droplets. When used properly, surgical masks can prevent infections transmitted by respiratory droplets. | Nil |
| Macau SAR, China [18, 19] | Yes | If it is necessary to go out, wear a mask at all times | Nil |
| South Korea [22] | Yes | Wearing a mask can prevent infectious diseases | Nil, |
| Japan [23] | Yes and No | If you wear a facemask in confined, badly ventilated spaces, it might help avoid catching droplets emitted from others | Masks are not required: If you are in an open-air environment, the use of facemask is not very efficient. |

Majority of the suggestions issued by governments from various affected regions did not argue that proper use of masks would be ineffective. Health authorities that initially discouraged the use of masks have also cited other valid reasons for its lack of necessity:

1. In open space where people keep a distance from each other.
2. When you are alone.
3. When there is no outbreak in your region.

Health authorities from countries that promoted the use of masks acknowledged that face masks are effective but also explained the importance of their proper use along with other hygiene measures. In contrast, authorities that recommended against the use of masks in the general community mainly cited shortage of supplies as well as the argument that the public do not have the adequate skills to wear them or that wearing masks might reduce compliance with other important behaviors.

Abbreviations: COVID-19, coronavirus disease 2019; SAR, Special Administrative Region; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; WHO, World Health Organization

aAlthough the representatives from National Health Service (UK) have previously spoken again the use of masks through the press.

bDespite ambiguous guidelines on the use of masks, Japan and Singapore ensured all citizens weekly rations of medical masks and banned exports of medical masks.
Research in public health education established that effective behavioral changes in hygiene comes after conceptual change [31]. Establishing accurate hygiene concepts can be achieved effectively through teaching microbiological knowledge [31]. Therefore, the government and credible public health authorities may consider initiating simple but effective public education campaigns by incorporating Au and colleagues’ suggestions that focus first on these basic facts in microbiology [31]:

i. Viruses are like living things and can be killed/destroyed despite not visible;
ii. Only “live” viruses can make us sick if they enter our body;
iii. There are many ways to destroy the viruses (eg, through heat and disinfectants) before they enter our body;
iv. Viruses can enter our body through our eyes, nose, and mouth; if they don’t enter our body, we will not get sick.

In addition to only listing out the “do’s and don’ts,” establishing the above fundamental microbiology concepts in viral infections will promote critical thinking in the general public when they evaluate the appropriate hygiene measures under different situations. It is advised that the local governments and credible public health authorities in different nations start taking immediate actions to facilitate effective public health and hygiene education.

We can witness the comparatively low local infection rate in Hong Kong, Taiwan, and Macau, despite the proximity with highly affected areas [24]. One reason has been suggested to be the strong rapid community responses, including advocating for rapid school closures, stricter border controls, and isolation and quarantine measures [25]. Moreover, because they were affected by severe acute respiratory syndrome in 2003, the majority of residents in China and neighboring affected areas had already acquired health concepts to ensure the accurate use of masks and other proper personal hygiene measures. As of 10 May 2020, it is relieved that many countries have already adopted strict measures to ensure social isolation to stop the spread of SARS-CoV-2, given the low rate of medical mask usage. However, when the daily social lives of people in these areas resume, the use of masks properly (given their availability) can extend the prevention of community outbreak beyond these quarantine periods. The collective and appropriate actions from the whole community is what the world requires now to help contain COVID-19.

Notes

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