

Commentary

Universal Wearing of Face Masks in the Dental School during the COVID-19 Pandemic

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It is anticipated that there will be a second wave of the Covid-19 pandemic in the Fall of 2020. Fall is also the time when the influenza virus appears and infects thousands of individuals. Communities across the United States are already preparing for the next viral outbreak, including schools at all levels. Public health authorities and educational administrators must be thinking well in advance of what must be done to protect their students from becoming infected from both viruses that are primarily transmitted by the respiratory route.

A common characteristic of the coronavirus that causes Covid-19 and the influenza virus is sustained transmission between individuals in the community that can spread over a short time causing relatively high morbidity and mortality [1,2]. Personal and environmental protective measures such as hand washing with soap and water (or alcohol-based hand sanitizers) and respiratory etiquette (covering your mouth and nose when coughing or sneezing) have been shown to decrease viral spread [3,4]. For the safety and protection of not only dental students, but for all healthcare personnel and the patients who present for dental treatment in dental schools, should face masks be universally be worn?

Such controversy and confusion of wearing face masks by individuals in the community is fueled by the WHO recommending against the wearing of face masks because of the lack of evidence of protection against the coronavirus [5]. Further, there are several inconclusive studies on the efficacy of face mask use and the ability to prevent transmission of infectious disease from respiratory droplets and aerosols. In a meta-analysis, Xiao and colleagues (2020) concluded that there is no significant reduction in laboratory influenza transmission [4]. Aiello et al (2010), showed that there is limited evidence that wearing a face mask in households, in the presence of an individual suffering from the influenza virus, or in mass social gatherings will prevent the spread of the influenza virus [6]. In a systematic review by Brainard et al (2020) examining whether wearing a face mask with other protective measures would prevent the transmission of respiratory illness such as coronavirus, influenza and tuberculosis, the authors concluded that the evidence

is not sufficiently strong to support the widespread use of face masks as a protective measure against Covid-19 [7]. However, Booth et al (2013) demonstrated that use of surgical face masks resulted in a six-fold reduction in exposure to the influenza virus in aerosols and recommends the use of face masks [8]. Lastly, in a study by Leung et al (2020) use of surgical face masks prevented the transmission of both the coronavirus and influenza from individuals who are symptomatic [9].

What remains unclear is if the use of face masks provides additional protection for healthcare personnel that are not in direct contact with patients that are symptomatic for the coronavirus. It has recently been demonstrated that the coronavirus sheds at high concentrations from the nasal cavity 2-3 days before the onset of symptoms and continues for at least one week after symptom onset [10,11]. Therefore, asymptomatic or presymptomatic individuals could be potential super spreaders of the stealth coronavirus as they are indistinguishable from healthy individuals who present to healthcare facilities [12,13].

Moreover, universal masking may protect healthcare personnel from acquiring the virus from other healthcare workers that are asymptomatic or mildly symptomatic and report to work [14]. Healthcare staff are always at risk of contacting the coronavirus and the incidence potentially increases with a colleague that harbors the stealth virus and becomes a unknowingly super spreader in the facility.

Although universal masking has the potential to mitigate disease transmission via airborne respiratory droplets and aerosols, the use of face mask greatest benefit may be in the reduction of healthcare personnel's level of fear and anxiety. Such psychological impact could increase the healthcare workers perceived safety and overall well-being during the pandemic.

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