

The role of media messaging in COVID-19 vaccine hesitancy amongst the student population: Friend or foe

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Whilst many other countries and cities are clamouring to secure the supply of COVID-19 vaccines to protect their population, the vaccination uptake rate remains low in Hong Kong despite the abundance of supply.¹ In mid June 2021, 5 months after the launch of the COVID-19 vaccine in Hong Kong, only 28.2% of the total population have been fully vaccinated with two doses.² Vaccination hesitancy is a major hurdle to achieving a sufficiently high vaccine coverage rate (c.70%) for population immunity to effectively suppress the COVID-19 pandemic.

Worldwide, young children have experienced lower rates of infection. Older children have a rate of infection similar to the population as a whole.³⁻⁵ Also, children have milder symptoms and are at lower risk of severe disease than adults. In the United States approximately a third of hospitalized children were admitted to the intensive care unit, while a European multinational study of hospitalized children found that about 8% of children admitted to a hospital needed intensive care.⁶⁻⁸ Approximately 0.7% of children in the European study died, but the actual mortality rate was lower since milder cases that did not seek medical help were excluded in the study.⁶⁻⁸ Locally, despite four waves of outbreaks and tremendous psychosocial disruptions, Hong Kong has been less hit than cities and nations elsewhere. Thus far, only some 1200 cases were reported and 200 people died, with the majority cases being imported. Children and persons younger than 18 years represented 10% of these cases.^{5,9} There have been no pediatric deaths and only two non-Chinese children had required brief pediatric intensive care. Most available data do not differentiate between children and students.

The Media plays an important role in delivering accurate and reliable public health information during vaccination campaigns. On the other hand, the "adverse events" reported in the news will need to be interpreted with caution. For example, recent reports includes a 22-year-old Hong Kong medical student who suffered stroke, cerebral haemorrhage and facial paralysis 4 days after receiving the second dose of Comirnaty vaccine; a young medical student who died of COVID-19 after the first dose of vaccination in India; a medical student in France who passed away days after receiving the

AstraZeneca vaccine.¹⁰⁻¹² In all of these cases, the causality between vaccination and the patient's condition is still under investigation and not established at the time of reporting. These media reports on death following vaccination in medical students can have the detrimental effect of aggravating the public's vaccination hesitancy.

Amidst these "mortality" reports, Hong Kong has extended its COVID-19 vaccination programme to children aged 12 and above for the first time, as the government pursues a broader campaign across the city to incentivise its 7.5 million residents to get vaccinated. Children of that age group will be eligible to receive the Fosun Pharma/BioNTech Comirnaty messenger RNA vaccine, although residents who wish to receive the Sinovac CoronaVac vaccine still have to be older than 18 of age.¹³

Wilson and Wiysonge found a significant relationship between organisation on social media and public doubts of vaccine safety, and a substantial relationship between foreign disinformation campaigns and declining vaccination coverage.¹⁴ Therefore, global widespread use of social media should be enhanced to disseminate scientifically sound information to a greater audience to counteract vaccine hesitancy. It is also important to promote and update institutional websites that have proven to be effective in reducing vaccine hesitancy.¹⁵ Vaccine-associated anaphylaxis is a concern.¹⁶ Allergist/immunologist plays a major role in the delivery of specialized therapy of COVID-19 and in educating the public with regard to the importance of COVID-19 vaccines.¹⁷

Physicians will need to arm themselves with the latest evidence to counsel anxious students and their parents if the vaccination program is to be successfully promoted. In the United States, more than 2% of the entire children population have been diagnosed with COVID-19, according to the latest data from the American Academy of Pediatrics.¹⁸ Adolescent and young adult students are generally spared from serious sequelae of COVID-19, and hence were previously considered as low priority for vaccination.⁴ However, mortality and severe morbidity with multisystem hyperinflammatory involvements have been widely reported in young persons and adults.^{19,20} At the same time, since children and young adults also play a key role in the spread of the

TABLE 1 Pros and Cons about vaccinating children and students to address²²⁻²⁴

Pros
Children and students are source of infections for family and school
Worldwide, school activities have been seriously disturbed during COVID-19 pandemic
Many psychosocial issues have been generated with home confinement of students due to class closure, with far reaching sequelae
Efficacious vaccine has been available for students and young adults down to 12 years of age, but only for one vaccine
Traveling restriction
No good treatment but efficacious vaccines for prevention
Cons
Very low mortality and morbidity risks with COVID-19 in children
Anxious parents and reluctant students for vaccination
Vaccine hesitancy due to fatality, neurologic and cardiovascular adverse effects associated with vaccination
Draw resources of vaccine delivery from high-risk group to the relatively low risk children

disease, there has been a gradual shift in strategy for governments to extend vaccination to these young persons to reduce morbidity as well as the rate of transmission in the population. Arrangement of vaccine delivery to children at school is an option. In fact, the Saskatchewan Health Authority has already begun administering COVID-19 vaccines in elementary and high schools across the province. This required a public health teams skilled and equipped to deliver immunizations within the school system.

The two vaccines available in Hong Kong (i.e., BioNtech Comirnaty and Sinovac CoronaVac) have both been given World Health Organization Emergency Use Listing.²¹ In mid September, the scientific committees under the Centre for Health Protection said adolescents will only need one dose of the German-made BioNTech vaccine which would help reduce the risks of myopericarditis following vaccination. However, youngsters travelling to places with high COVID-19 risks should still get two doses of vaccine to boost protection. Perhaps, youngsters and their parents should be allowed a choice whether to proceed with the second vaccination after they had been informed the possible risks.

In general, the perceived degree of infectiousness of the coronavirus has a considerable influence on vaccine intentions, and inconsistent risk messaging from public health experts and elected officials may have the effect of reducing vaccine uptake. The most important determinants of COVID-19 vaccine hesitancy seem to be distrust of the vaccine safety. Despite the recent publicity on COVID-19 vaccine associated deaths in the Media, we performed a PubMed® search and found no record of COVID-19 vaccine mortality in young persons and adults. However, only one vaccine so far has published the safety and efficacy profile for adolescents.²² This will imply that there is currently insufficient evidence for other vaccines to be recommended to

adolescent and young persons. The potential association between the death of the medical student and 4 days after receiving the second dose is extraordinarily unusual. An underlying causation for the death of the medical student should ideally be found to allay anxiety among the students. All healthcare professionals have a personal and ethical responsibility to play a proactive role in addressing the population's common misconception on COVID-19 vaccine and alleviate vaccination hesitancy. To conclude, undisputed facts that we should convey to the public are¹ the detrimental psychosocial effects of the pandemic on students and their families,² unconfirmed longterm efficacy and adverse effect profiles of the vaccines on students, and³ availability of only one vaccine to date with efficacy and limited side effect statistics among adolescents and students (Table 1).

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

All authors contributed to the following items (1) concept or design, (2) acquisition of data, (3) analysis or interpretation of data, (4) drafting of the manuscript, and (5) critical revision for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

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