

## Compliance with mask wearing in Victoria, after new ruling making mask wearing in public compulsory.

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### Abstract

**Introduction:** A manuscript by Jefferson and colleagues examined the effectiveness of eye protection, face masks and other measures [person distancing] on interrupting or reducing the spread of respiratory viruses. The conclusions recommended the use of masks combined with other measures. The Victorian government as a result of the increasing incidence of COVID-19, ruled that from Wednesday, July 22 at 11:59pm AEST, wearing a mask or face covering while in public is mandatory for Melbourne residents, with a \$200 penalty for people not complying.

**Methods:** Beginning July 23<sup>rd</sup>, for the next week, the author observed the number of people wearing masks as they entered a Woolworth's grocery store in Ashwood taking observations for approximately 15 mins/day. Children obviously <12 years were excluded as they are not required to wear a mask. If possible, the type of mask worn was also recorded as surgical non-woven fabric mask, respirator mask [P2, N95, P95], handmade fabric, fabric most likely purchased [mostly black], other [i.e., scarf, napkin or sock] or indeterminate. While care was taken to not double count persons, it is possible that some error occurred as people may enter the same store more than once.

**Results:** 497 / 500 people were wearing masks. 3 / 500 people observed were not wearing a mask. Two of those people were males most likely in the age group of 20-29 years of age. The other person it was difficult to estimate age, but they looked young teen, although maybe they were under 12 and just very tall. The types of masks worn included; surgical masks [69.6%], respirator [1.8%], handmade [8.8%], sock/ napkin /scarf [4.8%], other purchased mostly black fabric [12.8%] and unable to determine [2.2%].

**Conclusion:** Compliance with mask wearing was excellent [almost 100%] with surgical masks most commonly worn [just over two thirds].

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**Keywords:** masks, personal protective equipment, respiratory protective devices.

**Abbreviations:** Australian Eastern Standard Time (AEST), severe acute respiratory syndrome (SARS), World Health Organisation (WHO), personal protective equipment (PPE), Centres for Disease Control (CDC), acute respiratory infection [ARI].

## Introduction

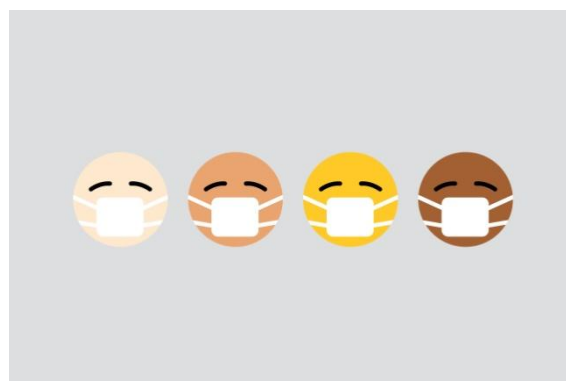
A manuscript by Jefferson and colleagues examined the effectiveness of eye protection, face masks and other measures [person distancing] on interrupting or reducing the spread of respiratory viruses [1]. This work was an update of a Cochrane review that included a meta-analysis of observational studies during the severe acute respiratory syndrome (SARS) outbreak of 2003. The current study results included 15 randomized trials investigating the effect of masks (14 trials) in healthcare workers and the general population and of quarantine (1 trial). The conclusions recommended the use of masks combined with other measures and these conclusions were based on observational evidence from the previous SARS epidemic included in the previous Cochrane review version.

The World Health Organization (WHO) 2020 report titled; Advice on the use of masks in the context of COVID-19 mentions that while globally many countries have recommended mask use for the general public, that the direct quality scientific evidence does not yet support widespread mask use for healthy people in the community setting [2].

However, they state that given the available studies evaluating pre- and asymptomatic transmission, and the observational evidence in several countries on general public mask use, in addition to considering individual's values and preferences and physical distancing difficulties that can occur in some settings, the WHO advise that to prevent COVID-19 transmission effectively in areas of community transmission, governments should support general public mask wearing in some places to control SARS-CoV-2 transmission.

Within Victoria, a news report on the 20<sup>th</sup> July states there are 147 people in hospital with COVID-19 and 31 in intensive care [3]. Therefore, as a result of the increasing incidence, the Victorian government ruled that from Wednesday, July 22 at 11:59pm AEST, wearing a mask or face covering while in public is mandatory for Melbourne residents, with a \$200 penalty for people not complying.

Picture 1. Picture depicting mask wearing by everyone [see acknowledgements].



### 1.1. Methods

Beginning July 23<sup>rd</sup>, for the next week, the author observed the number of people wearing masks as they entered a Woolworth's grocery store in Ashwood taking observations for approximately 15 mins each day. She did this from a distance, sitting in her car, in the car park. Children obviously <12 years were excluded as they are not required to wear a mask. If possible, the type of mask worn was also recorded as surgical non-woven fabric mask, respirator mask [P2, N95, P95], handmade fabric, fabric most likely purchased [mostly black], other [i.e. scarf, napkin or sock] or indeterminate. While care was taken to not double count persons, it is possible that some error occurred. There may also be some error with counts of type of masks, as from a distance at times it was difficult to determine.

### 1.2. Results

The majority of people observed were wearing masks, in that 497 / 500 people observed were doing so. Only 3 / 500 people observed were not wearing a mask. Two of those people were males most likely in the age group of 20-29 years of age. The other person it was difficult to estimate age, but they looked young teen, although maybe they were under 12 and just very tall. These results were presented at the Asia Pacific Academic Consortium for Public Health hybrid conference - Sri Lanka [4]. The title of the presentation being an oral presentation with recordings on an e-poster for this virtual event was; 'The COVID-19 [coronavirus] pandemic and compliance with mask wearing in Victoria [Australia].

Table 1 below shows of those people observed wearing masks, the percentage of mask type worn observed.

**Table 1. Type of Mask**

Mask type	Percentage of persons
Surgical	69.6%
Respirator	1.8%
Handmade	8.8%
Sock / napkin / scarf	4.8%
Purchased mostly black fabric	12.8%
Unable to determine	2.2%

**Pictures of mask types**

**Picture 1. Example of a surgical face mask [see acknowledgements]**



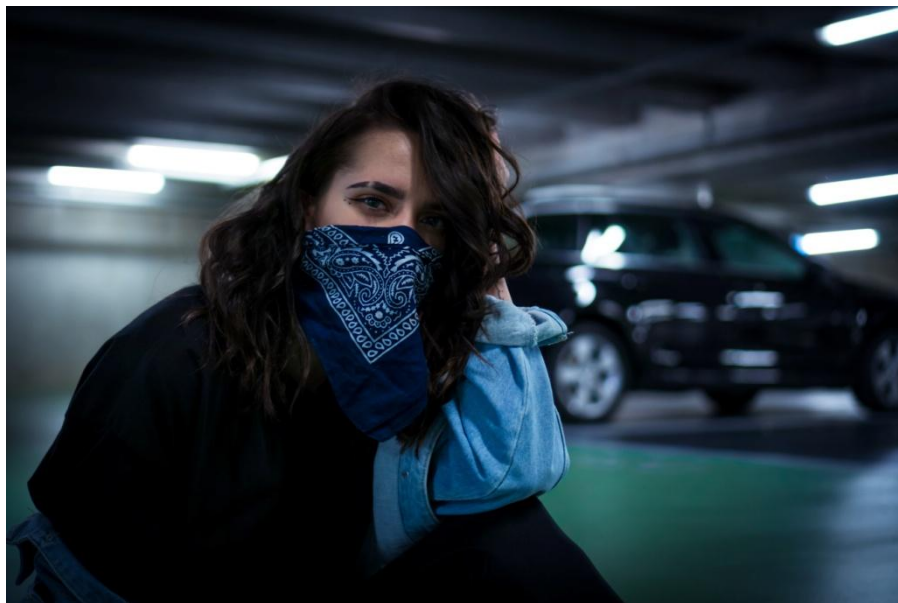
**Picture 2. Example of a respirator face mask [see acknowledgements]**



Picture 3. Example of handmade face masks [see acknowledgements]



Picture 4. Example of a scarf face mask [other make shift masks include sock, napkin, fabric] [see acknowledgements]



Picture 5. Example of a black purchased face mask [see acknowledgements]



### ***1.2.1. Face Shields***

No-one was wearing a face shield at the time of this observational study. A face shield is made from plastic or other transparent material and sits like a visor, covering the face from the forehead to below the chin area and wrapping around the sides of the face. However, after the observations were made that are detailed in this paper, the author noted that face shields were occasionally being worn, mostly by workers at shops, in pharmacies or medical clinics. The Victorian government announced on 27th September that Victorians must now wear fitted face masks instead of bandannas, scarves or plastic face shields as masks have been deemed more effective at stopping droplet spread [5].

Picture 6. Example of a face shield [see acknowledgements]



### **1.2.2. Possible error and double counting**

While care was taken to not double count persons, it is possible that some error occurred as at times it was difficult to identify people whom had entered whom were already counted, whom maybe entering a 2<sup>nd</sup> time, ensuring they were not counted again. There may also be some error with counts of type of masks, as from a distance at times it was difficult to determine.

### **1.3. Discussion**

There has been many publications and news reports discussing personal protective equipment (PPE) since the COVID pandemic commenced. As PPE supplies in some countries dwindled in health care settings, there became a need to suffice with alternatives such as cloth masks.

The Centers for Disease Control (CDC), the leading national public health institute in the United States, recently recommended the use of bandannas in the absence of appropriate respirators or face masks. They also mentioned that supplies in Australia are becoming depleted [6].

While this study was an observational study of the general public, various researchers previously has focused upon efficacy of masks in health care workers. One such study, reviewed the efficacy of cloth masks to medical masks in hospital healthcare workers with comparison at 14 secondary-level/tertiary-level hospitals in Hanoi, Vietnam [7]. This included 1607 hospital healthcare workers randomized to: medical masks, cloth masks or a control group (usual practice, which included mask wearing). The rates of all infection outcomes were highest in the cloth mask arm. The rate of influenza-like illness was statistically significantly higher in the cloth mask arm (relative risk (RR)=13.00, 95% CI 1.69 to 100.07) compared with the medical mask arm. Penetration of cloth masks by particles also differed and was 97% compared to the medical mask result of 44%. In conclusion the results caution against the use of cloth masks.

In addition, the Victorian State Government, Department of Health and Human Services website, has advised people since the commencement of the COVID-19 outbreak that there are a number of ways to prevent infection [8]. Not only does this include wearing masks, but ensuring safe physical distancing, and by practicing good hygiene. This includes not only disinfecting shared spaces [doorknobs and surfaces], but also requires soap and hand sanitizer to be available and they advise people to use these regularly. They state that people should wash their hands regularly for at least 20 seconds, using soap and water or use a hand sanitizer that contains at least 60 percent alcohol. Hoffmann and colleagues published a manuscript titled; Soap versus sanitizer for preventing the transmission of acute respiratory infections: a systematic review with meta-analysis and dose-response analysis [9]. Eighteen trials were included, six trials of sanitizer versus control found a significant reduction in acute respiratory infection [ARI] events (RR 0.80, 95%CI 0.71-0.89). Hand hygiene, with either soap or sanitizer, reduces the risk of ARI virus transmission, with evidence suggesting sanitizer might be more effective in practice.

The author in addition to observing mask use in the general public, also observed people and whether they used hand sanitiser or not. The general public was observed entering either a hospital reception area [n=27], a pharmacy [n=400] or a general grocery store/s [n=73], not the same group as she observed for masks, but other community members. Observations were made as to whether people used the hand sanitiser or not that was in the entrance to these

facilities. This was done over the course of a couple of weeks in August 2020, until the number of observations reached 500. 104 people [20.8%] were observed to use sanitiser. 396 people [79.2%] did not use sanitiser. In all cases the bottles or machine dispensing the sanitiser was in an obvious place, in the walkway as they entered the building, so it is very unlikely they didn't see it or know it was there. In the pharmacy and in the hospital entrance there were staff at the entrance either monitoring people as they entered, or taking temperatures, so given they didn't advise people to use the sanitiser it must have not been compulsory protocol, but an option for people if they wanted it. This abstract was also presented at the Asia Pacific Academic Consortium for Public Health hybrid conference, Sri Lanka [10]. The title of the presentation at this virtual conference was; Hand sanitiser usage by persons entering various facilities in a suburb of Victoria, Australia. This was an oral presentation with recorded presentation on an e-poster.

The main purpose of this manuscript which was to report on the observational study of mask use was purely designed in order to observe the general public's compliance following the government's decision to enforce mask use by issuing fines for those not complying. The rules of mask type have changed since this observational study, but it appears the public must have good understanding of the reasons and necessity to wear a mask in terms of how this prevents transmission, otherwise there would be many more people non-compliant if they thought it wasn't necessary. There have been protests in Victoria, but this is more members of the public whom are protesting about the lockdown rules.

## 1.4. Conclusions

In conclusion, compliance with mask wearing was excellent [almost 100%] with surgical masks most commonly worn [just over two thirds]. Regardless of the evidence and the literature is complex and difficult to wade through, but as an individual if you have to purchase a pack of surgical masks or make yourself a fashionable handmade mask that is re-washable, is not an exorbitant expense so at the end of the day it is not like you are purchasing for example a home nebulizer or portable oxygen concentrator where cost maybe a major consideration for households. While for people financially struggling costs of home respiratory equipment may in fact be cost prohibitive contrasting with this even for households not well off, given you can make or buy a handmade mask for <\$5, or you can buy consumable disposable products also relatively cheaply the effort for one person is not cumbersome, nor difficult, and probably for women equates to the saving of not wearing lipstick for those many months which is also necessary if you don't want to dirty the mask.

## 2. Acknowledgements

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### 4. Declaration of Competing Interest

The author declares that they have no known competing financial interests.

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