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USING THE INCENTIVE OF SPECIAL EVENTS TO IMPROVE RATES OF SITUATIONAL MASKING IN HEALTHY ADULTS

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ABSTRACT

Excess mortality has not stabilised back to baseline (zero) in the COVID-19 pandemic era, meaning that life expectancy is now lower in almost every country than it was in 2019. Despite this on going public health challenge, the rates of mitigation measures against respiratory illness (such as masking and booster vaccinations) continue to decline, when they should increase if we are to try to recover the lost years of life. This paper argues that most non-maskers are, in fact, COVID-fatigued rather than denialist and if presented with a compelling personal argument might be convinced to return to masking in high-risk situations. A 2024 exception to the trend towards fatigue was of elite athletes at the Tour de France and Paris Olympics choosing to mask around these events because they "could not afford to get sick" when competing in their important athletic competitions. Most people who have completely stopped masking could perhaps be persuaded to reconsider when they cannot afford to get sick, be it an expensive holiday, school exam or important business meeting. If they can be persuaded to mask in high-risk situations to prevent getting ill at an inopportune time, they could also be convinced that regularly exposing oneself to higher risk of respiratory illness is somewhat a matter of choice. This may increase rates of masking in high-risk situations such as on airplane flights, at healthcare facilities, on public transport and when another household member is sick. Encouraging situational incentives could help individuals shift back from a state of COVID-fatigue towards COVID-cautiousness. If enough healthy adults did so, mitigation measures could contribute towards reducing the burden of excess mortality.

KEYWORDS

COVID-cautiousness, Masking in healthy adults and Special events.

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INTRODUCTION

The COVID-19 pandemic is now in its sixth year, although the WHO has declared that the "emergency phase" of the pandemic has passed. Excess mortality in almost every country keeping detailed statistics remains stubbornly above baseline[1], resulting in a

global decline in life expectancy. Countries that implemented COVID-zero policies (e.g. New Zealand and Australia) were able to maintain "negative excess deaths" in 2020 and 2021[2]. However since 2022 even these countries have now experienced higher than expected mortality rates compared to pre-pandemic baselines.

"Hybrid immunity" has not eventuated as a resolution of the COVID-19 pandemic, and unless a sterilising vaccine emerges, continued excess deaths are likely to persist if hybrid immunity remains the primary defence against SARS-CoV-2. Aside from excess mortality, worrying associations with COVID-19 infections continue to emerge, including reduced cognitive function after infection[3,4].

Despite a lack of improvement in COVID-19 related data, the populations of most countries have lost interest in maintaining mitigation measures, such as mask wearing, booster vaccination and advocating for measures to improve air quality. There is substantial evidence demonstrating the effectiveness of mitigation measures[5-7]. In 2021, face masking was identified as the second most effective mitigation measure after compulsory isolation, although this analysis was conducted before widespread vaccination[8]. Recent reviews have confirmed that wearing of respirator masks is an effective measure in preventing transmission of not only COVID-19 but also other viruses that use an aerosol transmission route[9,10].

Recent polling of the U.S. population indicates a decrease in the number of 'COVID- cautious' individuals (those who maintain mitigation measures such as booster vaccinations and mask wearing)[11] while there has been an increase in those who could be categorised as 'COVID fatigued', 'COVID stoical' or even 'COVID denialist'.

A further hurdle for advocates of reinstating mitigation measures has been the propagation of binary thinking around COVID[12]. That is, that the two options for mitigation are strict measures akin to those of 2020-2021 - lockdowns, school closures, border closures and quarantine - or alternatively zero mitigation measures, creating a "false duality"[12]. This is despite the success of "nudge"[13] (non-absolute) public health success in other areas, such as sun-smart behaviour, reduction of sexually-transmitted diseases and alcohol harm-reduction.

We have a current world environment that warrants additional measures to combat high rates of ongoing COVID-19, yet rates of these measures, particularly masking, continue to drop, representing a challenge for public health.

Does situational masking help?

We all share the air much more than we realise. A pre-pandemic book entitled "Caeser's Last Breath" postulates that almost every living human has shared one air molecule with Julius Caeser simply on the huge amounts of molecules that we all breathe in and out over a lifetime and their eventual diffusion around the world[14]. We all almost certainly breath in doses of SARS-COV-2 and other respiratory viruses much more often than we realise and fortunately most of the time we do, we don't end up getting "infected".

When exposed to higher doses of virus a new infection can occur[15]. Hence intermittent masking is actually valuable as it will reduce the amount of virus that the wearer will inhale. People who intermittently mask (in crowded venues for example) are tending to breathe in fewer virus molecules than people who attend the same venues but never mask, and they'll end up getting sick less often.

What are the highest risk situations?

The highest risk situations for contracting COVID-19 or other airborne respiratory diseases are well known (Figure No.1). Because of the reduced numbers of COVID-cautious individuals (Figure No.1), fewer people are masking in high-risk situations (hence moving in the direction of the small arrow in Figure 1). A possible exception, region wise, is East Asia where culturally masking in public appears to be more acceptable (Figure No.2). Crowded venues with poorly-circulating indoor air generally represent the highest risk. CO_2 monitors can act as an excellent measure of whether a venue is likely to be high or low risk, with values greater than 1000ppm indicating poor circulation of the air and high risk status of the venue (especially if exposure is prolonged) (Figure No.3). There is further risk associated with environments where COVID-positive individuals are known or more likely, such

as healthcare facilities and pharmacies. This includes households where it is known that one member is either COVID-positive or has respiratory symptoms.

Are there any signs of a masking reversal?

In the summer of 2024 in Europe, two sporting events seemed to buck the trend away from reduced masking[16] and the analysis of these occasions can provide green shoots for those who understand that public perception around masking needs to change.

In the Tour De France (the annual peak of the professional cycling calendar) there was a move back towards masking, even at press conferences in 2024[17]. This was because of a known COVID-19 outbreak with cyclists observing that teammates and competitors who contracted COVID-19 had to drop out of the race. Returning to self-imposed masking made sense in terms of trying to avoid the most likely incident that would have ended their competition in their most important event of the year.

At the Paris Olympics, some teams such as Australia started masking throughout the Olympic Village to avoid catching COVID prior to competition[18]. Although there was some derision around this news, even COVID-fatigued people would generally agree that it makes perfect sense: if you only get to compete in the Olympics once every four years, it is worth the (small) cost to mask and try not to get sick, as being sick on the day of your event can ruin four years of preparation. There is now even some evidence which suggests that countries who had been more "COVID cautious" during the pandemic also achieved more Gold medals at the Paris Olympics[16], perhaps because of greater national willingness to enact preventive measures.

Ask people: what events are your personal Olympics?

If the Olympic analogy works for people and is able to engage them, it doesn't take long for most healthy adults to agree that there are certain occasions when they also "can't afford to get sick". (Table No.1).

It is easy for most people to identify with one or more of the occasions in Table No.1 and perhaps agree that in the lead-up to this next major occasion in their life they could and should adopt a "COVID-cautious" approach to insure against becoming sick when coinciding with this major event (Large Arrow move in Figure No.1).

The two greatest overlaps between both a high-risk situation and a time when people "can't afford to contract COVID" are during airplane travel and at healthcare facilities. Airplane travel (despite the use of HEPA filters) is high-risk because of the crowding, recirculated air and generally long duration of exposure. Cancelling flights because of illness is highly inconvenient because there is usually an important reason for flying (business, holiday or returning home). For this very reason, people who are ill tend to fly on regardless, making flying a situation where exposure to respiratory illness is both very high and at a time when illness would be highly inconvenient.

Healthcare facilities are high risk because of the higher-than-usual proportion of those attending who might be ill at the time. Those who visit healthcare facilities may be there with a different vulnerability but also cannot afford to add a viral infection on top of anything pre-existing.

A further important but forgotten situation is within-household transmission when one household member has respiratory symptoms (or is COVID-, Influenza- or other virus positive). Respiratory viruses are no more or less benign if picked up from a housemate or family member than from a stranger and within-household masking makes sense when someone is sick.

These situations (airplane travel, healthcare facilities and households with an ill member) are probably the best opportunities to target for return to masking. However a better approach to encourage this might be an appeal to individual benefit (selfishness) as a nudge[13], rather than an appeal to contribute to public health.

Table No.1: Important life situations when people "can't afford to get sick"

S.No	Group	Occasions when it makes sense to generally mask prior as "you can't afford to be sick"
1	Athletes	Finals/playoff matches; major competitions
2	Students	End-of-year examinations
3	Families	Annual holidays; family re-unions; Christmas parties
4	Researchers	Attendance at a conference
5	Friends of young couples	Weddings, engagements, birthday celebrations
6	Business people	Meetings to "close a major deal"
7	Workers	When sick leave entitlements are close to being exhausted

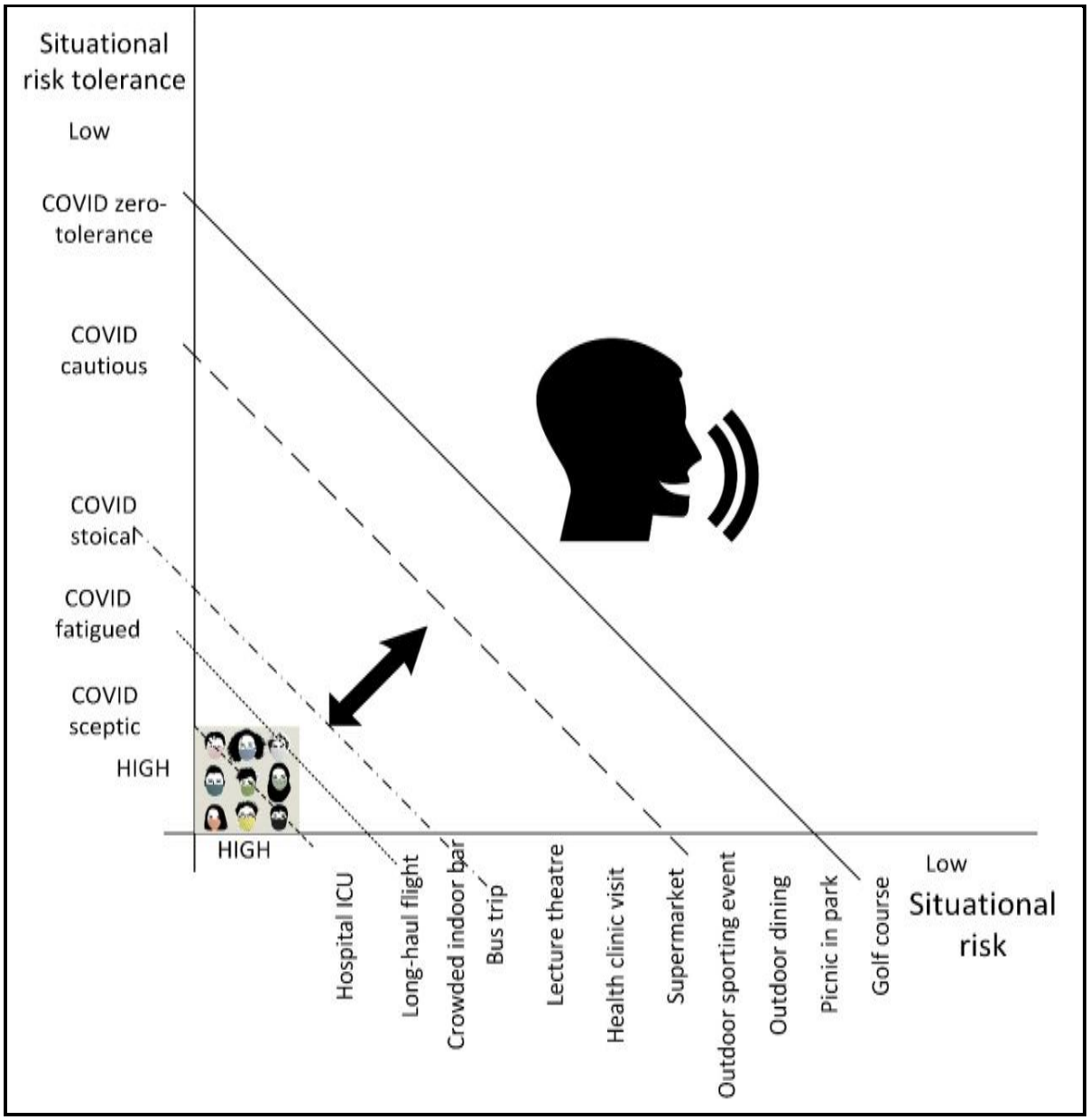

Figure No.1: Interaction between personal/situational risk tolerance and situational risk in the decision on whether to mask or not

Figure No.2: East Asia possibly remains the only area of the world where a significant percentage of the population still masks in crowded venues (example photo from Singapore in 2024)

Figure No.3: A crowded bus with the air on recirculation can be a surprisingly high risk exposure (with high levels of CO_2)

CONCLUSION

Most of the healthy adult population is disengaged with masking for the purposes of contributing to public health, which is hindsight understandable given the harsh measures that were enacted in 2020 and 2021. We propose it might be possible to encourage a reversal of the trend away from COVID-cautiousness by appealing to a more selfish motivation: the realisation that illness is somewhat preventable and there are times when it makes sense for individuals to take strong measures to avoid sickness.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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