

Side-effects of public health policies against Covid-19: the story of an over-reaction

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Abstract: This paper reports the Governments' responses around the world to COVID-19 pandemic breakthrough. This is significant because side effects of those policies have been undermined in the public debate. This review of the current literature about side effects directly or indirectly is linked to the government's response to COVID-19 breakthrough. The article wants to deliver a global vision of what damage preventing COVID-19 could induce. The article goal is to alert about new global health concerns occurring after measures (global lockdown and generalized mask usage) and to bring solutions to this.

Keywords: COVID-19; lockdown; curfew; mask; social distancing; side-effects; health policy; public health; non pharmaceutical interventions

I/ INTRODUCTION

The world has been facing a coronavirus disease (COVID-19) pandemic since November 2019. After a short period marked by pandemic underestimation risk, the Western world reacted. The overall benefits of the chosen policies were not sufficiently questioned, which resulted in many side effects on global health .

The medical motto “*primum non nocere*” («*first, do not harm*»), a moral principle everyone should at least consider following, was evidently not taken into account.

Pros of those measures have been very often showed but rarely the cons. This opinion article highlighted facts against this simplistic, one-dimensional view.

II/ LOCKDOWNS

a) Epidemiological effects

In the Middle Ages, before the discovery of pathogen vectors, patients were seen as presenting a health and social risk. The epidemics management did not change for centuries; “detect, isolate, treat” has almost always been, and still is, the *credo*. Until

last century, isolation used to be *selective*: there were lazarettos, that were used to keep ship passengers or patients in quarantine [1]. In 17th Century London, only infected families were “shut-up” in their homes, their doors being marked with red crosses [2] in order to prevent other people from paying them visits. Regarding history, a general lockdown (also concerning healthy or asymptomatic people) is very uncommon and without historical precedent nor scientific basis.

Stay-at-home mandates' impact on mortality is subject to debate, for many studies report its epidemiological impact [3] but others evoke its complete uselessness. Though many studies suggest an absence of COVID-19 – or other disease – mortality reduction due to the lockdown [4, 5], it still seems to be the first option of our governments, as it is the case in France. Moreover, the comparison of pre- and post-lockdown observations reveals a counter-intuitive slowdown in the decay of the epidemic *after* lockdown [6]. In a nutshell, all these studies suggest a global uselessness of lockdowns when it comes to COVID-19 mortality, and even sometimes SARS-CoV-2 mere transmission [7, 8]. A Stanford epidemiological study [9] didn't find significant benefits on case growth of more restrictive Non Pharmaceutical Interventions (NPIs). According to a Centers for Disease Control and prevention (CDC) report [10] concerning excess deaths in the US between January 26th 2020 and October 3rd 2020, 1/3 of them (or 100,000) were not COVID-19-related [11].

According to a study conducted by the National Bureau of Economic Research [12], for the overall US population, the proportion of COVID-19 related

unemployment is today between two and five times larger than the typical unemployment shock, resulting in a 3.0% increase in mortality rate and a 0.5% drop in life expectancy over the next 15 years. Deaths from drug and alcohol misuse also significantly increased during the lockdown period in comparison to the same period in 2018 [13]. The destruction of the economy by lockdowns will cost many years of life – and poverty is a silent killer [14]. Lockdowns are far from being a magic spell that can save the world from a pandemic, and might not even narrowly work to lower mortality and even a higher non-COVID-19 mortality [15].

b) Psychological side-effects

During this COVID-19 period, the economic vulnerability was associated with a strong risk of stress and worsening mental health [16]. Second, according to Sonia Mukhtar, lockdowns, whose consequences are self-isolation quarantine and social distancing constituted collective traumatic events that seriously threaten people, and have already resulted in a considerable loss of lives and in an impoverishment of global hygiene [17]. Indeed, as Mingke Song assessed for China, COVID-19 and lockdown policies not only brought upon a life crisis, but also incurred psychological stress: tension, anxiety, fear and despair among affected populations [18]. A review also found that some factors increasing women's vulnerabilities to violence have been exacerbated during the lockdown period [19].

The psychological effects of isolation in non-epidemic situations have already been studied in specific cases, such as that of imprisonment [20, 21]. Not everyone is able

to be as positive and creative as Xavier de Maistre was when he wrote his impressive *Voyage autour de ma chambre* during his imprisonment in Turin, in 1794.

Previous epidemics and the specific lockdowns they caused also had psychological effects, were described by specialists [22, 23]. The risk of PTSD (post-traumatic stress disorder) symptoms is at its highest, even after a while, and even after home quarantine .

That lockdowns led to most medical care being done via cyber-visits, which greatly reduces the physician's ability to perceive health signs. Doctors are often not even consciously aware of their fine-tuned perceptual abilities. For example, our variety of color vision evolved so as to sense oxygenation modulations under the skin (for recognition of emotion, health and state) [24], and it has been recognized since the Greeks that the acute pallor of the skin is helpful for diagnosis [25]. These blood-mediated health signals are only visible in person, not through cameras.

c) Physiological effects

Lockdowns also increase the time where people are sedentary, which has a variety of harmful side effects including: altered energy expenditure, adipogenic signalling, immunomodulation, autonomic stability and hormonal dysregulation perpetuating underlying chronic diseases such as obesity, cardiovascular disease, cancer and mental health disorders, which are grave physiological effects. [26]. In addition, Digital Eye Syndrome (user's visual system regulation difficulty mainly caused by an

overuse of digital devices) may have been exacerbated precisely because of lockdown [27].

III/ MASKS

a) Effectiveness

The debate regarding the effectiveness of masks is still ongoing. Indeed, some think that they are useless concerning this coronavirus virus (and influenza ones) [28-30], others defend the simple surgical mask efficiency (most common scientific opinion) and others are calling for more effective masks [31].

Face masks provide some measure of protection, there are side effects that could undermine any efficacy they may have. First, wearing a mask may give a false sense of security and make people less compliant with social distancing, ventilation and other important infection control schemes [32, 33]. Second, people have to avoid touching their masks and adopt other management measures, otherwise masks are counterproductive [34].

While face masks can stop larger droplets, such droplets tend to fall to the ground due to their weight [35-37], and are not the route for viral transmission. Viruses spread via smoke-like aerosols [38] via breath or flatulence, which go through and jet out the sides of surgical masks, and infect mainly by inhalation deep into the lungs. Despite the risk of inhaling/exhaling infected virions via leaks of particles, this was never evaluated in applied norms for surgical masks, and only for Personal Protective

Equipment (PPE) under norms Filtering Facepiece Particles (FFP) in Europe, N (e.g. N95) in the USA. Moreover, the European norm for surgical masks (EN14683), as well as the US one (ASTM), only applies to Bacterial Filtration Efficiency (BFE), and the size of the bacteria used for testing (3 microns) is much larger than the SARS-CoV-2 (maximum size of 140 nm [39]). Virus filtration efficiency (CFE) was never tested in Chinese and European norms.

b) Psychomotor effects

The global application of mask-wearing could indeed affect infants' and children's psychomotor development; in fact, our brain taking into account masks for facial recognition may alter different aspects of our face recognition system [40]. In other words, the still-face effect [41], showing our need for connection from very early in life, takes all of its importance.

Moreover, one could speculate that because brain areas in the left fusiform cortex were recycled for reading expertise [42], while face recognition expertise is more lateralized in the homolateral fusiform cortex [43]. Some upcoming dyslexic syndromes could be expected from a lack of face visual recognition skills' development due to a bilateral ventral stream impairment, consecutive to chronic face mask use in childhood.

Masks also block the vision of one's lower far peripheral visual field, which is crucial for visuomotor feedback when engaged in walking [44, 45, 46, 47]. And the fact that one is visually handicapped when wearing a face mask is almost never

consciously realized [48], when it is a major public health problem since falls are the second leading cause of accidental or unintentional injury deaths worldwide, and that each year, approx. 646,000 individuals (worldwide) die from falls [49].

c) Psychological effects

When it comes to masks' psychological effects, on top of the artificial relation to others it creates, we may say that the mutilation our ways of communicating [50,51] and perceiving things also do have consequences in health diagnoses [52, 53]: for instance, a randomized clinical trial has shown that health care professionals wearing masks have a significant and negative impact on the patient's perceived empathy and diminish positive effects of relational continuity [54].

A recent study also showed that each type of mask caused a low-pass filter effect, attenuating higher frequencies (2000-7000 Hz) in the speaker's voice by 3 to 4 dB (medical mask) and nearly 12 dB for the N95 mask (respirator/FFP) [55]. In addition to this, masks significantly prevent binding mechanisms through which de-synchronized auditory and motor signals from language are usually fused into conscious workspace – a phenomenon known as the McGurk effect [56].

A review notably supports the idea that panic-prone individuals may be at higher risk of respiratory discomfort when wearing RPDs, thereby reducing their tolerance for these devices [57].

d) Dermatological effects

Many studies have described the dermatological impact of prolonged mask wearing. In handling COVID-19 outbreak, mask wearing induced itches [58] and contact dermatitis [59]. In terms of frequency, the most common adverse skin reactions among healthcare workers wearing N95 masks have been nasal bridge scarring (68.9%) and facial itching (27.9%) [60], nasal bridge, cheeks and chin (35.5%) [61]. N95 respirators are associated with more skin reactions than medical masks [62], and skin tears and open wounds such as these are a potential source of infection [63]. Last but not least, the current form of fluid resistant surgical masks (FRSM) used in day-to-day practice has elastic ties that go behind the ears, and an extended use of these masks causes discomfort and irritation behind them, especially if they are used for prolonged procedures [64].

e) Physiological effects

This first randomized cross-over study concerning the effects of surgical masks and FFP2/N95 masks on cardiopulmonary exercise capacity yields clear results: both varieties of mask have a marked negative impact on exercise parameters [65]. Furthermore, a German MD thesis [66] showed that the usage of a face mask leads to: increased rebreathing of expelled carbon dioxide; significant increased respiratory rate and hyperventilation; increased heart rate; increase in Co₂ in the blood; hypoxemia, which is an abnormal decrease in the partial pressure of oxygen in the arterial blood; hypercapnia, which is an increase in the pressure of Co₂ in the blood.

To sum up things, as WHO claimed in August 2020: “People should not wear masks when exercising, as masks may reduce the ability to breathe comfortably” [67].

A final consequence of universal mask wearing worth mentioning is one at the societal level: once an unmasked face becomes verboten in most public circumstances, it can end up psychologically treated as a “private part” that must be covered, like all our private parts.

IV/ CONCLUSIONS

Our opinion article highlighted many side effects of the health policies that have been adopted by our governments since the COVID-19 crisis beginning. Even in a terrible epidemic, decisions cannot be taken without an exhaustive risk-benefit analysis. We also want to point out for alternatives of the lockdown policies and general mask wearing: mass vaccinations, search of early efficient treatments. Prevention is certainly essential, but it must minimize the undesirable effects of its application as much as possible. Our article does not aim to only criticize but just to operate a role of constructive negator in order to bring out more lasting and profitable solutions for humanity such as "test, trace, isolate" (on a specific scale and not a globalized one) as it was applied in Asian countries.

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