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COVID-19 Mask Mandates for School Children - Following the Science or Impolitic?

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Abstract:

Governments across the world have implemented a wide range of nonpharmaceutical interventions (NPIs) to mitigate the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19. Many countries introduced the mandatory requirement for school children to wear masks. The government hypotheses that

I. School children are at risk of becoming sick or dying from COVID-19,
II. School children are responsible for the substantial viral transmission of SARS-CoV-2,
III. Masks are inefficient at preventing both contagion and transmission, and
IV. Masks have significant adverse health effects for wearers,

are analyzed and assessed with reference to various peer-reviewed studies, randomized controlled clinical trials, and meta-analysis. Mask mandates violate bioethical norms and infringe on a child's fundamental human rights to be free from cruel, inhumane and degrading treatment and not to be subjected to medical or scientific experimentation without free consent. Restrictive measures impacting children's fundamental human rights should be the least intrusive to achieve the stated public health goals and include precautions such as transparent, robust scientific debate and review of actual efficacy. From the biomedical science and data, it is evident that children are not at risk from COVID-19 nor responsible for spreading the SARS-CoV-2 virus in any meaningful way. Masks are inefficient at preventing both contagion and transmission, and masks have significant adverse health effects for wearers. Instead of relegating robust scientific debate, bioethical norms, and human rights, governments should respect their international human rights obligations and adhere to international bioethical normative standards.

Key Words: COVID-19; infectious disease; mask mandates; bioethical norms; international human rights law; fundamental human rights; child rights convention; children's right to education

1. Introduction

Governments worldwide have implemented many nonpharmaceutical interventions (NPIs) to mitigate the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus causing COVID-19. Many countries introduced the mandatory requirement for schoolchildren to wear masks to contain SARS-CoV-2 [1].

Some argue that mask mandates violate an array of children's fundamental human rights, are especially cruel, inhumane and degrading to young children and that a year and a half of mask-wearing scarred them psychologically and physically, with children suffering from hypoxia and Mask-Induced Exhaustion Syndrome (MIES) while the prolonged pressure from the elastic mask straps left other young children with permanently protruding ears [2,23]. By concealing teachers' lips and dampening their speech, mask-wearing makes it harder for young children to develop crucial linguistic skills and prevents special needs children with hearing impairments from lip-reading [2,3,23]. Unable to see important facial expressions, children and teachers misread and misunderstand one other, a particularly dire problem for children with special needs. Children cannot develop social skills when they can't see one another's faces and facial expressions while interacting [3].

In March 2020, U.S. Surgeon General Jerome Adams recommended the general public not to wear face masks, stating they were "not effective" in stopping citizens from contracting SARS-CoV-2. The position of the US public health officials (who constantly profess they are merely following the science and the data) changed over time; now, the official line is that masks must be mandatory for the unvaccinated, given that the SARS-CoV-2 infection is transmitted predominately by inhaling respiratory droplets generated when people cough, sneeze, sing, talk, or breathe [4–6]. Masks are mainly intended to decrease the emission of virus-laden droplets (source control), which is particularly significant for asymptomatic or pre-symptomatic infected wearers, such as children, who feel well and may be unaware of their infectiousness [4–6]. The contention is that masks also help reduce inhalation of these droplets by the wearer ("filtration for wearer protection") [4–6]. Therefore, the grounds for enforcing mask mandates for school children as part of a comprehensive prevention strategy are as follows:

I. To protect all children from contracting the SARS-CoV-2 virus and becoming extremely sick or dying of COVID-19 [5] and
II. To stop the viral transmission and amplification of SARS-CoV-2 by children at school and in other public venues [6].

For mask mandates to be astute and sensible public-health policies, the hypotheses are as follows:

I. School children are at risk of becoming extremely sick or dying from COVID-19 and, therefore, need to be protected through mask mandates for children [4–6].
II. School children are responsible for substantial viral transmission and amplification of SARS-CoV-2 at school and other public venues, and therefore, children, teachers, and staff in the school community need to be protected through mask mandates for children [4–7].
III. Masks are efficient at preventing both contraction and transmission [4–6].
IV. Mask wearing has no significant adverse health effects for children [4–6].

Consequently, it is important to investigate whether the above hypotheses and principal points of departure are correct and supported by actual science and data. If these hypotheses are incorrect, it follows that mask mandates would be impolitic.

2. Following the Biomedical Science and Data

Across the globe, government officials, mainstream media, and big tech have convinced people that masks effectively prevent the spread of the SARS-CoV-2 influenza virus. But is the "science" regarding mask effectiveness settled as decisively as we have been directed to believe?

2.1. Hypothesis I: School children are at risk of becoming extremely sick or dying from COVID-19.

Numerous case studies have described the clinical characteristics of COVID-19 in children; all show a significantly milder illness severity in children than in adults [8,18]. Compared to adults, children and adolescents with COVID-19 are more commonly asymptomatic or have very mild symptoms [9,10,18].

COVID-19's Case Fatality and Crude Mortality Rate for children and adolescents range between 0.003% and 0.0003%, respectively [11,12]. A total of 99.997% of all children and adolescents who contract COVID-19 will have mild to no symptoms and live [11,12,13].

The hypothesis that many children are at risk of being sick or dying from COVID-19 has been proven incorrect by numerous biomedical studies. After more than 18 months of data, biomedical science has indisputably settled that children are not at risk of serious illness or death from COVID-19 [8–13].

2.2. Hypothesis II: Schoolchildren are responsible for substantial viral transmission and amplification of SARS-CoV-2 at school and other public venues.

Evidence from several biomedical studies shows that children and adolescents are less commonly infected with SARS-CoV-2 than adults and that children do not easily spread the SARS-CoV-2 virus to other children or adults [14–21].

Numerous peer reviewed research has shown that transmission within the school environment is lower than or similar to levels of community spread and that in-person learning in schools has not been associated with substantial community transmission [14–21]. In a study done in the federal state of Baden-Württemberg in South-West Germany, which has a population of 10.8 million, researchers assessed the viral transmission role of SARS-CoV-2-infected children who attended schools and childcare facilities after reopening. The researchers concluded that child-to-child transmission in schools and childcare facilities is uncommon and not the primary cause of SARS-CoV-2 infection in children [18]. An Irish study also concurs with the results and found no evidence of secondary transmission of COVID-19 from children attending school in Ireland during 2020 [19]. In the French Alps, researchers investigating the spread of the SARS-COV-2 virus around school settings reported zero instances of secondary spread [20]. In another school study from Australia, no data of children infecting schoolteachers were uncovered, while in the Netherlands, statistics from primary care and household investigations suggest SARS-CoV-2 is primarily spread between adults and from adult household members to children [14,21].

Furthermore, it is well-documented that symptomless COVID-19 cases are not responsible for community spread [20]. To ascertain the status of the COVID-19 epidemic, the city government of Wuhan carried out a comprehensive citywide nucleic acid screening of SARS-CoV-2 infection from May 14, 2020, to June 1, 2020. The citywide nucleic acid screening of SARS-CoV-2 infection in Wuhan tested a total of 9,899,828 persons from the 10,652,513 eligible people (participation rate, 92.9%) and found no newly confirmed cases with COVID-19; there was also no evidence that the identified asymptomatic positive cases were infectious [22].

The US Centers for Disease Control (CDC) claim that "*significant secondary transmission of SARS-CoV-2 infection can and does occur in school settings when prevention strategies are not implemented or are not followed*" [4–6]. The prevention strategies referred to are mask-wearing, handwashing, and physical

distancing, but this argument is incorrect and untrue. Sweden kept its lower-secondary schools open and did not mandate children to wear masks or social distance, yet the infection rates among Swedish school children were similar to schools in the US with "comprehensive prevention strategies" [23]. The simple biomedical and biological fact is that children have a different immune response to SARS-CoV-2. Although biological mechanisms underlying children's decreased susceptibility to COVID-19 are unclear, there is ample evidence that children are not to blame for spreading SARS-CoV-2. Mask-wearing, social distancing, and handwashing play no role in augmenting this biological fact [8-13, 18].

Finding: The hypothesis is that school children are responsible for substantial community spread of SARS-CoV-2 at school and other public venues is incorrect. The biomedical scientific data indicates that children are not responsible for the meaningful viral transmission of SARS-CoV-2.

2.3 Hypothesis III: Masks are efficient at preventing both contagion and transmission.

Clinical trials have consistently found that masks do not protect people from respiratory viruses. In a 2012 systematic review of the scientific evidence by the United Kingdom Department of Health into whether the use of masks prevents transmission of influenza, the researchers concluded that [24]:

Six of eight randomized controlled trials found no significant differences between control and intervention groups (masks with or without hand hygiene; N95/P2 respirators).
None of the studies we reviewed established a conclusive relationship between mask/respirator use and protection against influenza infection.

A randomized controlled clinical trial (RCT) relating to the efficacy of cloth masks published in 2015 that investigated cloth and surgical masks used by healthcare workers in Vietnam was the first randomized trial to examine the use of cloth masks. The researchers found healthcare workers who wore cloth masks were more likely to develop infections than those who wore surgical masks, as well as a third control group who were not required to wear masks at all. They found that cloth masks stopped only 3 percent of particles while medical masks stopped just over half, and the N95 masks stopped 99.9 to 99.99 percent of particles. The researchers concluded that healthcare workers should not use cloth masks as protection against respiratory infection since the physical properties of a cloth mask, reuse, frequency and effectiveness of cleaning, and increased moisture retention may increase the infection risk [25].

In February 2021, Hong Kong–based researchers reviewed 10 experimental trials between 1946 and 2020 that investigated whether masks outside hospital settings protected their wearers against the flu. The researchers combined the results of the 10 trials into a single meta-analysis and concluded that they did not find any evidence that surgical-type face masks are effective in reducing laboratory-confirmed influenza transmission, either when worn by infected persons or by persons in the general community to reduce their susceptibility [26].

In November 2020, a group of Danish researchers (widely quoted out of context by those supporting mask mandates as proof of the efficacy of masks) published an investigator-initiated, unblinded, randomized controlled trial that covered almost 6,000 people in Denmark. A total of 3,030 participants were randomly assigned to the recommendation to wear high-quality surgical face masks, and 2,994 were assigned not to wear face masks; 4,862 participants (80.7%) completed the study. Trial participants were followed for a month to see if they had been infected with SARS-CoV-2. Based on the lowest observance registered in the mask group during follow-up, 46% of research participants wore the mask as recommended, 47% mostly as recommended, and 7% not as recommended. The primary result occurred in 42 participants (1.8%) in the mask group and 53 (2.1%) in the control group. In an intention-to-treat analysis, the between-group difference was −0.3 percentage point (CI, −1.2 to 0.4 percentage point; P = 0.38) (odds ratio [OR], 0.82 [CI, 0.54 to 1.23]; P = 0.33) in favor of the mask group. Two-sided P values less than 0.05 were deemed statistically significant. Evaluations were done using R, version 3.6.1 (R Foundation) [27]. In analyzing the data, the researchers clearly make the following point:

"... a recommendation to wear a surgical mask when outside the home among others did not reduce, at conventional levels of statistical significance, incident SARS-CoV-2 infection compared with no mask recommendation" [27].

It is further noteworthy that the participants in this randomized controlled trial were given high-quality surgical facemasks to wear and not the cloth masks used by most of the general population.

Finding: The hypothesis that masks are efficient at preventing both contagion and transmission of influence-type viruses is not supported by the scientific data.

2.4 Hypothesis IV: Mask wearing has no significant adverse health effects for child wearers.

A recent comprehensive study by a group of German researchers published in the International Journal of Environmental Research and Public Health, reveals that there are clear, biomedical scientifically demonstrable adverse effects for mask wearers, both on psychological, social, and physical levels [29].

The comprehensive meta-analysis on the scientifically proven related side effects of wearing masks that referenced 44 mostly experimental studies for quantitative evaluation and 65 publications for substantive evaluation revealed significant adverse effects of masks in numerous disciplines. In the paper, researchers refer to the psychological and physical deterioration, as well as multiple symptoms described because of their consistent, recurrent, uniform presentation from different disciplines as Mask-Induced Exhaustion Syndrome (MIES) [29]. The researchers' objectified evaluation evidenced changes in respiratory physiology of mask wearers with significant correlation of O2 drop and fatigue ($p < 0.05$), as well as clustered co-occurrences of respiratory impairment and O2 drop (67%), N95 mask usage and CO2 rise (82%), N95 mask and O2 drop (72%), N95 mask and headache (60%), respiratory impairment and temperature rise (88%), but also temperature rise and moisture (100%) under the masks [29]. The academic researchers *inter alia* found that extended mask-wearing by the general

population could lead to adverse consequences in numerous medical fields. The described mask-related changes in respiratory physiology can adversely affect the wearer's blood gases sub-clinically and in some cases also clinically manifest, producing a negative effect internal and external respiration, aerobic life with a negative influence on a wide variety of organ systems and metabolic processes with psychological, physical and social outcomes for the individual. With the advent of the so-called SARS-CoV-2 pandemic, we have seen many medical practices that have little or no scientific support purported to reduce the spread of the SARS-CoV-2 virus. One of these measures is the mandatory wearing of face masks, either a surgical-type mask, bandana, or N95 respirator mask. Various peer reviewed studies have in fact found significant complications with wearing face masks. These complications vary from headaches to hypoxia, carbon dioxide accumulation and increased airway resistance that can lead to serious life-threatening conditions. [29].

In a further study of the effect of surgical masks, researchers found that the masks reduced the blood's oxygen levels significantly. The lengthier the time spent wearing the mask, the greater the fall in blood oxygen levels [30]. The significance of these findings is that a drop in oxygen levels (hypoxia) is associated with immunity impairment [31,32,33].

Studies have demonstrated that hypoxia can constrain the main type of immune cell used to fight viral infections, called the CD4+ T-lymphocyte [31,32,33]. This occurs as the hypoxia increases the level of a compound called the hypoxia inducible factor-1 (HIF-1), which inhibits T-lymphocytes and stimulates immune inhibitor cells (Tregs). This increases the risk of infections for mask wearers [31,32,33].

A recently published study by a group of Italian professors further points to face masks causing prominent ear deformities in young children [28]. Small children mostly wear masks with elastic ear loops or strips of fabric with lateral slits (side cuts at the ears) [28]. The researchers found that these masks cause constant compression on the ear skin and, consequently, on the auricle's cartilage, leading to erythematous and painful lesions of the retro-auricular skin when the masks are worn for many hours [28]. Pre-teen-age children have undeveloped ear cartilage with less resistance to deformation; prolonged pressure from the elastic loops of the mask at the hollow or, worse, at the anthelix level can influence the outer ear's growth and angulation [28]. This prolonged pressure can increase the outer auricle's cephalon-auricular angle [28]. The researchers further found that the "single band" masks that wrap around the neck slide downwards and do not keep the nose covered; furthermore, if these masks are used in summer, they tend to produce a humid microenvironment favoring the development of dermatitis and eczema [28].

Finding: Evident from the above studies, the hypothesis being advocated that mask wearing has no significant adverse health effects for children is incorrect.

3. Biomedical Ethical Considerations

The WHO's 2017 report entitled "Advancing the Right to Health: The Vital Role of Law" determines that International Health Regulations require countries to exercise their health powers in a transparent and non-discriminatory manner, with full respect for the dignity, human rights, and fundamental freedoms of persons [34].

On June 5, 2020, the WHO released a statement entitled "Advice on the use of masks in the context of SARS-CoV-2" inter alia stating that: "*At the present time, the widespread use of masks by healthy people in the community setting is not yet supported by high quality or direct scientific evidence, and there are potential benefits and harms to consider* [35]." According to the US CDC's "Science Brief: Community Use of Cloth Masks to Control the Spread of SARS-CoV-2, *"Experimental data support community masking to reduce the spread of SARS-CoV-2* [4]." Both the WHO and US CDC admit that there is no scientific evidence supporting the use of masks and that mandatory mask-wearing is experimental.

The Nuremberg Code, the International Covenant on Civil and Political Rights (ICCPR), and the Universal Declaration on Bioethics and Human Rights (UDBHR) all determine that *'no one shall be subjected without his free consent to medical or scientific experimentation'* [36, 37,38,39]. Never before have millions of children been forced to wear facemasks for extended periods of time. The potential adverse biomedical ramifications of near-permanent mask-wearing by children while at school while exercising outside and while playing sports are unknown.

In contravention of international bioethical norms, public health authorities are conducting a large-scale biomedical experiment without the required prior informed consent.

4. International Human Rights Implications

Mask mandates infringe on a child's fundamental human right to education directed towards the development of the child's personality, talents, and mental and physical abilities to their fullest potential [40]; Other fundamental human rights infringed by mask mandates *inter alia* include:

- the right of the child to be free from torture or any other cruel, inhumane and degrading treatment [39],
- the right of the child not to be subjected without his or her free consent to medical or scientific experimentation [39].
- the right of the child to form his or her own views to express those views freely in all matters affecting the child [40],
- the right of the child to freedom of expression [40],
- the right of the child to engage in play and recreational activities appropriate to the age of the child [40],
- the right of the child to be protected from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation [40],
- the right of the child not to be subjected to arbitrary or unlawful interference with his or her privacy [40].

Although governments may adopt special measures to protect public health that may impede certain human rights, international human rights law and normative standards establish that these restrictions must *inter alia* meet the requirements of Necessity and Proportionality [41-48]:

- The legal requirements relating to **Necessity** dictate that the impeding limitation must be strictly necessary for the

protection of public-health and must respond to a pressing social need. The principle of strict Necessity must also be applied in an objective manner. Each measure shall be directed to an actual, clear, present, or imminent danger and may not be imposed merely because of an apprehension of potential danger. [41-48].

- The legal requirements relating to **Proportionality** dictates that the impeding limitation must be balanced and proportionate to the interest at stake; it must be appropriate to achieve its protective function; it must be the least intrusive option among those that might achieve the desired result; and it should produce a net public health benefit, in a cost-benefit analysis [36,37,41 - 48].

It is not possible to credibly claim Necessity and Proportionality considering the overwhelming scientific evidence that:

- School children are not at risk of becoming sick or dying from COVID-19 [8-13,18].
- School children are not responsible for substantial viral transmission and amplification of SARS-CoV-2 to other children, teachers, and staff in the school community [14-21].
- Masks are inefficient at preventing both contagion and transmission [24-27] and
- Masks have significant adverse health effects for wearers [28-33].

5. Conclusion

At the time when numerous governments around the globe "followed the science" by implementing mandatory mask-wearing during March 2020, all available authoritative studies on the subject conducted between 1946 and 2020 concluded that mask-wearing do not prevent the transmission of influenza-type viruses.

To the disgrace of many so-called western democracies, instead of "following the science", politicians and public health bureaucrats followed the politics and the profits. In certain instances, impressionable "scientists" were led by politics to somehow conjure up "data" to support official policy despite contradicting scientific data from the preceding six centuries. Despite insistently and relentlessly proclaiming to "follow the science," self-serving government officials, big pharma, media barons, and tech monopolies betrayed the public trust. They made themselves guilty of the most pervasive anti-science and misinformation campaign in more than a century. The only acceptable biomedical scientific views were those that supported and justified the official government response to the COVID-19 pandemic. Any dissenting scientific views or contradictory scientific data (irrespective of the credibility of the data) were censored by governments, public health authorities, the mainstream media and big tech to the detriment of the public. [49]

True science is conducted in an unbiased, objective, and neutral manner, rather than merely providing supportive justification for political decisions and conclusions reached in advance. As pointed-out by the 1965 Physics Nobel Prize winner Richard Feynman:

Scientist's statements are approximate, never certain…Before you begin an experiment, you must not know the answer. If you already know the answer there is no need to gather any evidence and to judge the evidence, you must take all of it, not just the parts you like [50].

To find public health solutions, open, transparent, and robust scientific debate is needed. Credible biomedical science is all about questioning various hypotheses. Narrow "scientific views" tailored to official policy and not allowed to be subjected to vigorous peer and public scrutiny are simply not credible science at all! More than 300 years ago, Immanuel Kant asserted that:

"Ours is an age of criticism, to which everything must be subjected. The authority of legislation, are by many regarded as grounds for exemption from the examination, But, if they are exempted, [they] cannot lay claim to sincere respect, which reason accords only to that which has stood the test of a free and public examination." [51]

It is disconcerting that in 2020 and 2021 many Western democracies, including the U.S. have regressed and, throughout this pandemic, chose to exempt official public health policy from scrutiny. From the biomedical science and data, it is evident that children are not at risk from COVID-19, children are not responsible for spreading the SARS-Cov-2 virus in any meaningful way, masks are inefficient at preventing both contagion and transmission and masks have significant adverse health effects for wearers. Instead of relegating robust scientific debate, bioethical norms and human rights, governments should respect their international human rights obligations and adhere to international bioethical normative standards.

Competing interests: None declared.

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