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Health Inequalities in the First Six Months of the COVID-19 Pandemic

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Getting a picture of COVID-19 related health inequalities in the first months of the COVID-19 pandemic is challenging, as new scientific evidence comes in with unprecedented speed and magnitude. With an abundance of hospital, registry, and survey data, we are living through the first pandemic during which we can monitor its health, social, and economic consequences close to real-time. Still, not all relevant data are collected that could help determine the magnitude of health inequalities - data collection in France explicitly ignore race or ethnicity, for example, and data on COVID-19 infections, disease, and mortality in homeless people and other marginalized groups is largely absent. Also, not all data are publicly accessible, and some data that is not in line with what officials of some countries want to disclose to the public is kept confidential. In a recent case, official data on health inequalities by race and ethnicity have only been released after a lawsuit was filed ([source](#)). Still, we can capitalize on an existing body of knowledge on health inequalities to understand better the health inequalities in the COVID-19 pandemic (Bambra et al 2020).

Health inequalities in COVID-19: Same-old, same-old?

During the last months we have learned a lot about the social determinants of health in the COVID-19 pandemic.

The persons in Europe, the United States and Latin America that were among the first to be infected by the new Sars-CoV2 virus had been carrying out activities such as going on a cruise, skiing, or traveling for business; activities that are usually carried out by more affluent individuals. However, many more people were infected after the more affluent persons were already able to minimize their risk. These seemingly new inequalities of higher risk of infection of travelers or vacationers did not last very long, and the well-known "old" inequalities of higher risk of disease in the socioeconomically less advantaged strata have become again more predominant at the time of writing this post in September 2020.

Government measures to contain spread of COVID-19 most importantly involved wearing masks, efforts to ensure physical distancing, working from home, and school and business closures in spring and summer 2020. Now that government policies in most countries have been following - at least temporarily - measures to control infection spread, we see that many government policies were more successful at minimizing risk of infection for people from socioeconomically more advantaged backgrounds. Indeed, working from home, for example, is often not feasible in lower-income, care, service, or manual jobs. Particularly the risk of severe COVID-19 illness, and dying with or from COVID-19, is in some cases similarly socially patterned as risk of other, non-communicable, diseases such as diabetes, stroke, or mortality at large: We see that education and income are protective, as well as younger age, and absence of co-morbidities.

Why the educational and occupational gradient in COVID-19 disease and mortality?

What is different in the pandemic, is that some of the mechanisms from socioeconomic factors such as education or income that lead to higher risk of infection with the Sars-CoV2 virus (the virus causing COVID-19 illness) are exposed: COVID-19 outbreaks in plants, facilities, and institutions illustrate very well why socioeconomically less advantaged backgrounds lead to higher risk of infection, COVID-19 disease, and mortality.

Precarious work and living conditions

People are at higher risk of getting infected if they are living or working in close proximity to other persons in which recommendations of physical (so-called social) distancing cannot be followed (Burström & Tao 2020), such as in care professions or in grocery stores or other jobs with many and/or close contacts with other people. Similarly, higher risk of infection has been observed for workers in cold and improperly ventilated facilities, such as meat packing plants, particularly without proper protective garment and enforcement of working standards (Middleton et al. 2020). Most of these jobs are low-income and precarious, done by migrants who are often living and working in conditions less favorable than those of the native population, sometimes even against the country's legally defined working and living standards ([source](#)). Government measures like paid leave to take care of children - Luxembourg was among the countries offering the most extensive financial support to compensate for closed day care - are only helpful if such a paid leave does not increase risk of being let go by the employer afterwards. In many countries, employees showed up sick for work and involuntarily contributed to COVID-19 spread, simply to not risk foregoing wage or facing unemployment due to missed working days.

People are at higher risk of getting infected with the Sars-CoV2 virus if they live in institutions. Outbreaks in care homes, refugee reception centers, and prisons have been well documented. Some care institutions may have been among the first to become the scene of a COVID-19 outbreak at a time when the infection chains were not obvious yet, and when protective garment of the care professionals were not available in spring 2020. However, most of the above-mentioned institutions offer less favorable living conditions than autonomous living. Risk of infection is still higher in many of the mentioned institutional settings, since their residents have limited abilities to minimize their risk of infection because they cannot physically distance (e.g. in institutions with shared facilities, shared rooms or apartments). In other cases, residents or their institution staff such as care professionals may lack the protective equipment. Residents may also lack (intellectual, self-regulatory etc.) abilities to physically distance and take other measures of precaution; indeed a staggering rate of COVID-19 deaths in the UK and globally can be attributed to people living with dementia in care settings (Suárez-González et al. 2020).

The cumulative toll of COVID-19 for socioeconomically less advantaged groups

The abundance of COVID-19 related health data has also shown that health inequalities are following complex patterns of mutual reinforcement of different risk factors - for example, medical conditions such as asthma or diabetes are more prevalent in lower-income groups and different racial/ethnic groups that face racism and structural discrimination. Aside from the working and living conditions of these groups, which increase risk of infection with the Sars-CoV2 virus, the medical conditions more prevalent in these groups additionally increase risk of severe COVID-19 disease and mortality. As, in many countries, costs of healthcare need co- or full payment, often proper medical care is sought too late or not sought at all in these groups, risking further complications and lower chances of treatment success. It is not exaggerated to speak of a cumulative burden of the less advantaged groups in the pandemic.

Some global lessons learned from the first months of the COVID-19 pandemic

The COVID-19 related health inequalities are geographically patterned. In analyses by zip code, best possible in megacities, COVID-19 related hospitalizations and mortality are concentrated in the poorer neighborhoods. Communicating spatial patterns in COVID-19 disease is problematic as public health message when it is not at the same time communicated that residents of the poorer neighborhoods are likely working in jobs with higher risk of infection or have living conditions that don't allow physical distancing, and that number of conducted tests differs

across neighborhoods (<https://www.nytimes.com/interactive/2020/nyregion/new-york-city-coronavirus-cases.html>).

Comparing hospitalizations and mortality with or from COVID-19 across countries suggests a complex set of mechanisms, where some countries were unlucky enough to host the first super-spreader events at a time when not much was known about the mechanisms of spread of infection and disease evolution – over the last months the learning curve was extraordinarily steep in this regard, and mortality of hospitalized COVID-19 patients has declined substantially now that management of the disease is better and better understood. When businesses were closed as containment measure, some countries implemented generous compensatory mechanisms to employees that enabled individuals to stay at home, however in other countries no compensation was given so that workers needed to carry out their work, in many cases without the possibility to physically distance or wear protective garment. Countries without decent living standards of a substantial part of the population – think of the favelas in Brazil (Ribeiro and Leist, 2020) – could only insufficiently support physical distancing measures. Communication of leadership and public health authorities played an equally important role in containment of COVID-19. Many countries implemented known measures of precaution too late or reopened too early. The United States are an example for an initially seemingly successful containment of spread, which has however been largely nullified over the summer months of 2020, after reopening schools and the economy too soon, and insufficiently implementing all three of the test-trace-isolate containment measures.

What about the evolution of COVID-19 related health inequalities?

We don't know much yet about the long-term consequences of COVID-19 illness, but worrying case studies suggest risk of long-term functional limitations and even disability in some COVID-19 patients who were more severely affected.

Existing short-term inequalities from socioeconomically patterned risk of infection will likely be translated to long-term health inequalities as consequences from past COVID-19 illness, that is, in those groups who are now more at risk of being infected with the Sars-CoV2 virus, we will also see higher burden of morbidity, long-term disability, and mortality with or from COVID-19 compared to groups at lower risk.

Other health inequalities will arise in countries without universal health coverage and a possibly costly access to a future COVID-19 vaccine.

Health inequalities in children

Existing health inequalities could be exacerbated particularly for children whose families relied on school lunches or other child welfare programmes that were stopped in the first wave of COVID-19 in spring 2020 (Van Lancker et al 2020). Data on under- or malnutrition while school closures in many places are still ongoing are however scarce. Existing inequalities will be further reinforced by unequal educational achievement and development of cognitive skills when the long-term effects of school closures become visible over the coming years: While children from less advantaged backgrounds received no or insufficient digital schooling during the months of the pandemic, more advantaged children were home- or digitally schooled with the help of privately paid exercise books, tutors, and remote educational offers.

Moving forward, decision making needs to protect particularly vulnerable members of society such as care home residents during the pandemic. Inequalities arising from school closures need not only be monitored but actively addressed to increase health equity of children, to prevent unequal opportunities of the most fragile members of society. At the same time, we should ensure equitable protection against infectious disease, particularly since evidence on lasting disease burden after infection is accumulating. All members of society should have equitable access to treatment regardless of their origin or other characteristics.

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