



Demography and COVID-19: risks, responses and impacts

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Editorial introduction

Like any pandemic, COVID-19 has not affected us all equally. The direct risk of infection and mortality is unevenly shared across demographic groups, and the impact of societal responses to COVID-19 has affected sub-populations differently. How demography interacts with this global pandemic has increasingly become a topic of discourse. While demographic factors such as population composition, mobility, density, and ageing may relate to COVID-19's spread, demographic processes (births, deaths and migration) may also in turn be influenced by COVID-19. For example, evidence suggests that older people are at greater risk of dying from COVID-19 than younger individuals, and men are more likely to die from COVID-19 than are women. The link between migration and the pandemic has long been established with disproportionate impact on immigrants and their children. While immigration dropped almost everywhere due to border closer during Covid-19, there were many studies reporting migrants at a higher risk of mortality and poor health than the native-born populations. Research from past pandemics have also shown long-term repercussions for fertility, mortality and migration.

This Special Issue of the Journal of Population Research brings together issues and debates related to COVID-19 from a demographic perspective, particularly during

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the early period of the pandemic. It includes empirical case studies from Australia, Pakistan, Thailand, the United States and from across Europe. The papers include an examination of the impact of COVID-19 on population ageing, fertility, and excess mortality to data issues for Indigenous populations and the demographic characteristics associated with the spread of COVID-19.

Wilson, Temple and Charles-Edwards's paper attempts to examine the possible effects of COVID-19 on Australia's demography over the next two decades (i.e., 2019–41), focusing in particular on population ageing. They formulated three scenarios in which the pandemic has a short-lived impact of 2–3 years, a moderate impact lasting about 5 years, or a severe impact lasting up to a decade. They also created two hypothetical scenarios, one of which illustrates Australia's demographic future in the absence of a pandemic for comparative purposes, and another which demonstrates the demographic consequences if Australia had experienced excess mortality equivalent to that recorded in the first half of 2020 in England & Wales. Their projections show that the pandemic will probably have little impact on numerical population ageing but a moderate effect on structural ageing. Had Australia experienced the high mortality observed in England & Wales there would have been 19,400 excess deaths. However, they caution that considerable uncertainty surrounds the future trajectory of COVID-19 and therefore the demographic responses to it.

Using diagnosed COVID-19 cases from Johns Hopkins University and data from the European Social Survey, Mogi and Spijker analysed the association of social, economic, and demographic factors with the initial spread of COVID-19 across 23 European countries between March 1 and April 30, 2020. They showed that social and economic factors are strongly and positively associated with COVID-19 throughout the studied period, while the association with population density and cultural factors was initially low, but by April, was higher than the earlier mentioned factors.

Bignami's paper proposed and validated a synthetic indicator of COVID-19 fatality (synthetic case fatality rate (SCFR)) that improves its comparability across countries by adjusting for the age and sex structure of COVID-19 cases without relying on the arbitrary choice of a standard population. She found that contrary to what comparisons of the crude CFR suggest, differences in COVID-19 fatality across countries according to the proposed SCFR are not very stark. Importantly, once adjusted for the age structure of COVID-19 cases, the higher case fatality among men emerges as the main driver of international differences in COVID-19 CFR. She concluded that the SCFR is a simple indicator that is useful for monitoring the fatality of SARS-CoV-2 mutations and the efficacy of health policy measures for COVID-19, including vaccination.

Yellow Horse and Huyser address the lack of reliable data on COVID-19 among American Indian and Alaska Native (AIAN) populations, highlighting that the pandemic has brought into focus a number of gaps in existing data systems. They argue that a move towards greater data sovereignty for Indigenous peoples that would both lead to improved data quality on AIAN populations, and improved outcomes within Tribal communities. In closing, they call for population scientists to reflect on the role of structural racism in leading to poor data quality for smaller sub-populations, and argue for more meaningful engagement with Indigenous Peoples as a path forward towards a more accountable, just, and inclusive system of data collection.

Goujon and colleagues explore the demographic and geographic patterning of COVID-19 cases and deaths in the European Union during the first wave of the pandemic. Using data from the European Surveillance System, they uncover a set of key findings on the demographic breakdown of COVID-19 infections. They find that women were disproportionately infected by COVID-19 in ages below 60, a result that they attribute to their overrepresentation in frontline health services and higher-contact occupations. Age patterns were more mixed at older ages, and they find that the first phase of the pandemic disproportionately impacted urban areas throughout Europe. Broadly, this article sets out a set of important findings describing the heterogeneity in COVID-19 infections in Europe by age, sex, and geography, providing an evidence-base to improve future pandemic-related policies.

Shang and Xu argue for the use of excess deaths, rather than officially reported deaths due to COVID, as the preferred measure of COVID-related mortality. They focus on the case study of Belgium, which in the early stages of the pandemic experienced high COVID mortality. The authors emphasise the importance of age in studying COVID-related mortality and make the case for applying a change point detection method to distinguish the pre-COVID mortality era from the COVID-affected period by age group. This statistical method reveals timing differences in the impact of COVID-related mortality across age groups.

Jindahra, Wongboonsin and Wongboonsin explored demographic differences in COVID-19 infections in Thailand, early in the pandemic. Utilising cluster analysis, they identified seven key sub-populations of infection risk. Interestingly, relative to many other regions at the time, infection risk tended to be higher among younger age and male populations. With new data available, it is a priority to revisit these early analyses to see how key cluster groups may have evolved over time.

Finally, Mughal and Javed considered the impacts of the COVID-19 pandemic on delayed nuptiality and fertility in Pakistan – again in early stages of the pandemic in 2020. Such an analyses is particularly pertinent in Pakistan where most births occur within the context of marriage. Their analyses suggested that approximately 400,000 births may have been deferred due to delayed nuptiality, but that this figure could be recuperated once marriage levels increased. Again, as new data becomes available, further insights can be offered into the impacts of pandemics upon delayed nuptiality and its subsequent impacts on fertility at the national level. In the longer term, the authors note that longer term impacts on fertility in Pakistan will be a function of not only delayed marriage, but also to changes in preferences and behaviours of married couples – some of which may be attributed to the pandemic.

We hope readers enjoy the variety of perspectives and case studies in this special issue of the journal. The papers focus on the relatively early impacts of COVID-19 on demographic trends and patterns, especially those related to mortality. In due course, the longer-term effects on demography will become evident, and we encourage researchers to submit papers to the journal on the direct and indirect effects of the pandemic in due course. Future research might examine the effects of long COVID on mortality and disability, whether the short-run disruption to internal migration, home working, and commuting patterns become permanent, and assess the short and long-run impacts on fertility trends.

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