

# Socioeconomic Inequity and Inequality Results in Disproportionate Detrimental Impact to Racialized Populations in North America and the UK



Marillea Yu, ND and Jocelyn Faydenko, ND, DC

**Abstract:** Socioeconomic and health inequities often contribute to a higher incidence of chronic health conditions among the most vulnerable. The COVID-19 pandemic has been no exception, with disadvantaged communities demonstrating higher infection rates, morbidity, and mortality in Canada, the United Kingdom, and the United States. This article discusses the relationships between social determinants of health and the prevalence of COVID-19.

The coronavirus (COVID-19) pandemic, in both North America and the United Kingdom, has served to highlight socioeconomic and health inequities among the most vulnerable. The rapid infection rate and resulting social and economic restrictions have shown that certain communities are disproportionately affected by COVID-19.

Studies have shown that those who are most likely to be affected live and operate under numerous social and economic conditions that increase their risk of exposure, and often experience additional conditions such as racism and other forms of discrimination that are known to contribute to poorer health overall. For example, those who identify as Black or Indigenous in North America have been shown to have higher rates of chronic health conditions — often related to racism—that increase risk of morbidity and mortality and are known to worsen outcomes of COVID-19 once infected.<sup>1,2</sup> Additionally, Indigenous communities in Canada and the US face unique challenges to health and well-being, both on- and off-reserve, which also contribute to increased vulnerability to COVID-19.<sup>3,4</sup>

In Canada, nationally acquired disaggregated race-based data has not yet been made publicly available, despite repeated requests by advocacy groups for many years. A combination of factors, including significant data coming out of the US and the UK indicating racial disparities in COVID-19 infections, have motivated some Canadian municipalities to begin collecting statistics related to COVID-19, race/ethnicity, and socio-economic conditions. At present date, statistics are currently available only for Toronto and Peel Public Health in Ontario, and Montreal Public Health in Québec.<sup>5,6,7</sup> Provincial statistics are available only from Ontario Public Health and nationally only from Indigenous Services Canada.<sup>8,9</sup> Accuracy of data available is limited to completeness and currency of data collected, and the rapidly changing situation of COVID-19.

In the US and UK, several studies noted that ‘visible minority’ groups (including non-white and racialized populations) were

disproportionately affected by COVID-19, and often experienced more severe outcomes such as hospitalization and mortality, when compared to Caucasian individuals.<sup>2,10</sup>

In the UK, Black and South Asian groups were more likely to test positive for COVID-19 compared to ethnic Caucasians.<sup>10</sup> They also found that visible minorities were more likely to be socioeconomically disadvantaged, to be living with extended family, or in overcrowded dwellings, and more likely to hold lower-wage ‘essential’ jobs, all of which are conditions that put these groups at greater risk for virus exposure and transmission.<sup>11</sup>

In the US, COVID-19 infections have led to nearly 171,000 deaths as of mid-August 2020, averaging approximately 1,100 deaths daily.<sup>12</sup> There has been a growing body of literature demonstrating that socioeconomically suppressed communities exhibit a higher risk of COVID-19 infection, morbidity, and mortality.<sup>13,14,15,16</sup> These populations tend to have disparities related to healthcare access, housing/neighbourhood density, income inequality, and racial discrimination.<sup>14</sup>

Since the emergence of the COVID-19 pandemic in the US, several studies have been published that have looked at data associated with social determinants of health (SDOH) and COVID-19 prevalence. One study based in Chicago, found that social vulnerability and health risks both contribute to COVID-19 risk and incidence of death. Based on medical examiner data, 62.8% of COVID-19 deaths were African Americans, and the highest scores for social vulnerability and health risk factors were most predominantly seen in African American communities.<sup>17</sup> Another study analyzed data related to SDOH and COVID-19 rates in the State of Massachusetts and found a higher burden of COVID-19 in populations with greater financial disparities, lower insurance coverage, and a greater number of workers deemed ‘essential’ (e.g. healthcare, social assistance, and transportation industries).<sup>18</sup>

An analysis of data collected from the Providence Health System, the third largest not-for-profit health system in the US, looked at sociodemographic and environmental variables and their association with COVID-19 infection. Higher risk for infection was seen in Asian, African- and Latin-American ethnicities, older individuals, non-English speakers, those with financial, housing or transportation insecurity, and people from areas with lower air quality. Many of those populations are more likely to face barriers to healthcare access and social distancing practices, making them more vulnerable to infection and illness risk.<sup>19</sup>

In the Province of Québec, Montreal Public Health used current COVID-19 data and compared it to census data from 2016. It was noted that areas with higher rates of COVID-19 infections also had the following associated factors: a high concentration of those working in occupations involving health care, social work, manufacturing and utilities, higher rates of 'unsuitable' housing (i.e. living in crowded conditions), household incomes below \$70K CAD, and a high percentage of population who identify as African Canadian. Other correlations included residents holding refugee status and dependence on public transportation.<sup>21,22</sup>

In Ontario, information from Toronto Public Health showed that many racialized and lower income populations made up the majority of total COVID cases.<sup>5</sup> Peel Region Public Health also showed higher prevalence of COVID-19 cases in racialized groups. Health care workers made up most positive cases (33%), followed by trades, transport and equipment operators (18%) and manufacturing and utilities (13%).<sup>8</sup>

The Enhanced Epidemiological summary by Public Health Ontario also looked at the ethnic diversity of neighbourhoods based on 2016 census data and associated COVID-19 cases.<sup>23</sup> Higher rates of infection were found in neighbourhoods with the highest levels of ethnic diversity, which also corresponded to a higher proportion of non-white residents; lower levels of income; a higher percentage of apartment dwellings; a higher proportion of overcrowded living conditions, and the highest percentage of inability to in either official languages.

Many jobs that have been deemed 'essential' are often associated with conditions that increase the risk of contracting and spreading COVID-19, by requiring working with the public in a manner that prevents workers from social distancing and practicing preventive hygiene measures.<sup>8</sup> Many of these jobs are part time, poorly paid and lack normal employee benefits such as paid sick leave, leading to workers often staying on shift if symptomatic or exposed. They are predominantly held by visible minorities including recent immigrants; intersecting factors that often serve to further marginalize these community members.<sup>24,25</sup>

In the case of racial disparities, a number of risk factors are often found to overlap across racialized individuals and households.<sup>18</sup> This includes living in areas of higher population density, and living with multiple generations in one dwelling, which often results in overcrowding and the inability to practice social distancing. They are also more likely to be employed in an occupation that has been deemed 'essential', are often dependent on public transport, and are

often in a low-income bracket. They are also more likely to be unable to access adequate medical care due to factors including language barriers, lack of resources, location, and mistrust of the system.<sup>26,27</sup>

As previously discussed, African-Canadian populations are at increased risk of contracting COVID-19.<sup>29</sup> To add to the issue, there is a higher prevalence of hypertension and diabetes in this population, as well as increased risk of morbidity and mortality related to disease outcomes. They also experience personal and systemic racism, and are subject to conditions of inequity and inequality, resulting from bias, segregation and discrimination. This can increase levels of stress, prevent access to appropriate medical care and have detrimental effects on overall health and well-being.<sup>30,31,32,33</sup>

Across North America, Indigenous or First Nations populations, face numerous unique inequalities, regardless of living on- or off-reserve. Reserve lands are often located in very remote areas, with many subject to poor living conditions such as water and food insecurity, overcrowding in homes, and are under-serviced when it comes to health care and other social programs.<sup>35,36</sup> Existing gaps between the conventional medical model of care and the understanding of Indigenous healing traditions serve to contribute to health inequality and may provide a frame of reference that does not reflect the actual needs of the community.<sup>37</sup>

Current statistics on COVID-19 infections in the Canadian Indigenous population have been acquired exclusively from those who live on-reserve, despite many Indigenous people living off designated reserves. Those who live off-reserve may be counted in provincial and territorial statistics but are not distinguished as Indigenous. With this caveat in mind, according to data provided by Indigenous Services Canada,<sup>9</sup> current on-reserve infections found are approximately one-quarter of the rate of the Canadian population at large. Fewer numbers may be due in large part to the relative isolation of most reserves from larger cities, as well as the measures many of these communities took to reduce risk of exposure, such as limiting travel and movement on- and off- reserve land.

American studies have shown that Indigenous communities, particularly the Navajo nation, have very high infections rates, made worse by crowded living conditions and water insecurity, as well as inability to access health care.<sup>38</sup> One Arizona study showed that 18% of positive cases and 13% of deaths occurred in Native American populations, despite only making up 5.3% of Arizona's population.<sup>39</sup>

A number of studies have reviewed the effects of the SDOH's on Indigenous populations across North America and found poorer health outcomes related to conditions tied to income, employment, housing, and education.<sup>40</sup> In many of these areas, the Indigenous population faces increased challenges compared to the non-Indigenous population,<sup>41</sup> including lower income, higher poverty, larger families, increased incidence of experiencing racism and discrimination and other factors that are positively correlated to poorer health outcomes. Studies of Canadian on-reserve Indigenous

populations showed an increase in prevalence of obesity<sup>42</sup> and diabetes, compared to the non-Indigenous Canadian population, both risk factors for more severe COVID-19 sequelae.

In addition to Public Health measures already in place, additional considerations need to be taken in order to reduce viral transmission throughout the most vulnerable populations. Ensuring that protective measures are in place for those working under conditions that put them at increased risk are key. These include adequate personal protective equipment (PPE) and hand hygiene, and means to socially distance whenever possible. Additionally, these workers must be allowed paid sick leave without being concerned they will lose their employment. Finally, communities need explore ways to improve the underlying health of populations who are at increased risk of comorbid conditions through lack of accessibility to adequate food, exercise and social interconnections.

Many of the socioeconomic inequalities that have been outlined and identified exist as ongoing issues and have exposed the most vulnerable members of our communities to the worst outcomes of the COVID-19 pandemic, especially those who identify as African Canadian, Indigenous and other visible minorities. Conditions surrounding the determinants of health in racialized communities have allowed for the continued spread of COVID-19 among the most vulnerable of our population. The unique considerations presented by race and ethnicity in a multi-cultural society, as well as social and economic factors, need to be acknowledged and addressed in the overall plan if we aim to quickly and effectively contain such a threat, as well as address both tangible and intangible costs of these effects on public health outcomes.<sup>44,45</sup>

*COI: The authors have no relevant conflicts of interest to disclose.*

## About the Authors

**Marillea Yu, ND** is a Naturopathic Doctor practicing in Toronto, Ontario, Canada. She received her BSc at the University of Prince Edward Island in Charlottetown, PE prior to becoming a graduate of The Canadian College of Naturopathic Medicine in Toronto, ON. Her clinical interests centres on Environmental Medicine and the effects of everyday toxic exposures on health and wellness and its impact on autoimmune and inflammatory diseases.

**Jocelyn Faydenko, ND, DC** is a recent graduate from the National University of Health Sciences (NUHS) in Lombard, IL, and has been active in the university's research department as a research assistant and research fellow over the past several years. Earlier this year, she and colleague Fraser Smith, ND, published an article on the use of cardiac biomarkers in the *European Journal of Integrative Medicine (EuJIM)*. She will be starting a research residency this fall, and her clinical interests include cardiovascular disease, reproductive and sexual health, acupuncture, and natural products research.

## References

- Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet*. 2017;389(10077):1453-1463. doi:10.1016/S0140-6736(17)30569-X
- Fortuna LR, Tolou-Shams M, Robles-Ramamurthy B, Porche MV. Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: The need for a trauma-informed social justice response. *Psychol Trauma*. 2020;12(5):443-445. doi:10.1037/tra0000889
- Hajizadeh M, Hu M, Bombay A, Asada Y. Socioeconomic inequalities in health among Indigenous peoples living off-reserve in Canada: Trends and determinants. *Health Policy*. 2018;122(8):854-865. doi:10.1016/j.healthpol.2018.06.011
- Marrone S. Understanding barriers to health care: a review of disparities in health care services among indigenous populations. *Int J Circumpolar Health*. 2007;66(3):188-198. doi:10.3402/ijch.v66i3.18254
- COVID-19 infection in Toronto: Ethno-racial Identity and Income. Updated July 17, 2020. Accessed August 2, 2020. <https://www.toronto.ca/home/covid-19/covid-19-latest-city-of-toronto-news/covid-19-status-of-cases-in-toronto/>
- COVID-19 and the Social Determinants of Health. Region of Peel. Peel Region website. August 7, 2020. Accessed August 18, 2020. [https://www.peelregion.ca/coronavirus/\\_media/COVID-19-race-and-occupation.pdf](https://www.peelregion.ca/coronavirus/_media/COVID-19-race-and-occupation.pdf)
- État de Situation: Île de Montréal, ses arrondissements et les villes liées. Direction Régionale de Santé Publicque de Montréal. August 18, 2020. Accessed August 20, 2020. <https://santemontreal.qc.ca/fileadmin/fichiers/Campagnes/coronavirus/situation-montreal/COVID19-Situation-Montreal-Arrondissements-VillesLiees.pdf>
- Enhanced Epidemiological Summary COVID-19 in Ontario – A Focus on Diversity. Public Health Ontario. Updated May 14, 2020. Accessed August 2, 2020. <https://www.publichealthontario.ca/-/media/documents/ncov/epi/2020/06/covid-19-epi-diversity.pdf?la=en>
- Coronavirus (COVID-19) and Indigenous Communities. Government of Canada Website. Updated August 10, 2020. Accessed August 15, 2020. <https://www.ssc-jsc.gc.ca/eng/1581964230816/1581964277298#chap0>
- Patel AP, Paranjpe MD, Kathiresan NP, Rivas MA, Khera AV. Race, Socioeconomic Deprivation, and Hospitalization for COVID-19 in English participants of a National Biobank. Preprint. *medRxiv*. 2020;2020.04.27.20082107. Published 2020 May 2. doi:10.1101/2020.04.27.20082107
- Niedzwiedz CL, O'Donnell CA, Jani BD, et al. Ethnic and socioeconomic differences in SARS-CoV-2 infection: prospective cohort study using UK Biobank. *BMC Med*. 2020;18(1):160. Published 2020 May 29. doi:10.1186/s12916-020-01640-8
- APM Research Lab. The color of coronavirus: COVID-19 deaths by race and ethnicity in the U.S. Available at <https://www.apmresearchlab.org/covid/deaths-by-race>. Updated August 18, 2020. Accessibility verified August 19, 2020.
- Wang ML, Behrman P, Dulin A, et al. Addressing inequities in COVID-19 morbidity and mortality: research and policy recommendations. *Transl Behav Med*. 2020;10(3):516-519. doi:10.1093/tbm/ibaa055
- Turner-Musa J, Ajayi O, Kemp L. Examining Social Determinants of Health, Stigma, and COVID-19 Disparities. *Healthcare (Basel)*. 2020;8(2):168. Published 2020 Jun 12. doi:10.3390/healthcare8020168
- Tai DBG, Shah A, Doubeni CA, Sia IG, Wieland ML. The Disproportionate Impact of COVID-19 on Racial and Ethnic Minorities in the United States [published online ahead of print, 2020 Jun 20]. *Clin Infect Dis*. 2020;ciaa815. doi:10.1093/cid/ciaa815
- Abrams EM, Szefler SJ. COVID-19 and the impact of social determinants of health. *The Lancet Respiratory Medicine*. 2020;8(7):659-661. doi.org/10.1016/S2213-2600(20)30234-4
- Kim SJ, Bostwick W. Social Vulnerability and Racial Inequity in COVID-19 Deaths in Chicago. *Health Educ Behav*. 2020;47(4):509-513. doi:10.1177/1090198120929677
- Hawkins D. Social Determinants of COVID-19 in Massachusetts, United States: An Ecological Study. *J Prev Med Public Health*. 2020;53(4):220-227. doi:10.3961/jpmph.20.256
- Rosenfeld Y, Beam J, Maier H, et al. A Model of Disparities: Clinical, Environmental, and Sociodemographic Risk Factors Associated with Likelihood of COVID-19 Infection. 2020;1-10. doi:10.21203/rs.3.rs-31918/v1
- APM Research Lab. The color of coronavirus: COVID-19 deaths by race and ethnicity in the U.S. Available at <https://www.apmresearchlab.org/covid/deaths-by-race>. Updated August 18, 2020. Accessibility verified August 19, 2020.
- État de Situation: Île de Montréal, ses arrondissements et les villes liées. Direction Régionale de Santé Publicque de Montréal. August 18, 2020. Accessed August 20, 2020. <https://santemontreal.qc.ca/fileadmin/fichiers/Campagnes/coronavirus/situation-montreal/COVID19-Situation-Montreal-Arrondissements-VillesLiees.pdf>
- Rocha, R, Shingler B, Montpetit J. (2020) 'Montreal's poorest and most racially diverse neighbourhoods hit hardest by COVID-19, data analysis shows' *CBC*, 11 June 2020. Available at: <https://www.cbc.ca/news/canada/montreal/race-covid-19-montreal-data-census-1.5607123> (Accessed: August 3, 2020)
- Enhanced Epidemiological Summary COVID-19 in Ontario – A Focus on Diversity. Public Health Ontario. Updated May 14, 2020. Accessed August 2, 2020. <https://www.publichealthontario.ca/-/media/documents/ncov/epi/2020/06/covid-19-epi-diversity.pdf?la=en>
- Economic Policy Institute (EPI) analysis of Current Population Survey Outgoing Rotation Group microdata, EPI Current Population Survey Extracts, Version 1.0.2 (2020), <https://microdata.epi.org>
- Waisel DB. Vulnerable populations in healthcare. *Curr Opin Anaesthesiol*. 2013;26(2):186-192. doi:10.1097/ACO.0b013e32835e8c17
- Hawkins D. Differential occupational risk for COVID-19 and other infection exposure according to race and ethnicity. *Am J Ind Med*. 2020;63(9):817-820. doi:10.1002/ajim.23145
- Raifman MA, Raifman JR. Disparities in the Population at Risk of Severe Illness From COVID-19 by Race/Ethnicity and Income. *Am J Prev Med*. 2020;59(1):137-139. doi:10.1016/j.amepre.2020.04.003
- Azar, W.S., Njeim, R., Fares, A.H. et al. COVID-19 and diabetes mellitus: how one pandemic worsens the other. *Rev Endocr Metab Disord* (2020). <https://doi.org/10.1007/s11154-020-09573-6>
- Milleret GA, Jones AT, Benkeser D, et al. Assessing Differential Impacts of COVID-19 on Black Communities [published online ahead of print, 2020 May 14]. *Ann Epidemiol*. 2020;47:37-44. doi:10.1016/j.annepidem.2020.05.003
- Gray DM 2nd, Anyane-Yeboah A, Balzora S, Isaka RB, May FP. COVID-19 and the other pandemic: populations made vulnerable by systemic inequity [published online ahead of print, 2020 Jun 15]. *Nat Rev Gastroenterol Hepatol*. 2020;1-3. doi:10.1038/s41575-020-0330-8
- Blendon RJ, Buhr T, Cassidy EF, et al. Disparities in health: perspectives of a multi-ethnic, multi-racial America. *Health Aff (Millwood)*. 2007;26(5):1437-1447. doi:10.1377/hlthaff.26.5.1437
- Ajllore O, Thames AD. The fire this time: The stress of racism, inflammation and COVID-19. *Brain Behav Immun*. 2020;88:66-67. doi:10.1016/j.bbi.2020.06.003
- Fortuna LR, Tolou-Shams M, Robles-Ramamurthy B, Porche MV. Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: The need for a trauma-informed social justice response. *Psychol Trauma*. 2020;12(5):443-445. doi:10.1037/tra0000889
- Ebadi, M., & Montano-Loza, A. J. (2020). Perspective: improving vitamin D status in the management of COVID-19. *European journal of clinical nutrition*, 74(6), 856-859. <https://doi.org/10.1038/s41430-020-0661-0>
- Bradford LE, Okpalauwaekwe U, Waldner CL, Bhadraraj LA. Drinking water quality in Indigenous communities in Canada and health outcomes: a scoping review. *Int J Circumpolar Health*. 2016;75:32336. Published 2016 Jul 29. doi:10.3402/ijch.v75.32336
- Sarkar A, Hanrahan M, Hudson A. Water insecurity in Canadian Indigenous communities: some inconvenient truths. *Rural Remote Health*. 2015;15(4):3354.
- King M, Smith A, Gracey M. Indigenous health part 2: the underlying causes of the health gap. *Lancet*. 2009;374(9683):76-85. doi:10.1016/S0140-6736(09)60827-8
- Marrone S. Understanding barriers to health care: a review of disparities in health care services among indigenous populations. *Int J Circumpolar Health*. 2007;66(3):188-198. doi:10.3402/ijch.v66i3.18254
- Tai DBG, Shah A, Doubeni CA, Sia IG, Wieland ML. The Disproportionate Impact of COVID-19 on Racial and Ethnic Minorities in the United States [published online ahead of print, 2020 Jun 20]. *Clin Infect Dis*. 2020;ciaa815. doi:10.1093/cid/ciaa815
- Kolahdoz F, Nader F, Yi KJ, Sharma S. Understanding the social determinants of health among Indigenous Canadians: priorities for health promotion policies and actions. *Glob Health Action*. 2015;8:27968. Published 2015 Jul 16. doi:10.3402/gha.v8.27968
- Hajizadeh M, Hu M, Bombay A, Asada Y. Socioeconomic inequalities in health among Indigenous peoples living off-reserve in Canada: Trends and determinants. *Health Policy*. 2018;122(8):854-865. doi:10.1016/j.healthpol.2018.06.011
- Batal M, Decelles S. A Scoping Review of Obesity among Indigenous Peoples in Canada. *J Obes*. 2019;2019:9741090. Published 2019 Jun 3. doi:10.1155/2019/9741090
- Daniel M, Gamble D. Diabetes and Canada's aboriginal peoples: the need for primary prevention. *Int J Nurs Stud*. 1995;32(3):243-259. doi:10.1016/0020-7489(94)00045-1
- Wheeler SM, Bryant AS. Racial and Ethnic Disparities in Health and Health Care. *Obstet Gynecol Clin North Am*. 2017;44(1):1-11. doi:10.1016/j.ogc.2016.10.001
- Fiscella K, Sanders MR. Racial and Ethnic Disparities in the Quality of Health Care. *Annu Rev Public Health*. 2016;37:375-394. doi:10.1146/annurev-publhealth-032315-021439