

The Importance of Race and Ethnicity Data in Cardiovascular Health Research

Javal Sheth, Maneesh Sud and Dennis Ko

Abstract

The COVID-19 pandemic has underscored the importance of addressing race and ethnic disparities in healthcare worldwide. In Canada, however, the lack of consistent capture of race and ethnicity data has hindered a comprehensive understanding of these potential disparities. This article explores the importance of and current progress in collecting race and ethnic data in Canada and provides examples of its importance in cardiovascular health outcomes. We believe that a successful implementation of standardized data collection tools on race and ethnicity data will shape evidence-based policies to minimize health disparities in Canada in the future.

Race and Ethnic Disparities in Health during the COVID-19 Pandemic

The COVID-19 pandemic not only exposed the vulnerability of our healthcare system but also brought into focus the issue of race and ethnic disparities in health worldwide. This was best demonstrated in the US, where race and ethnicity data for patients are routinely collected. In an analysis of over 46 million health records in the US, investigators found that Black patients were three times more likely to be hospitalized and one-and-a-half times more likely to die due to COVID-19 compared to non-Hispanic White patients (Rubin-Miller et al. 2020). In contrast, gaining insight into race and ethnic disparities in health in Canada is extremely challenging because individual-level race and ethnicity data are not routinely captured. Instead, studies have attempted to circumvent this limitation by examining disparities using geographic units at the neighbourhood level, which may not reflect the characteristics of individuals accurately. Still, researchers have found a twofold higher age-adjusted COVID-19 death rate in Canadian neighbourhoods with the highest compared to the lowest proportions of visible minority groups (Subedi et al. 2020).

Definition of Race and Ethnicity

Race is a social construct that categorizes people into groups based on perceived physical differences, such as skin colour

and facial features (CIHI 2022). On the other hand, ethnicity is a sense of group belonging based on shared characteristics, such as geographic origins, cultural traditions, language and religion (CIHI 2022). While these terms lack biological significance, they carry important social meanings, providing a lens through which to evaluate racism and inequities in health. Racism encompasses beliefs or actions that establish the dominance of one racialized group over another (CIHI 2022). Therefore, research incorporating race and ethnicity data in health can shed light on the reality of social stratification, injustices and inequities and the implications of these issues for population health.

Race and Ethnic Diversity in Canada

In 2021, Statistics Canada reported that there were 2.6 million South Asian, 1.7 million Chinese and 1.5 million Black individuals living in Canada, accounting for 16.1% of Canada's population. By 2041, these numbers are expected to increase to more than 5 million South Asian Canadians and 2 million each of Chinese, Black and Filipino Canadians (Statistics Canada 2022). Derived from census profiles, the data provide valuable insights into these growing racialized communities and are needed to ensure equity in healthcare quality and outcomes across different racial and ethnic groups in the future.

Effect of Race and Ethnicity on Cardiovascular Disease Outcome

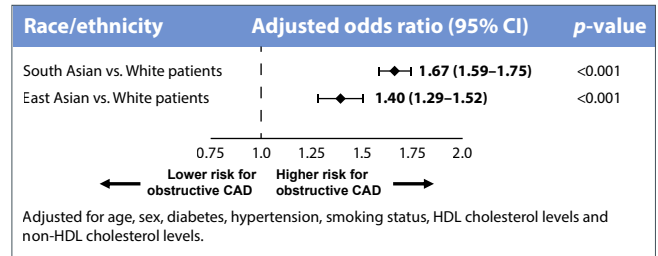
Cardiovascular disease (CVD) is the leading cause of death in developed countries worldwide. The American Heart Association recently published a "call to action" to describe structural racism as the main driver of the persistence of health disparities in the US (Churchwell et al. 2020: e2). Black individuals have poorer cardiovascular health and a higher overall death rate from CVD compared to non-Hispanic White individuals (Graham 2015). Even though overall CVD-related deaths are declining across all ethnicities, Black individuals are still 30% more likely to die from heart disease than non-Hispanic White individuals (Graham 2015).

In Canada, CVD is the second leading cause of death and the leading cause of hospitalization (Public Health Agency of Canada 2018). However, the impact of race and ethnicity on cardiovascular health has been challenging to study in Canada due to the lack of individual-level race and ethnicity data, similar to the case with COVID-19 studies. Existing studies have instead leveraged surrogates for individual-level race and ethnicity data, such as classification algorithms based on an individual’s surname, neighbourhoods with different ethnic concentrations and country of origin specific to recent immigrants. Despite their limitations, these studies demonstrate the existence of racial and ethnic disparities in cardiovascular health in Canada. Notably, they have found higher rates of CVD and mortality among South Asian populations. For example, in a study of 985 participants from three major Canadian cities, South Asians had a higher prevalence of CVD compared to Europeans and Chinese (Anand et al. 2000). One meta-analysis examining cardiovascular risk among South Asians in Canada demonstrated that the sex-standardized mortality rate from coronary disease was 42% in South Asian males and 29% in White males from 1979 to 1993 (Rana et al. 2014).

Having more detailed information on race and ethnicity data is a necessary step to understanding the extent of healthcare disparities in the Canadian healthcare system.

One of the largest Canadian studies was performed by our cardiovascular group at ICES, which examined more than 70,000 patients with coronary artery disease (CAD) undergoing coronary angiography. We found that South Asian patients, in comparison to White patients, were on average almost five years younger at presentation but had the highest adjusted odds of obstructive CAD (Rooprai et al. 2023). Interestingly, even after adjusting for age, sex and traditional cardiac risk factors, South Asians still had 67% higher adjusted odds and East Asians had 40% higher odds of having obstructive CAD compared to White patients (Figure 1). In this study, race and ethnicity information was obtained using CorHealth Ontario’s clinical registry, which represents a step forward in routinely collecting race and ethnicity data on all individuals undergoing cardiac procedures in Ontario. It is worth noting that race and ethnicity were assigned to the individual by the referring physicians rather than being self-reported by patients, which is not considered the gold standard for capturing these data. Nonetheless, these findings suggest that the incorporation of race and ethnicity information may improve risk-prediction tools for the detection of coronary obstruction in cardiac catheterization.

FIGURE 1.
Association between race and ethnicity and obstructive CAD



Source: Rooprai et al. 2023.
CAD = coronary artery disease; CI = confidence interval; HDL = high-density lipoprotein.

Progress in Race and Ethnicity Data Collection in Canada

There have been opposing views surrounding the collection of race and ethnicity data in Canada. In 1994, the *Canadian Journal of Law and Society* released a special issue that highlighted arguments against collecting race-based data in the context of crime and policing (Johnston 1994). These arguments suggested that these data would normalize racism, they could be used to further justify racist attitudes or beliefs and they would not lead to actionable change in policy (Johnston 1994). However, advocacy by minority groups, increased media interest and heightened public awareness after the COVID-19 pandemic have pressured stakeholders to shift their focus to improving data collection (Pinto et al. 2023). In 2022, the Canadian Institute for Health Information (CIHI) released standards for race-based and Indigenous identity-based data collection for Canadian hospitals (CIHI 2022). Unfortunately, their adoption was left to the discretion of the provinces on a volunteer basis, which has resulted in a low uptake so far.

Recommendations

Having more detailed information on race and ethnicity data is a necessary step to understanding the extent of healthcare disparities in the Canadian healthcare system. Without such information, it is impossible to create solutions to provide equitable healthcare for all citizens. A deeper understanding is also needed for racialized groups who may have concerns about data collection that can lead to stigmatization and unintended consequences. The initial effort by CIHI to provide guidance on the use of standards for race and ethnicity definition and data collection is a significant step forward. Achieving the goal of reducing health disparities in race and ethnic groups necessitates continuing education and training and collaborative efforts between researchers, policy makers, community organizations and patient advocacy groups to shape evidence-based policies.

Conclusion

Studies have shown that racialized populations have higher rates of CVD in countries where race and ethnicity data are routinely collected. Emerging research in Canada using surrogate measures of race and ethnicity has also shown a similar

pattern of disparity. As one of the most diverse countries in the world, progress in the capture of race and ethnicity data is a key vital step in ensuring that equitable care is provided to all citizens. **HQ**

Reference

- Anand, S.S., S. Yusuf, V. Vuksan, S. Devanesen, K.K. Teo, P.A. Montague et al. 2000. Differences in Risk Factors, Atherosclerosis, and Cardiovascular Disease between Ethnic Groups in Canada: The Study of Health Assessment and Risk in Ethnic Groups (SHARE). *The Lancet* 356(9226): 279–84. doi:10.1016/S0140-6736(00)02502-2.
- Canadian Institute for Health Information (CIHI). 2022. *Race-Based and Indigenous Identity Data Collection and Health Reporting in Canada – Supplementary Report*. Retrieved June 25, 2023. <<https://www.cihi.ca/sites/default/files/document/race-based-and-indigenous-identity-data-supplementary-report-en.pdf>>.
- Churchwell, K., M.S.V. Elkind, R.M. Benjamin, A.P. Carson, E.K. Chang, W. Lawrence et al. 2020. Call to Action: Structural Racism as a Fundamental Driver of Health Disparities: A Presidential Advisory from the American Heart Association. *Circulation* 142(24): e454–68. doi:10.1161/CIR.0000000000000936.
- Graham, G. 2015. Disparities in Cardiovascular Disease Risk in the United States. *Current Cardiology Reviews* 11(3): 238–45. doi:10.2174/1573403x11666141122220003.
- Johnston, J.P. 1994. Academic Approaches to Race-Crime Statistics Do Not Justify Their Collection. *Canadian Journal of Criminology* 36(2): 166–74. doi:10.3138/CJCRIM.36.2.166.
- Pinto, A.D., A. Eissa, T. Kiran, A. Mashford-Pringle, A. Needham and I. Dhalla. 2023. Considerations for Collecting Data on Race and Indigenous Identity during Health Card Renewal across Canadian Jurisdictions. *CMAJ* 195(25): E880–82. doi:10.1503/cmaj.221587.
- Public Health Agency of Canada. 2018, May. *Report from the Canadian Chronic Disease Surveillance System: Heart Disease in Canada, 2018*. Retrieved July 7, 2023. <<https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/diseases-conditions/report-heart-disease-canada-2018/pub1-eng.pdf>>.
- Rana, A., R.J. de Souza, S. Kandasamy, S.A. Lear and S.S. Anand. 2014. Cardiovascular Risk among South Asians Living in Canada: A Systematic Review and Meta-Analysis. *CMAJ Open* 2(3): E183–91. doi:10.9778/cmajo.20130064.
- Rooprai, J., F. Qiu, J. Porter, H. Abdel-Qadir, L.C. Godoy, C.A. Jackevicius et al. 2023. Association of Race and Ethnicity with Obstructive Coronary Artery Disease. *JACC: Advances* 2(1): 100161. doi:10.1016/j.jacadv.2022.100161.
- Rubin-Miller, L., C. Alban, S. Artiga and S. Sullivan. 2020, September 16. COVID-19 Racial Disparities in Testing, Infection, Hospitalization, and Death: Analysis of Epic Patient Data. *KFF*. Retrieved June 26, 2023. <<https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-racial-disparities-testing-infection-hospitalization-death-analysis-epic-patient-data/>>.
- Statistics Canada. 2022, October 26. The Canadian Census: A Rich Portrait of the Country's Religious and Ethnocultural Diversity. Retrieved July 7, 2023. <<https://www150.statcan.gc.ca/n1/daily-quotidien/221026/dq221026b-eng.htm>>.
- Subedi, R., L. Greenberg and M. Turcotte. 2020, October 28. COVID-19 Mortality Rates in Canada's Ethno-Cultural Neighbourhoods [Archived content]. Statistics Canada. Retrieved July 13, 2023. <<https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00079-eng.htm>>.

About the Authors

Javal Sheth, BSc, is a third-year medical student at the University of Toronto in Toronto, ON.

Maneesh Sud, MD, PhD, is a clinician-scientist at the Schulich Heart Program, Sunnybrook Health Sciences Centre, in Toronto, ON.

Dennis Ko, MD, MSc, is a senior core scientist at ICES and a professor of medicine at the University of Toronto in Toronto, ON. He can be reached by e-mail at dennis.ko@ices.on.ca.