



The Invisible Threat of Gastric Cancer to Visible Minorities in Canada

Michelle Wan¹

1. Bachelor of Health Sciences (Honours), McMaster University, wanm21@mcmaster.ca

ABSTRACT

Gastric cancer is the fifth most common cancer worldwide (Ilic & Ilic, 2022), but its burden is often overlooked in countries like Canada, where the overall incidence is low (Pabla et al., 2020). However, visible minorities in Canada, particularly immigrants from regions with high gastric cancer rates, are disproportionately affected by this disease (Pabla et al., 2020). Visible minorities—defined as non-Caucasian individuals, excluding Indigenous peoples—make up a growing proportion of Canada’s population. By 2041, 40% of Canadians are projected to belong to a visible minority (Government of Canada, Statistics Canada, 2022). This article explores the role of *Helicobacter pylori* (*H. pylori*) infection, dietary practices, and barriers to healthcare access in contributing to gastric cancer prevalence among these populations. It also addresses the current knowledge gaps in Canadian healthcare regarding cancer incidence among minorities and discusses the need for improved screening and prevention strategies to mitigate this threat.

Accepted: September 1st, 2025 **Published:** March 1st, 2026

Keywords: Gastric Cancer, Minority, Visible Minorities, Barriers to Healthcare

Epidemiology and Risk Factors

Although the overall incidence of gastric cancer has been declining in Canada, the burden remains significantly higher among immigrants and racial minorities, particularly individuals of African, Caribbean, Latin, Central and South American, and East Asian descent (Pabla et al., 2020). The current body of research lacks a comprehensive investigation into the variations in gastric cancer incidence and mortality across different ethnic groups, with the first study addressing these disparities only published in 2021 (Government of Canada, Statistics Canada, 2021).

H. pylori, one of the most well-established risk factors for gastric cancer, is a bacterium that infects the stomach lining and can cause chronic inflammation, ulcers, and potentially malignant transformations. Epidemiological studies estimate that individuals with persistent *H. pylori* infection have up to a 20-fold increased relative risk of gastric cancer compared with uninfected individuals (Brenner, 2004), with approximately half of the world's population infected with *H. pylori* (Shirani et al., 2023). The range of gastric incidence parallels the range of estimates of the prevalence of *H. pylori* infection, as seen in Table 1.

In Canada, the prevalence of *H. pylori* is estimated at 38%, but this average obscures significant variations by ethnicity and immigration status. Immigrants from high-incidence regions are more likely to carry the infection and are at greater risk of developing gastric cancer (Sutradhar et al., 2018). However, in Ontario, the province with the highest number of immigrants, no methods or programs have been established to detect *H. pylori*, gastric cancer precursors, or early-stage gastric cancer (Sutradhar et al., 2018). This leaves high-risk individuals undiagnosed until the disease has progressed to an advanced stage. Integration of these

screening programs is instrumental to improving the prognosis of gastric cancer patients, as countries like Japan and Korea with national screening programs were able to achieve 60%-70% survival rates, in comparison to 29% in Canada (Huang et al., 2022; Canadian Cancer Society, 2019). Diet is an important contributor to gastric cancer risk. Cultural traditions involving the consumption of smoked, pickled, and heavily salt-preserved foods are strongly associated with increased gastric cancer incidence, as these foods often contain nitrosamines and other carcinogens that damage the gastric mucosa (Tsugane & Sasazuki, 2007). In contrast, higher intake of fresh fruits and vegetables has been shown to be protective against gastric cancer. However, higher rates of food insecurity among visible minority populations may limit access to these protective foods while increasing reliance on inexpensive, shelf-stable, and highly preserved foods, thereby reinforcing dietary patterns associated with gastric carcinogenesis (Morales et al., 2021).

In addition, visible minorities often face significant barriers in accessing timely cancer screenings and treatments. Immigrant and refugee populations, for example, are more likely to be diagnosed at later stages of gastric cancer, when treatment options are limited and less effective. This is partly due to language barriers, lack of healthcare literacy, and cultural stigmas associated with cancer diagnoses (Walker et al., 2022). The limited availability of culturally sensitive healthcare services exacerbates these gaps in cancer care, leading to poorer outcomes for minority patients.

The Knowledge Gap

In Canada, there remains significant data scarcity in the reporting of population health outcomes, particularly concerning cancer incidence and mortality rates by ethnic group. This issue stems from the limited availability of comprehensive data collection on visible minorities (Etowa et al., 2021). Many of these studies addressing these disparities are recent and represent some of the earliest efforts to explore this topic, highlighting the limited prior research in this area. For instance, in 2017, the first population-wide matched cohort study was conducted to assess the burden of gastric cancer among recent immigrants to Ontario compared to non-immigrants (Sutradhar et al., 2018). In 2021, two pivotal studies were published: one that was the first to evaluate cancer incidence and mortality rates across various ethnic groups in Canada (Government of Canada, Statistics Canada, 2021), and another that provided the first comprehensive analysis of gastric carcinoma incidence, highlighting high-risk populations (Cattelan et al., 2021). The fact that these studies have only emerged in the last seven years demonstrates the limited understanding in Canada of how visible minorities are affected by cancer, which points to an urgent need for ongoing research and targeted healthcare interventions.

Addressing Disparities

Improving gastric cancer care for visible minorities in Canada requires a multi-faceted approach, including increased research funding, improved screening, culturally sensitive healthcare, and enhanced data collection. Despite its high mortality rate, gastric cancer remains under-researched and underfunded compared to other cancers, and this raises a significant issue for visible

minorities who are disproportionately affected by the disease (Carter & Nguyen, 2012). Investing in gastric cancer research can bridge the knowledge gap and lead to the development of evidence-based prevention strategies.

Targeted screening programs are crucial for high-risk populations. Effective screening for *H. pylori* and other gastric cancer precursors has shown promising results in high-incidence countries like Japan and Korea, where early detection significantly improves survival rates (Huang et al., 2022). Implementing similar initiatives in Canada to identify and screen high-risk individuals could be transformative, considering that up to 30% of gastric cancer cases might be preventable through risk factor modification (Cattelan et al., 2021).

Finally, culturally and linguistically appropriate healthcare is essential. Many visible minorities face barriers to healthcare, including language difficulties and cultural stigmas surrounding cancer (Etowa et al., 2021). Addressing these barriers through community outreach and partnerships with immigrant organizations can help educate individuals about their gastric cancer risks and the importance of early screening (Kale et al., 2023). Failure to address these disparities raises ethical concerns regarding equity, justice, and the obligation of healthcare systems to provide timely and appropriate preventive care to populations at elevated risk.

Limitations

Despite the strong rationale for targeted gastric cancer screening and prevention, several limitations must be acknowledged. While *H. pylori* eradication programs could potentially reduce the incidence of gastric cancer by up to 50%, implementing such programs in Canada poses challenges (Li et al., 2019). The cost of widespread screening and treatment, along with the logistical difficulties of identifying high-risk individuals, has slowed progress. Furthermore, the healthy immigrant effect—the observation that immigrants tend to be healthier than the general population when they first arrive—may mask the true burden of gastric cancer among these communities (Government of Canada, Statistics Canada, 2021).

Conclusion

As Canada continues to diversify, public health initiatives must focus on the specific cancer risks faced by the growing population of visible minorities. Although gastric cancer may not currently rank among the most commonly diagnosed cancers in Canada, it poses a substantial threat to immigrants from high-incidence regions. Addressing this issue requires a concerted effort from researchers, healthcare providers, and policymakers to close the knowledge gap, implement effective screening programs, and provide culturally sensitive care. All Canadians, regardless of their background, deserve access to life-saving cancer prevention and treatment. Ensuring that the health risks faced by visible minorities are no longer invisible within research, screening, and policy planning is essential to achieving this goal.

REFERENCES

- Brenner, H. (2004). Is *Helicobacter pylori* Infection a Necessary Condition for Noncardia Gastric Cancer? *American Journal of Epidemiology*, 159(3), 252–258. <https://doi.org/10.1093/aje/kwh039>
- Carter, A. J., & Nguyen, C. N. (2012). A comparison of cancer burden and research spending reveals discrepancies in the distribution of research funding. *BMC Public Health*, 12(1). <https://doi.org/10.1186/1471-2458-12-526>
- Cattelan, L., Ghazawi, F. M., Le, M., Lagacé, F., Rahme, E., Zubarev, A., Sasseville, D., Litvinov, I. V., Waschke, K. A., & Netchiporouk, E. (2021). Geographic and Socioeconomic Disparity of Gastric Cancer Patients in Canada. *Current Oncology*, 28(3), 2052–2064. <https://doi.org/10.3390/curroncol28030190>
- Etowa, J., Sano, Y., Hyman, I., Dabone, C., Mbagwu, I., Ghose, B., Osman, M., & Mohamoud, H. (2021). Difficulties accessing health care services during the COVID-19 pandemic in Canada: examining the intersectionality between immigrant status and visible minority status. *International Journal for Equity in Health*, 20(1). <https://doi.org/10.1186/s12939-021-01593-1>
- Government of Canada. (2022, September 8). The Daily — Canada in 2041: A larger, more diverse population with greater differences between regions. www150.statcan.gc.ca. <https://www150.statcan.gc.ca/n1/daily-quotidien/220908/dq220908a-eng.htm>
- Government of Canada, S. C. (2021, August 18). Do cancer incidence and mortality rates differ among ethnicities in Canada? www150.statcan.gc.ca. <https://www150.statcan.gc.ca/n1/pub/82-003-x/2021008/article/00001-eng.htm>
- Huang, R. J., Epplein, M., Hamashima, C., Choi, I. J., Lee, E., Deapen, D., Woo, Y., Tran, T., Shah, S. C., Inadomi, J. M., Greenwald, D. A., & Hwang, J. H. (2022). An Approach to the Primary and Secondary Prevention of Gastric Cancer in the United States. *Clinical Gastroenterology and Hepatology*, 20(10), 2218–2228.e2. <https://doi.org/10.1016/j.cgh.2021.09.039>
- Ilic, M., & Ilic, I. (2022). Epidemiology of stomach cancer. *World Journal of Gastroenterology*, 28(12), 1187–1203.
- Kale, S., Hirani, S., Vardhan, S., Mishra, A., Ghode, D. B., Prasad, R., & Wanjari, M. (2023). Addressing Cancer Disparities Through Community Engagement: Lessons and Best Practices. *Cureus*, 15(8). <https://doi.org/10.7759/cureus.43445>
- Lee, S. (2019, November). Survival statistics for stomach cancer. Canadian Cancer Society. <https://cancer.ca/en/cancer-information/cancer-types/stomach/prognosis-and-survival/survival-statistics>
- Li, W.-Q., Zhang, J.-Y., Ma, J.-L., Li, Z.-X., Zhang, L., Zhang, Y., Guo, Y., Zhou, T., Li, J.-Y., Shen, L., Liu, W.-D., Han, Z.-X., Blot, W. J., Gail, M. H., Pan, K.-F., & You, W.-C. (2019). Effects of *Helicobacter pylori* treatment and vitamin and garlic supplementation on gastric cancer incidence and mortality: follow-up of a randomized intervention trial. *BMJ (Clinical Research Ed.)*, 366, I5016. <https://doi.org/10.1136/bmj.I5016>
- Morales, D. X., Morales, S. A., & Beltran, T. F. (2020). Racial/Ethnic Disparities in Household Food Insecurity During the COVID-19 Pandemic: a Nationally Representative Study. *Journal of Racial and Ethnic Health Disparities*, 8(5). <https://doi.org/10.1007/s40615-020-00892-7>
- Pabla, B. S., Shah, S. C., Corral, J. E., & Morgan, D. R. (2020). Increased Incidence and Mortality of Gastric Cancer in Immigrant Populations from High to Low Regions of Incidence: A Systematic Review and Meta-Analysis. *Clinical Gastroenterology and Hepatology*, 18(2), 347–359.e5. <https://doi.org/10.1016/j.cgh.2019.05.032>
- Shirani, M., Reza Pakzad, Mohammad Hossein Haddadi, Sousan Akrami, Asadi, A., Hossein Kazemian, Moradi, M., Vahab Hassan Kaviar, Abolfazl Rafati Zomorodi, Saeed Khoshnood, Mahnaz Shafieian, Ronia Tavasolian, Mohsen Heidary, & Saki, M. (2023). The global prevalence of gastric cancer in *Helicobacter pylori*-infected individuals: a systematic review and meta-analysis. *BMC Infectious Diseases*, 23(1). <https://doi.org/10.1186/s12879-023-08504-5>

REFERENCES

Sutradhar, R., Asidiyana, N., Lee, F., Coburn, N., Rabeneck, L., & Paszat, L. (2017). Higher risk of gastric cancer among immigrants to Ontario: a population-based matched cohort study with over 2 million individuals. *Gastric Cancer*, 21(4), 588–597. <https://doi.org/10.1007/s10120-017-0790-x>

Tsugane, S., & Sasazuki, S. (2007). Diet and the risk of gastric cancer: review of epidemiological evidence. *Gastric Cancer : Official Journal of the International Gastric Cancer Association and the Japanese Gastric Cancer Association*, 10(2), 75–83. <https://doi.org/10.1007/s10120-007-0420-0>

Walker, P. F., Settgast, A., & DeSilva, M. B. (2022). Cancer Screening in Refugees and Immigrants: A Global Perspective. *The American Journal of Tropical Medicine and Hygiene*, 106(6). <https://doi.org/10.4269/ajtmh.21-0692>

Table 1: Gastric Cancer Incidence and Prevalence of *H. pylori* Infections by Country

Country	Gastric Cancer Incidence (Age-standardized rate per 100,000 persons)	Prevalence Estimate of <i>H. pylori</i> Infections
Canada	4.9	38.0%
Korea	41.8	54.0%
China	22.7	55.8%
Russia	16.0	78.5%
Iran	15.2	59.0%
Poland	8.4	66.6%