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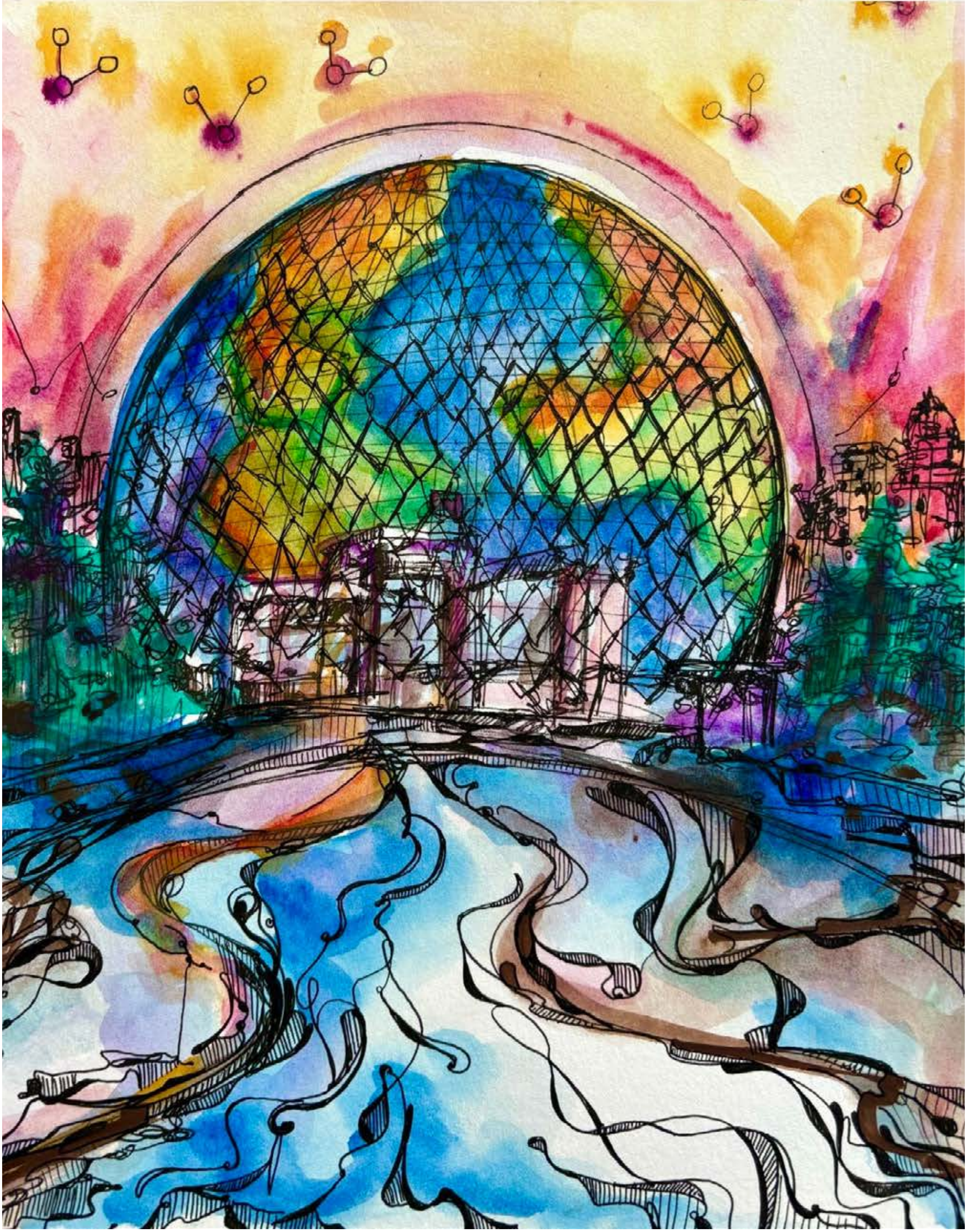

Short Review

Breast Cancer Screening: A Focus on Indigenous Communities of Canada

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Introduction

Breast cancer (BC) is the most common cancer and the second leading cause of cancer-related mortality in Canadian women [1,2]. In 2023, 29,400 cases were diagnosed in Canada, with an estimated 30,500 new cases in 2024, representing one-fourth of all new cancer diagnoses in women [3]. Mammography screening plays a central role in early detection and mortality reduction. Since the introduction of screening programs in Canada, BC-associated mortality has declined significantly [4,5]. However, despite Canada's universal healthcare system and nationwide BC screening programs, disparities remain. Indigenous populations face systemic, structural, and individual barriers to BC screening, diagnosis, and treatment [6–11]. This review explores disparities in BC screening among Canadian Indigenous populations.

Breast Cancer Screening and Secondary Prevention in Canada

All provinces and most territories offer organized BC screening for asymptomatic women aged 50–74 at average risk, typically with mammography every 2–3 years [12]. Specific guidelines vary slightly between regions [13-14].

The suspension of foreign aid and associated policy changes have drawn strong criticism and prompted calls for solidarity from global health experts and international organisations, emphasising the need for a coordinated international response to shared health threats [9-10]. The COVID-19 pandemic Canadian BC screening began in British Columbia in 1988, expanding nationwide by 1998, increasing early detection and mammography use [15]. This was followed by a marked decline in BC mortality, with a 39% reduction observed between 1989 and 2015 [4-5]. Globally, screening reduces BC mortality by around 20-40% [16-17]. In contrast, countries lacking screening infrastructure often see advanced-stage presentation and reduced treatment options. A study from Iran found 45.8% of patients presented at stage III or higher, with 34% unable to receive appropriate treatment [18]. Barriers to screening include lack of awareness, geographic and structural inaccessibility, cultural factors, and systemic discrimination [19–30]. Disparities affect low-income individuals, recent immigrants, racialized minorities, Indigenous peoples, and those in rural areas [31–36].

A Global Perspective

BC incidence and mortality vary globally. Countries with higher Human Development Index report higher incidence but lower mortality due to early detection and treatment access. Incidence rates per 100,000 reach 95.5 in Australia/New Zealand and 89.4 in North America, while South-Central Asia and parts of Africa report rates under 40 [37]. Canada and other high-income countries have seen declining BC mortality through enhanced prevention and treatment strategies [38].

Breast Cancer Rates and Screening in Indigenous Populations of Canada

First Nations (FN), Métis and Inuit are the three groups recognized in the 1982 Canada constitution as original peoples [39]. Over 1.8 million people, 5% of the population, identify as Indigenous, a number that continues to grow [40]. BC incidence in these populations, while historically lower, has been steadily increasing [22,24]. A 2021 Ontario study showed BC rates among FN women approaching those of the general population [41].

Indigenous women participate less in screening programs, with significantly lower retention rates, underscoring the need for targeted outreach and culturally responsive healthcare interventions. For instance, in Alberta, FN women have 24.9% and 12% lower participation and retention rates respectively compared to non-FN women [24]. Indigenous women are also more likely to not be aware of existence or requirements of provincial programs. A survey conducted in five FN communities in New-Brunswick revealed that only 29% of female residents knew about the self-referral program in the province [23].

Indigenous women are more likely to be diagnosed at later stages. FN women in Ontario had higher rates of stage II+ diagnoses. FN women with a comorbidity obtained earlier diagnosis on average while non-screened cancer was associated with later stages. FN women, particularly those who are not accessing the health care system are more likely to be diagnosed with a worse prognosis [42-43]. In Alberta, FN women experienced 2-4 week delays between diagnostic assessments and BC diagnosis compared to non-FN women [24].

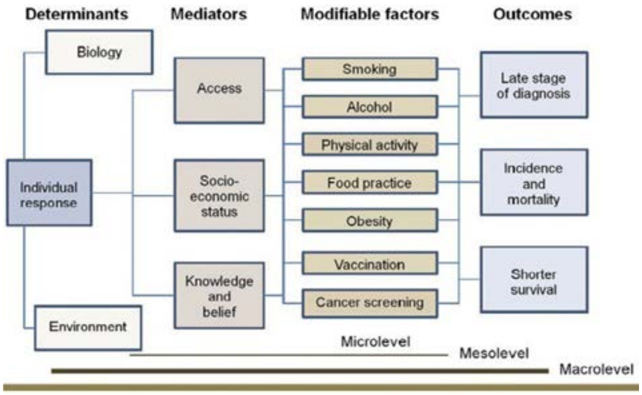
Contributing Factors to Screening Disparities

Using Wilson and Jungner's principles, screening must ensure access, follow-up, and timely action. Indigenous communities often face deficits in each of these areas [23,44].

While all provinces have implemented mobile screening clinics to reach individuals in remote areas, their effectiveness in improving screening rates specifically within Indigenous communities remains unclear [23]. Infrastructure limitations, follow-up delays, and inadequate culturally safe care impede access.

Frameworks such as the one developed by researchers at University of Saskatchewan emphasize how social and environmental determinants impact access to care and screening (Figure 1) [23]. Higher rates of modifiable risk factors (smoking, alcohol use, physical inactivity) in Indigenous populations contribute to poorer outcomes [45–48]. Individual-level barriers include health literacy, mistrust, and cultural beliefs, while system-level issues include transportation, geographic isolation, and long wait times [22,24,49-50]. Structural factors, colonial legacies, racism, and socio-economic inequities, are deeply rooted contributors to these disparities [9,51–52].

Figure 1. Framework exploring determinants of health for cancer screening and prevention in Indigenous populations of Canada. Figure reproduced from Ahmed et al. 2015 with permission (23).



Potential Implementation

Targeted, culturally respectful interventions are needed. These include tailored communication materials, education for Indigenous youth, and community workshops to increase awareness and understanding of BC and screening programs [41]. Developing personal skills to empower individuals to make choices conductive to health was highlighted in the Ottawa Charter for Health Promotion. Ensuring that screening programs are inclusive of Indigenous people involves addressing their unique needs and tailoring outreach efforts to be culturally respectful and relevant. Provider tools should also be updated to improve the coordination of screening and the follow-up of results, to reduce delays observed in diagnosis. Improving access involves bringing services closer to communities and offering logistical or financial support for travel. Collaboration with community partners helps close gaps in access and delivery. Addressing modifiable risk factors through prevention, via smoking cessation, alcohol reduction, and lifestyle education, can can lower cancer incidence [52]. Culturally specific workshops and information sessions can help Indigenous communities adopt healthier lifestyles and reduce their risk of BC as well as other chronic diseases [53]. Central to all interventions is the need for trust-based relationships with Indigenous communities. Involving Indigenous people in program development enhances relevance and uptake. Initiatives like Ontario Health's First Nations, Inuit, Métis, and Urban Indigenous Cancer Strategy model this collaborative approach [47]. Tools such as Cancer Care Ontario's Indigenous Lens and Health Equity Impact Assessment can support equitable screening delivery [54]. Additional measures like public health nurse outreach and home visits may reduce systemic barriers [52].

Conclusion

BC is common in Canada, with provincial screening programs improving early detection and outcomes. However, Indigenous women are increasingly being diagnosed with BC at later stages, partly due to lower screening participation. Addressing disparities in access, education, and risk factors requires culturally appropriate, community-driven solutions. Building trust and engaging Indigenous populations meaningfully, from individuals to policymakers, is essential for improving BC outcomes.

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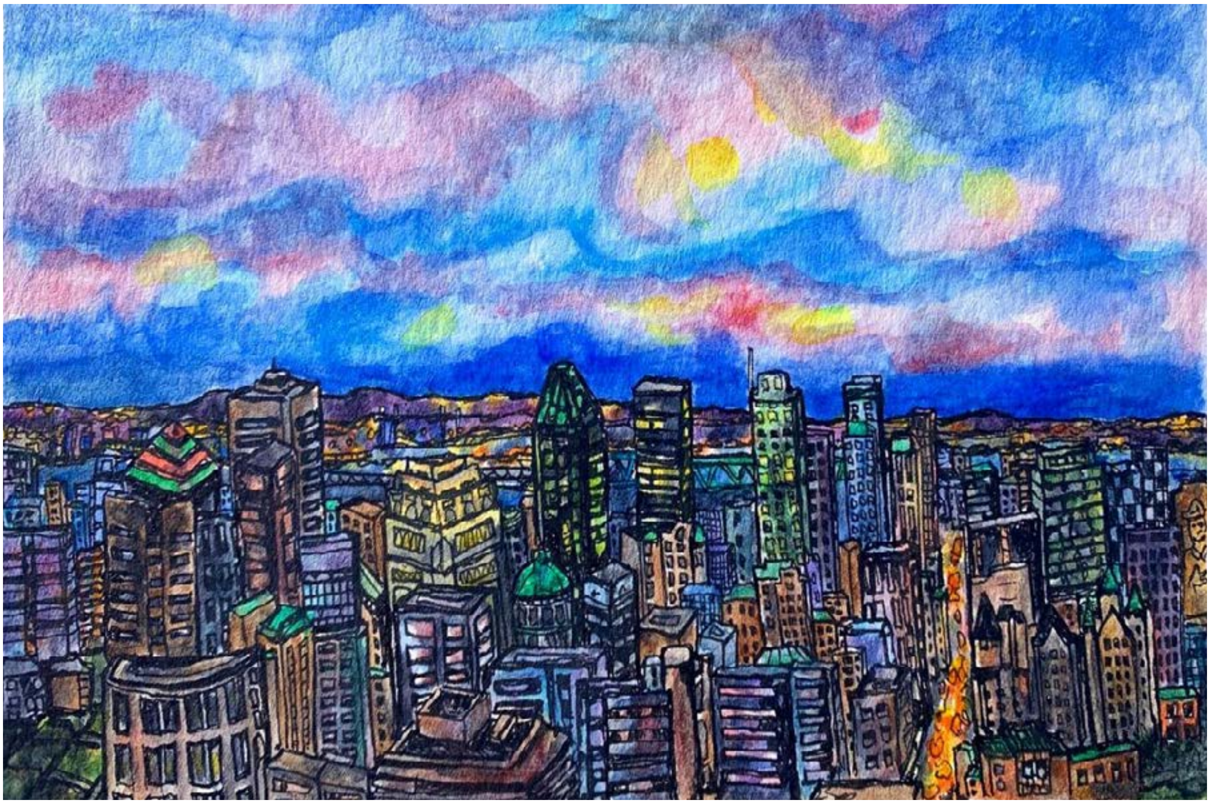

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