

Disparities in Neonatal Health Outcomes Between Indigenous and Non-Indigenous Women in Canada: A Literature Review

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Abstract

Introduction: Despite recent advancements in women's health, particularly in maternal and neonatal healthcare, disparities persist between Indigenous and non-Indigenous women in Canada. Historically, the impact of colonialism and systemic racism in Canada has been profound and disproportionate towards Indigenous women, particularly in maternal healthcare settings. Efforts to diminish Indigenous populations were observed in the late 1800s with the ban on Indigenous midwifery and again in 1928 with the implementation of the Sterilization Act.

Methods: This literature review aims to examine the neonatal health outcomes of Indigenous and non-Indigenous women in Canada, exploring current literature to emphasize the disparities between the two populations. To reflect the current understanding of the topic, using the PubMed and Scopus databases, an extensive literature search was conducted across open academic sources to identify relevant scholarly articles published after 2000.

Results: The findings of the studies consistently found that Indigenous women, particularly Inuit women, experienced higher rates of stillbirth, preterm birth, and infant mortality compared to non-Indigenous women.

Discussion: Risk factors commonly identified as influencing such disparities between Indigenous and non-Indigenous populations include a range of social determinants of health and maternal health variables. The findings of this literature review highlight existing inequities in the maternal healthcare system adversely affecting Indigenous women and can be used to inform policy changes and improve neonatal health outcomes.

Conclusion: There is a significant lack of research on the maternal health care experiences of Indigenous women; thus, this review seeks to bridge these gaps by providing frameworks to understand these disparities while encouraging further research on this critical topic for marginalized Indigenous communities.

Keywords: indigenous women; Canada; neonatal health outcomes; stillbirth; preterm birth; infant mortality; maternal healthcare



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Introduction

Maternal healthcare in Canada has seen notable clinical advancements over the past several decades, including improved prenatal screening, emergency obstetric care, and neonatal support [1]. The term maternal health care refers to medical attention directed towards mothers during the duration of pregnancy, childbirth, and postpartum [2]. In the 1950s, the maternal mortality rate in Canada was approximately 117 per 100 000 live births, and by 2020, this figure had decreased to 11 per 100 000 live births [3]. While a reduction in the rate of maternal mortalities has been observed, the statistics are not representative of Indigenous women and do not accurately

reflect disparities between populations [4]. One predominantly affected group by such disparities are the Native Canadians, referred to as the Indigenous peoples of Canada, encompassing three distinct groups—the First Nations, Métis and Inuit—all of whom have historically faced oppression and violence against colonial powers [5]. First Nations are the original inhabitants of the land, with over 630 communities occupying the Canadian territories south of the Arctic [5, 6]. The Inuit peoples are the inhabitants of the northern regions of Canada, and Inuit Nunangat is the tribe's homeland, encompassing land, water, and ice in the Arctic region [5]. Lastly, Métis peoples are the descendants of mixed European and

Indigenous ancestry, with most living in the Prairie provinces as well as Ontario [5].

Despite medical advancements within the country, stark disparities across demographic groups continue to impact maternal and neonatal health. Stillbirth—a critical indicator of maternal and neonatal health—describes the death of a fetus at or beyond 22 weeks of gestation or weighing 500 grams or more [7]. Alongside stillbirth, other adverse outcomes of inequitable maternal healthcare include preterm birth and infant mortality [8]. Preterm birth is a medical term defining the delivery of an infant prior to 37 completed weeks of gestation, while infant mortality is a term that indicates the death of a baby within a year of its life, encompassing both neonatal and postneonatal mortality [9, 10]. Neonatal mortality describes the phenomenon where the baby dies within the first 28 days of their life, whereas postneonatal mortality refers to the death of the baby within a year, post 28 days of the baby's life [11]. An important factor that plays a role in infant mortality is Sudden Infant Death Syndrome (SIDS), in which a seemingly healthy baby may die within the first year of their life, with no explainable cause [12].

Systemic inequities in accessing healthcare may play an important role in contributing to the existing disparities in birth outcomes [13]. Indigenous mothers in Canada have been shown to receive significantly less prenatal care compared to non-Indigenous mothers, as the proportion of Indigenous mothers with a regular prenatal care provider dropped from 74% in 2015 to 48% in 2020 while the rate for non-Indigenous mothers with a provider increased from 85% in 2015 to 97% in 2020. This statistic demonstrates a growing disparity within healthcare access, as the gap widens over time within Indigenous and non-Indigenous populations [13].

Disparities in maternal and neonatal health among Indigenous women in Canada are not coincidental, but rather deeply rooted in colonial policies that dismantled Indigenous birthing systems [5]. Over the years, these historical events have continued to reinforce systemic and structural barriers affecting Indigenous women's current experiences with maternal healthcare: (1) The ban on Indigenous midwifery imposed in the late 1800s, which heavily restricted community-based birthing, (2) The Alberta Sexual Sterilization Act implemented in 1928 which allowed for coerced sterilization of Indigenous women deemed “unfit” to reproduce, and (3) forced evacuation birth policies in the mid 1900s, which continue today in remote communities, requiring women to give birth far from home, family, and community/cultural support [14–17]. The enduring impact of these colonial policies is reflected in present-day disparities in neonatal health outcomes, as documented by several studies that highlight the stark contrast in experiences between Indigenous and non-Indigenous women [11].

This literature review aims to examine and identify disparities in birth outcomes of Indigenous women,

particularly stillbirth, preterm birth, and infant mortality, through comparison of Indigenous populations and their non-Indigenous counterparts. The findings, in turn, can inform reconciliation-focused policy changes in the Canadian maternal and neonatal healthcare system to help ensure culturally safe care for Indigenous women and facilitate improved birth outcomes.

Methods

This literature review required a search of maternal healthcare experiences of Indigenous women across Canada, completed by June 24, 2025. The search was conducted in PubMed and Scopus using a variety of terms and Boolean operators, including: (“Indigenous women” OR “Aboriginal women” OR “Native Canadian women” OR “First Nations women” OR “Métis women” OR “Inuit women”) AND (“infant mortality” OR “neonatal mortality” OR “postneonatal mortality”); (“Indigenous women” OR “Aboriginal women” OR “Native Canadian women” OR “First Nations women” OR “Métis women” OR “Inuit women”) AND (“stillbirth” OR “fetal loss”); and (“Indigenous women” OR “Aboriginal women” OR “Native Canadian women” OR “First Nations women” OR “Métis women” OR “Inuit women”) AND (“preterm birth” OR “premature birth”). Peer-reviewed articles published between 2000 and 2025, written in English, that addressed Indigenous maternal healthcare in Canada as either broadly or with a focus on specific populations (i.e., First Nations, Inuit, and Métis) were included, whereas studies that combined Indigenous and non-Indigenous outcomes without distinction were excluded. To differentiate Indigenous women and their infants from their non-Indigenous counterparts, the articles used census-based geographic proxies, maternal language-based identification, and Indian Registry based identification. Each reviewer was tasked with identifying five articles, for a total of 15 articles. After screening titles and abstracts for relevance, two articles were excluded, with 13 proceeding to full-text review. Three additional articles were excluded at full-text review, resulting in a total of 10 studies included in the literature review.

Results

Three notable neonatal health outcomes commonly examined in the literature with regards to disparities in maternal healthcare between Indigenous and non-Indigenous populations include still birth, preterm birth, and infant mortality.

Disparities in Stillbirth Rates

In Canada, stillbirth rates are significantly higher in Indigenous populations compared to their non-Indigenous counterparts [8, 18–20]. A Quebec provincial cohort study reported stillbirth rates of 6.8 per 1000 births among Inuit populations and 5.7 per 1000 births among First Nations populations, compared to 3.6 per 1000 among non-

Indigenous populations [18]. In Alberta, First Nations pregnancies showed a stillbirth prevalence of 1.30%, approximately 3 times the 0.46% rate observed in non-First Nations pregnancies [20]. Consistent to other national data, a population-based study of over 426,000 births, including 28,296 births to First Nations women, found that Indigenous women had 70% higher odds of antepartum stillbirth compared to non-Indigenous women, with an adjusted odds ratio (OR) of 1.70 (95% CI 1.47–1.96) [20]. Researchers reported stillbirth rates of 5.5 per 1000 births in First Nations and 5.6 per 1000 births in Inuit communities versus 3.4 per 1,000 in non-Aboriginal communities within Quebec [19]. Similarly, other studies have observed stillbirth rates of 10.4 per 1000 in First Nations and 9.7 in Inuit, compared to 5.6 among non-Indigenous births [8]. Notably, in both studies, the differences were statistically significant before adjustment, and for Inuit communities, the elevated stillbirth rate remained significant even after adjusting for maternal factors [8, 19]. Moreover, stillbirth risks are especially high at term gestation in Indigenous populations [18]. Adjusted odds for stillbirth were highest at term for both Inuit (OR 3.05) and First Nations (OR 2.61) populations, and at term, Inuit mothers had 1.24 and First Nations mothers had 1.04 more stillbirths per 1,000 births than non-Indigenous mothers [18].

Among Indigenous women, researchers identified that pre-existing diabetes was a strong predictor for stillbirth among Indigenous women, with an adjusted odds ratio (OR) around 2.1–3.2 for stillbirth in First Nations pregnancy [20]. Furthermore, findings demonstrate diabetic and hypertensive complications as the most strongly associated cause of stillbirth complications in First Nations women, with an OR of 15, and hypertension doubled the risk (OR ~ 2.3) [18]. However, multivariate analyses conducted in Alberta showed that hypertension and high pre-pregnancy weight with stillbirth lost statistical significance after adjusting for diabetes, suggesting diabetes may be the primary metabolic driving stillbirth risk within these populations [20].

Disparities in Preterm Birth

Several studies have reported significantly higher rates of preterm birth among Indigenous populations compared to non-Indigenous populations in Canada [8, 9, 11, 21]. Additionally, studies have shown that the Inuit populations in particular experience the highest preterm birth rates [8, 9, 11]. One study highlighted that Inuit women had a preterm birth rate of 11.4% (95% CI: 9.7–13.1%), which was significantly higher than the rates among First Nations and Métis women [8].

While Inuit populations show consistent results, studies examining First Nations populations have shown mixed results. Numerous studies have observed higher rates of preterm birth among First Nations populations compared to non-Indigenous populations, with inconsistent statistical

significance across literature [9, 11, 21]. Researchers have noted significantly higher preterm birth rates among Cree and other First Nations communities compared to non-Indigenous communities, with Cree and other First Nations infants in Quebec being 11% more likely to be born preterm [21]. However, when limited to rural areas, this difference between Cree and non-Aboriginal communities was no longer statistically significant [21]. Similarly, other researchers reported that First Nations infants in Quebec are 11% more likely to be born preterm compared to non-Aboriginal infants, with the difference being statistically significant [11]. Conversely, other researchers noted that First Nations infants in Quebec have a lower preterm birth rate on the individual level and the same preterm birth rate on the community level compared to non-Aboriginal infants; however, these differences were not statistically significant [9]. Studies have also shown that adjustment for maternal characteristics impact the statistical significance of results comparing First Nations and non-Indigenous groups [9, 11]. Following the adjustment, the odds of preterm birth in First Nations infants was no longer significantly lower than non-Aboriginal infants [11].

Disparities in Neonatal Mortality

Studies have consistently showcased significantly higher rates of infant and postneonatal mortality for all Indigenous groups across Canada including First Nations (Cree and Naskapi communities), and Inuit populations as compared to non-Indigenous women [11, 19, 22–24]. A population-based study conducted using linked birth and infant death records, found that infant mortality within Inuit populations was 18.1 per 1,000 live births, and among First Nations population, it was 7.3 per 1,000 births, compared to 4.0 per 1,000 in non-Indigenous populations [11]. Specifically, research demonstrates that infant mortality rates were 1.80 times higher in all First Nations infants compared to their non-Indigenous counterparts [11, 19, 24]. Studies have also noted that these disparities were more prominent among Inuit populations, with infant mortality being more than 4.4 times higher than non-Indigenous women [11]. Furthermore, several studies have displayed a significantly elevated postneonatal mortality rate for Indigenous groups, with First Nations infants experiencing 5.7 per 1,000 live births in rural areas with no urban influence and 6.2 in urban areas, compared to 3.7 per 1,000 live births in rural areas and 1.6 in urban areas among non-First Nations [24]. Literature showcased that the major contributing factor of infant and postneonatal mortality in First Nations was SIDS and injury, where the SIDS rate was nine times higher in First Nations infants, with 2.8 per 1000 live births in First Nations, compared to 0.3 in non-Indigenous infants [24].

Studies show First Nations on-reserve with a neonatal mortality rate of 3.7 per 1000 live births and Inuit infants with a rate of 9.3 per 1000 live births as compared to 3.6 per 1000 live births among non-Indigenous infants [19].

While neonatal mortality was elevated in Indigenous populations, the rates showed variation in different Indigenous communities post adjustment of maternal characteristics; First Nations birth on-reserve no longer showed significantly higher neonatal mortality rate compared to non-Indigenous births, and Inuit mothers continued to experience significantly higher neonatal mortality [19, 24].

Studies consistently found a higher likelihood for maternal characteristics of First Nations mothers to include: a) living in poor neighbourhoods or neighbourhoods with more than 50 km in distance to hospitals with obstetricians, b) lower levels of education, c) lower marriage rates, being either divorced, widowed or unmarried, and d) younger mothers [11, 19, 22–24]. While some researchers underscored that geographical isolation did not affect rates of infant mortality in First Nations women, others found that geographical isolation partially attenuated infant mortality rates, becoming non-significant post adjustment [19, 23]. Moreover, research showed that Inuit and First Nations mothers were substantially younger than non-Indigenous mothers, with 22.5% of Inuit mothers and 18.3% of First Nations mothers under the age of 20, compared to 3.4% of non-Aboriginal mothers [11, 19, 22–24].

Discussion

The literature demonstrates that disparities exist in neonatal health outcomes such as stillbirth, preterm birth, and infant mortality for Indigenous women in Canada, with few exceptions after adjusting for maternal characteristics [8, 9, 11, 18–24]. These disparities are reflected through a) elevated rates of stillbirth, which remain significant after statistical adjustment, especially in Inuit populations b) elevated rates of preterm particularly in Inuit populations compared to non-Indigenous populations, and c) consistently higher rates of neonatal and postneonatal mortality for Indigenous women as compared to non-Indigenous women, with prominent elevation in rates for Inuit populations [8, 9, 11, 18–24]. Post-adjustment of maternal characteristics such as age, marital status, education, geographical isolation and rurality, disparities in rates of stillbirth and postneonatal mortality continue in the Indigenous populations, underlying systemic and structural factors within the maternal healthcare system.

The stillbirth rates have been linked to higher rates of pre-existing conditions such as diabetes and hypertension, which are more prevalent among Indigenous women [20]. For instance, diabetes alone was associated with more than double the risk of stillbirth in First Nations pregnancies, while conditions like hypertension and elevated pre-pregnancy weight—prevalent risk factors—lose significance once diabetes is accounted for [20]. Notably, studies found a high proportion of stillbirths occurring at term gestation, which the authors suggest may be

preventable through improved pregnancy and obstetric care for Indigenous women [18].

Additionally, research suggests that the high rates of preterm birth in Inuit populations could partially account for the observed rates in infant mortality [8]. Studies have showcased disparities in neonatal mortality rates to reduce post-adjustment, becoming insignificant in some studies; however, postneonatal mortality remains significantly higher in Indigenous populations as compared to non-Indigenous populations [11, 19, 23]. The decline in neonatal mortality suggests partial mediation of neonatal mortality to preterm birth [11, 23]. In contrast, postneonatal mortality can be explained by preventable causes such as SIDS, infections, and injuries which suggests persistent social and structural inequalities [11, 19, 24].

The social determinants that affect birth outcomes of Indigenous women encompass socioeconomic status, social exclusion and discrimination, stress associated with childbirth evacuation, rurality of residence as well as underutilization or limited access to prenatal care, obstetrics care and other social services [25–27]. While all papers have highlighted various social determinants of health as contributing risk factors to disparities in birth outcome rates between Indigenous and non-Indigenous populations, the disparities are not fully explained by these proximate factors alone, suggesting that systemic and historical factors such as intergenerational trauma and discrimination continue to play a critical role [20, 24–27].

Findings throughout literature have shown that remote and isolated communities often face worse outcomes, though some disparities persist regardless of isolation or urban/rural residence [23]. On-reserve vs. urban First Nations populations may face different risks, with urban disparities persisting or worsening over time despite universal healthcare [23]. Furthermore, risk factors continue to be more often occurring than captured in medical datasets for Indigenous populations [19, 22, 23].

Several limitations were identified within the literature. One notable limitation is the lack of research on certain Indigenous populations in Canada [28]. Compared to Inuit and First Nations populations, there are less studies on disparities in maternal health care between Métis and non-Indigenous populations. In addition, the datasets examined in the literature are outdated, collected between 1991 and 2010 [8, 9, 11, 21]. As a result, the findings from these studies may be less reflective of the current birth outcome rates in Indigenous and non-Indigenous populations. Furthermore, lack of behavioural data (e.g., smoking, substance use, breastfeeding) have been noted as a recurrent limitation, making it hard to control for key confounders [19, 22, 24]. The study also acknowledges the possibility of under-registration of non-viable births among First Nations, potentially underestimating neonatal mortality [19].

Studies identify possible misclassifications of Indigenous women as non-Indigenous women and vice versa, which may understate the health disparities

[9, 11, 21]. Researchers classified Indigenous communities through the following methods: a) use of proxy to identify the baby, cross checking the maternal residential postal code with the 2006 Canadian census enumeration areas where 33% or more of the population self-identified as Indigenous, b) use of maternal mother tongue—Inuktitut—to identify Inuit births, and c) use of both the maternal residential postal code and Indian Register status to identify babies as First Nations population [11, 19, 20, 23, 24]. These identification methods act as limitations as it makes populations heterogeneous and dilutes observed differences [11, 19, 20, 24].

Findings suggest a need for community-level interventions, better housing, safer sleeping environments, and improved postnatal care for Indigenous women. Additionally, interventions involving government action, such as providing funding or resources, could help to mitigate these challenges and improve health outcomes for both Indigenous women and their infants [11]. Long-term health interventions should focus on providing Indigenous women with access to local birthing options and postpartum support, as well as enriching overall knowledge about maternal health.

Conclusion

In conclusion, a consensus within the literature demonstrates that Indigenous women in Canada experience adverse neonatal health outcomes, including higher stillbirth rates, higher preterm birth rates, and higher infant mortality rates, compared to non-Indigenous women. Such disparities can be explained by preventable, socially rooted causes, highlighting the need to address both structural and systemic inequalities. Future studies should aim to leverage contemporary linked longitudinal data with robust Indigenous identification and measured social determinants from pre-pregnancy through birth to better explain neonatal disparities across groups and regions. This approach would strengthen the evidence beyond older, fragmented studies and support evaluation of policy or maternal care reforms.

List of Abbreviations

CI: Confidence Interval

OR: Odds Ratio

SIDS: Sudden Infant Death Syndrome

Conflicts of Interest

The authors declare that they have no conflict of interests.

Ethics Approval and/or Participant Consent

Ethics Approval and/or Participant Consent was not required as a literature review was performed with existing database.

Authors' Contributions

MA: Conducted literature searches, analyzed primary and review articles, and contributed to draft and revision of the manuscript.

MO: Conducted literature searches, analyzed primary and review articles, and contributed to draft and revision of the manuscript.

NR: Conducted literature searches, analyzed primary and review articles, and contributed to draft and revision of the manuscript.

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