

Exploring Black Women's High Maternal Mortality Rates & Naturopathic Medicine's Role

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UPDATE

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Abstract:

Studies have shown that Black women report higher maternal mortality rates (MMRs) compared to any other racial group. Contributing factors that increase racial disparity amongst Black and White MMRs include cardiovascular comorbidities, pregnancy complications, genetic factors, socioeconomic status, racism, and poor healthcare management. While these factors have been identified in multiple research studies, there has not been any inquiry into what actions naturopathic doctors can take within their practice that can aid in decreasing Black women's MMRs. This paper incorporates recommendations given by Black mothers, and outlines how naturopathic doctors have the unique opportunity to decrease MMRs through patient education, informed consent, screening, prevention, and strong relationships built on trust.

Racial disparities in survival rates of pregnant women are a growing concern. Race-based information on MMR provides vital information concerning trends that identify issues surrounding maternal deaths and can help guide policies, practices, and mortality reduction targets.³ In Canada, the MMR is 9 deaths per 100,000 live births.¹ The causes of death are certified by the attending physician or coroner, and the MMR from the Statistics Canada's Vital Statistics System is based on information on death certificates filed from provinces and territories.² However, Canada does not collect race-based information related to MMR. It has not initiated a national inquiry to review maternal deaths (MD), severe morbidity, or near misses, nor set a target for mortality reduction.³ Without race-based data on MMR, healthcare practitioners and policymakers in Canada cannot address racial health inequalities that can lead to MD. As a result, naturopathic doctors (NDs) must rely on patterns and data observed in the United States (US).

In 2020, statistics from the US reported that Black women have a three- to four-fold greater MMR compared to White women.^{4,5} MMRs are also higher in Indigenous women, Latina, and Asian/Pacific Islander women, however, the ratio remains the highest in the non-Hispanic Black demographic.^{6,7} Therefore, it is important to address factors contributing to MDs in the Black population, as well as apply alternative ways to care for women during their pregnancy.

The World Health Organization (WHO) defines maternal mortality (MM) as "The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the

pregnancy or its management but not from accidental or incidental causes."⁸ Current research on MMR examines factors contributing to high mortality rates and preventative measures that can limit the risk of pregnancy-related deaths.

Health Risk Factors and Pregnancy-Related Complications

Cardiovascular disease (CVD) has emerged as the leading cause of MD in North America, as it accounts for 30% of pregnancy-related deaths.^{4,6} CVDs which contribute to MM include coronary heart disease, hypertension, atherosclerosis, and cardiomyopathy.^{5,6,9,10} Risk factors for CVDs are diabetes mellitus, obesity and overweight, hypertension, dyslipidemia, and familial hypercholesterolemia.^{6,9}

In Canada (excluding Quebec), the top causes of MM are ectopic and molar pregnancy, abortive outcome, antepartum hemorrhage, placental abruption, placenta previa, hypertension complicating pregnancy, childbirth, postpartum hemorrhage, major puerperal infection, obstetric embolism, diseases of circulatory system, and other indirect causes.¹ In the United States, the top five causes of MD in all women have been identified as hemorrhage, cardiomyopathy, cardiovascular, and other coronary conditions.⁵ In Canada and the US, hemorrhage is the most common major complication of childbirth.¹¹ It is also the most preventable cause of MM.¹¹ Although there is no race-related data on MMR in Canada, it is important to note that Canadian Black women and men have higher rates of hypertension than their White counterparts.¹² Pre-existing CVD could theoretically be the cause of higher cardiovascular complications in Black MMRs.¹³

In the US, researchers have been better able to extrapolate racial differences in MMR. For instance, MMR is increased with maternal age for all women, but Black women over 40 years of age had the highest risk of dying from pregnancy complications.^{5,14} Cardiomyopathy was the most common cause of death for Black women but ranked 5th among White women in the US.⁵ Also, the timing of death significantly differs between Black and White women in America. 14.9% of Black women's pregnancy-related deaths occurred 43-365 days postpartum, while 10.2% of White women's pregnancy-related deaths occurred during the same period.¹⁵

To avoid adverse postpartum outcomes, it is suggested that women with hypertensive disorders have a blood pressure evaluation no later than 7-10 days after delivery.¹⁶ As primary care practitioners, it is vital that NDs play a role in perinatal care for their patients. Blood pressure monitoring for patients shortly after delivery is a great way to screen for new mothers at risk for maternal mortalities and morbidities.

Women with no pre-existing history of CVD also experience pregnancy-related cardiovascular (CV) complications.¹⁷ CV complications include embolism, amniotic fluid embolism, preeclampsia, eclampsia, peripartum cardiomyopathy, placenta abruption, hemorrhage, blood clots, and reduced placental perfusion.^{6,10,14,15,18,19,20,21}

Preeclampsia and embolism were the third and fifth most common cause of death among Black women in the US, but were not among the top five causes of death for White women.^{5,6,10} The risk factors of preeclampsia are similar to CVD risk factors seen in Black women before pregnancy, such as type I or II diabetes mellitus, chronic hypertension, renal or autoimmune disease.^{6,20} Furthermore, placental abruption in the US is much higher amongst Black women, and it has a five-fold risk for Black women with chronic hypertension, and an eight-fold risk for Black women with preeclampsia.¹⁹ CVD has a huge role in pregnancy complications that can lead to high mortality rates.

Studies have shown that pre-existing cardiovascular conditions can predispose a woman to cardiovascular complications during pregnancy. Women may also develop a new cardiovascular disease during pregnancy because of the complex hormonal and physiological changes during pregnancy.¹³ Iftikar & Biswas found that women may undergo physiological changes as early as 5 weeks into their pregnancy due to the attachment of placenta to the uterine walls.¹³ Therefore, NDs should be monitoring women early into their first trimester to screen and prevent the development of CVDs.

Other non-cardiovascular causes of high MMR amongst Black women in the US are pulmonary edema, renal failure, disseminated intravascular coagulation (DIC), hysterectomy, cesarean deliveries (C-sections), anesthesia complications and blood transfusions.^{11,14,15} Even after adjusting for socio-demographic and comorbidities, Black women are twice as likely to experience these complications leading to maternal mortality and morbidity.¹¹

Caesarian sections are a surgical procedure that can lead to high-risk cardiovascular disorders such as hemorrhage and blood transfusion complications.¹¹ In the US, Black women have the highest rates of C-sections amongst all races and/or ethnic groups.¹¹ The greater ratio accounts for both elective and emergency C-sections.²² Factors which contribute to high C-section rates for Black women in the US include the number of previous pregnancies, obesity, gestational age, suboptimal care or lack of access, patient preference, and hospital-based preferences.²² According to the WHO, "C-sections are only medically necessary once vaginal delivery might pose a risk to the mother or baby - for example due to prolonged labour, foetal distress, or because the baby is presenting in an abnormal position."²³ NDs have the opportunity to inform their patients on the risks of elective C-sections for both the mother and the baby, and in turn prevent future CV complications and deaths.

Genetic Risk Factors

Genetic-focused studies in the US and UK have explored ABO O gene and protein-creatinine ratio in relation to Black women's increased pregnancy-related mortality risk (PRMR). Although the following studies outline different observations, it is important to remind audiences that race and ethnicity are social constructs that can influence an individual's health status, quality of life, education, employment opportunities, housing, environmental conditions, and access to health care.⁵

One medical hypothesis explored how the ABO O gene can potentially be linked to the expression of the von Willebrand factor, a blood glycoprotein involved in the clotting process, and consequently play a role in obstetric hemorrhage.²⁴ It was found that Black women have a higher ABO O gene frequency in comparison to White women, and while hemorrhaging is not the only contributing factor to MMR it is one that progresses very quickly. This study highlighted the need for additional research within North American populations to further quantify and discover links to other conditions contributing to MMRs.

Pre-eclampsia, another condition that lends to MMRs, has historically been diagnosed using proteinuria. The differing protein-creatinine ratio cut offs for Black and non-Black women resulted in 41.4% of Black women being incorrectly classified as non-proteinuric, and went on to not receive additional care to reduce their chances of developing this condition. It also implied that 4% of non-Black and 7% of Black women would have been erroneously classified as proteinuric, leading to unnecessary clinical interventions.²⁵ Fortunately, proteinuria has been dropped as a diagnostic feature by the International Society for the Study of Hypertension in Pregnancy and the American College of Obstetricians and Gynecologists.²⁰ The scientific community has had difficulty defining standards and risk associated with pre-eclampsia because its pathology remains unknown. Pre-eclampsia was previously believed to be on a spectrum with gestational hypertension since both are hypertension related, until a case control study of Black women participants identified

separate and specific groups of serum metabolites associated with each condition.²⁶ This discovery concluded that pre-eclampsia and gestational hypertension have distinct pathways, and are not on a spectrum.²⁶ Distinguishing between these two conditions by looking at specific metabolites has the potential to aid in their diagnosis and management and consequently lowering MMRs.

Socio-economic Factors

Socioeconomic status (SES), race, and ethnicity play an important role in racial disparities in MMR.²⁷ It is hard to separate social identity and the potential risk factors associated with racial bias because of structural discrimination and intersectionality.²⁸ SES includes income, educational status, financial security, social status, and social class.²⁹ In spite of the challenges of delineating individual social factors, it is crucial to understand which of these factors are the greatest contributors to the disparity in MMR.

Studies have shown that racial disparities in MMR persist across all income levels and all education statuses.^{5,6,27} Therefore, high income and education do not protect Black women from maternal mortality (MM). Hence, we should look at other socioeconomic factors that may contribute to the high mortality rate in pregnant and postpartum Black women. The difference in mortality rates between Black and White women are based on other social determinants of health, including institutionalized racism, barriers to accessing healthcare, marital status, social supports, and employment status.^{30,31}

A study conducted by Li et al. found that Black women do not have control over most of the risk factors they are exposed to that lead to MM and morbidity.³⁰ Unmodifiable factors found in this study were that Black women were less likely to be married, employed, and were much younger than White women.³⁰ Other factors include presence or absence of social support, which play a role in the survival rates of both the mother and infant after birth.³² Studies have shown that a lack of perceived social support during pregnancy is associated with negative maternal and infant outcomes.³² Conversely, positive social networks during pregnancy for young and/ or single mothers may reduce the rate of pregnancy-related mortalities.³² Psychological stress and emotional experiences may also be a factor that contributes to high MMR in Black women. Black women are more likely to experience unintended pregnancies and births and report lower levels of happiness during their pregnancy.³¹

A common misconception is that modifiable lifestyle factors such as tobacco and alcohol use are at least partially responsible for postnatal health disparities, however research suggests the opposite. The study by Li et al. found that Black women were actually less likely to engage in modifiable factors like smoking tobacco and using alcohol during pregnancy compared to White women, but Black women still experienced higher mortality rates.³⁰ The researchers emphasized how White women had higher levels of modifiable health-eroding behaviours, but still have better maternal outcomes compared to Black women.³⁰

Currently, studies have shown that Black women are less likely to attend prenatal visits due to difficulty getting time off of work.⁵ Perinatal visits are important for pregnancy health and managing chronic disease. Without timely follow-ups and health management, many underlying diseases and disorders may remain undetected until complications arise.

In Canada, standard prenatal care is publicly funded in all Canadian provinces and territories. Without provincial healthcare coverage, there are costs associated with prenatal care. However, a study carried out in Manitoba, Canada, showed that even within the publicly funded single-payer system, inadequate prenatal care still occurs.³³ Heaman et al. found that Indigenous families, recent immigrants, single parent families, those having less than 9 years of education, or those living in areas with the lowest average household income had the highest rates of inadequate prenatal care.³³ Hence, SES has a major impact on the quality of care amongst pregnant women. Due to the lack of data conducted in Canada regarding race-related disparities, it is imperative that healthcare professionals work together with governments, provinces, and territories to determine key determinants of health that contribute to MMR.³ Not only would race-based data identify key indicators affecting health, but it would also guide new health programs, policies, and initiatives in naturopathic medicine and other medical fields.

Healthcare-Related Factors

Providing adequate prenatal care is imperative to address the issue of high MMRs for Black women. The difference in accessibility of prenatal care for Black women is highlighted by the low numbers of Black women using doula or midwife services, and the following two US studies showcase this problem. In the *Giving Voice to Mothers* study, fewer women of colour had prenatal care by midwives (eg. 59.9%) compared to white women (76.5%); in the Central Hillsborough Healthy Start Program which provided doula services to at-risk pregnant women, of whom 77% were Black, all indicated that having a doula was a good experience for them.^{34,35} While more people are being made aware of the benefits of having a doula and/ or midwife during their pregnancy, for Canadian women these services are not covered by Canadian Medicare, while for American women only some healthcare insurances may cover the costs. Thus reserving these services for women who can afford them, leaving the women who cannot — to miss out on a support that can enhance their pregnancy experience and reduce their MM risk due to the comforting social aspect of having someone to guide them through the experience.

Reduced accessibility to doula and/ or midwifery services aren't the only missing links in prenatal care. Additional barriers exist which negatively impact the level of screening and education in populations who struggle with opioid use. One US cohort study found that with women who had opioid use disorder, Black women were significantly less likely to use any medication for treatment during pregnancy compared to White women.³⁶ Therefore, more Black women did not receive the support necessary to treat their disorder for the betterment

of their and their child's health, thus placing them at higher risk for complications. The study did not provide information regarding whether the women in the study experienced any complications, nor did they identify reasons to explain the discrepancy between the two groups although practitioner bias, access, and other health factors may have played a role.

Compounding the barriers to accessing various forms of prenatal care, is inadequate access to postpartum care. Nearly half of Black MDs that were linked to cardiomyopathy occurred after delivery.⁵ The lack of follow up, especially with monitoring heart function and heart-related issues, can be detrimental to their survival postpartum. One retrospective cohort study done in the US showed that over the course of a year, Black women were less likely to return for a postpartum visit, thus increasing their risk of having a medical condition go undetected.¹⁶ This study focused solely on data, and did not explore potential explanations for its findings; as previously mentioned it could be due to a multitude of factors including lack of access, support, discrimination, income, and more.

Although little research has been conducted on potential associations between racial discrimination and MMRs, some preliminary studies point to the relationship between discrimination, allostatic load, physiological stress response, and pregnancy-related morbidity and mortality.³⁷ A US study done with 96 pregnant Black women measured plasma levels of several cytokines, depressive symptoms, and self-reported discrimination during their second trimester, found increased IL-4 and IL-6 cytokines in 53.1% of women who experienced one or more instances of racial discrimination.³⁸ The most frequently shared experiences of racial discrimination that the women told were while they were in a store or restaurant, getting a job, on the street or another public setting, and from police or in courts.³⁸ A cohort study in the US that consisted of 24 Black pregnant women also told their stories about the racialized pregnancy stigma they experienced, and how it impacted their ability to complete any tasks without scrutiny and how it weighed on their mental health.³⁹ Even though the shared experiences did not involve their healthcare provider, it is important to note that implicit bias exists and contributes to negative health outcomes.

Current Recommendations and the Role of Naturopathic Medicine

Within the naturopathic profession we understand and educate around the need to take preventive measures to ensure optimal health is maintained. Inside the realm of standard medical care this is not prioritized, especially during pregnancy, a time of rapid growth and change. In the *Listening to Women* study, 22 women of color (of whom 36% were Black) were interviewed about their birthing experience and provided recommendations that could be implemented. Recommendations on an individual healthcare provider level included: spending quality time, relationship building and making meaningful connections, individualized person-centered care, and partnership in decision making.⁴⁰ Health-systems level recommendations included continuity of care, racial concordance

with providers, supportive healthcare system structures to meet the needs of women of color, and implicit bias trainings and education to reduce judgment, stereotyping, and discrimination.⁴⁰

Another survey-based study, *Giving Voice to Mothers*, had 2138 participants that had at least one pregnancy between 2010 and 2016. The survey looked at indicators of verbal and physical abuse, autonomy, discrimination, failure to meet professional standards of care, poor rapport with providers, and poor conditions in the health system.³⁴ Results showed that rates of mistreatment for women of colour were consistently higher, which can be linked to the issue of implicit bias in health practitioners.⁴¹ The mistreatment can be coming from an unconscious place, but outwardly influencing the quality of care given. There needs to be focused educational courses that bring awareness to implicit bias, and supply practitioners with the necessary tools to embark on the life-long commitment to consistently practicing awareness in order to provide better care to a constantly diversifying population.⁴²

More research is needed to investigate how 'living while Black' influences Black women's MMR. Hopefully, the Preventing Maternal Death Act of 2018 that allocated 12 million dollars annually to do research in the US, will uncover more information about this inequity over time.⁶ On the other hand, Canada has a longer way to go with allocating time and money to present specific information on Black populations. The 1998 *Safe Motherhood* campaign underlined an important aspect of this data availability discrepancy, and how it may be a result of racial composition. At the time this article was published, it stated there was a 12% Black population in the US and 2% in Canada, 20 years later these percentages have only increased a little over 1% and may skew the evidence that shows the US having a higher Black women MMR.²

In the meantime, there are many things that can be done to improve maternal health today within the naturopathic realm and scope. Since atherosclerosis is among the top five causes of MM in the US and a compilation in Canada, it is important to assess a woman's risk of atherosclerosis while pregnant.¹⁶ NDs can provide optimal adjunctive perinatal care for expectant and new mothers by screening for CVDs early in their first trimester, and performing in-office blood pressure measurements within a week of delivery.^{4,13}

Other protective practices NDs can perform are lipid screening, and educating about cardiovascular health and birthing options. Mszar et al. found that Black women in the US are less likely to report a prior lipid screening or be aware of how their levels may impact their pregnancy compared to White women.⁹ Educating patients on factors that contribute to atherosclerosis such as dyslipidemia, diabetes, cigarette smoking, hypertension, and genetic abnormalities, can allow NDs to provide their patients with effective treatment plans to prevent disease processes from occurring.⁴³ It is also imperative for NDs to talk with their patients about the risks associated with elective C-sections, and the opportunities available to gain more support throughout their pregnancy via low-cost doula services and timely referral to a registered midwife or obstetrician.

At its core, naturopathic medicine is about providing individualized care, and longer appointments allow for the establishment of meaningful relationships with open communication and shared decision making. As outlined by the *Listening to Women* study participants, specific ways to be successful at building these relationships are through asking questions, providing resources, and making patient notes available to reduce transmission of biases.⁴² This can be done by creating a patient portal, exploring ways to mitigate stress with healthy coping mechanisms such as meditation and journaling, and educating on the importance of adherence to a DASH diet to combat hypertension especially in at-risk populations.⁴⁴ While these recommendations are actionable steps naturopathic doctors can take, it is also crucial to recognize that within our current healthcare reality of living within a pandemic there may be new or previously identified factors that can further increase Black women's MMR. Therefore, it is the duty of every healthcare provider to be aware of new information or mitigating factors, and how these may influence the health of our patients. By constructing a more supportive, educative, and non-judgemental space for patients, naturopathic doctors can directly impact Black women's high MMRs and bridge the gaps in accessibility and care. 🌱

GLOSSARY OF TERMS

Black woman

A woman who self-identifies as a person from African or Caribbean descent, and does not self-identify as Hispanic

White woman

A woman who self-identifies as a person from Caucasian descent, and does not self-identify as Hispanic

*Although not defined in the research cited, the terms 'woman' and 'women' likely refer exclusively to cisgender women. More research is needed to understand pregnancy-related mortality rates in people who are transgender and non-binary.

Adapted From:

<https://www.crrf-fcrr.ca/en/resources/glossary-a-terms-en-gb-1> and <https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=DEC&ld=45152>

PRMR

Pregnancy Related Mortality Rates

MMR

Maternal Mortality Rates

MM

Maternal Mortality

MD

Maternal Death

CVD

Cardiovascular disease

About the Authors

Amanda Daniella Garcia (she/her), Canadian College of Naturopathic Medicine Class of 2023, is an advocate for patient-centered care and improving health education. She earned her Bachelor's of Science in Electrical Engineering at Johns Hopkins University and went on to become an educator. It was in the classroom that she discovered her true passion was empowering others to learn more about their own bodies and health. She currently serves as the lead in the working communications group for the Inclusion, Diversity, Equity, and Advocacy Committee at CCNM, and President-Elect for the CCNM chapter of the NMSA.

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