UNDERSTANDING FIRST NATIONS WOMEN'S HEART HEALTH

Linda Diffey, MSc, Lorena Fontaine, PhD and Annette S.H. Schultz, PhD, RN

National Collaborating Centre for Indigenous Health

Centre de collaboration nationale de la santé autochtone

EMERGING PRIORITIES

 This publication was funded by the NCCIH and made possible through a financial contribution from the Public Health Agency of Canada (PHAC). The views expressed herein do not necessarily represent the views of PHAC.

Acknowledgements

The NCCIH uses an external blind review process for documents that are research based, involve literature reviews or knowledge synthesis, or undertake an assessment of knowledge gaps. We would like to acknowledge our reviewers for their generous contributions of time and expertise to this manuscript.

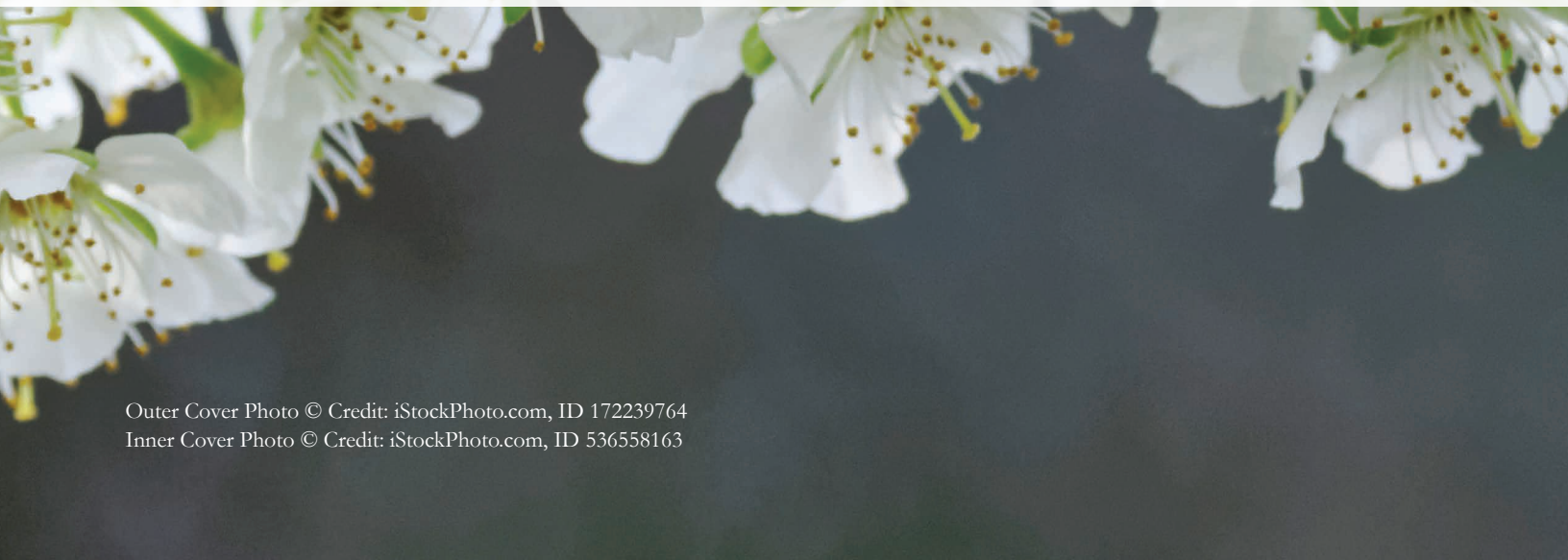
Une version française est également publiée sur le site ccnsa.ca, sous le titre : *Comprendre la santé cardiaque des femmes des Premières Nations.*

Citation: Diffey, L., Fontaine, L. & Schultz, A.H.S. (2019). *Understanding First Nations women's heart health.* Prince George, BC: National Collaborating Centre for Indigenous Health.

For further information or to obtain additional copies, please contact:

The National Collaborating Centre for Indigenous Health (NCCIH)
3333 University Way
Prince George, BC, V2N 4Z9
Tel: 250 960 5250
Fax: 250 960 5644
Email: nccih@unbc.ca
Web: nccih.ca

ISBN (Print): 978-1-77368-219-8
ISBN (Online): 978-1-77368-220-4

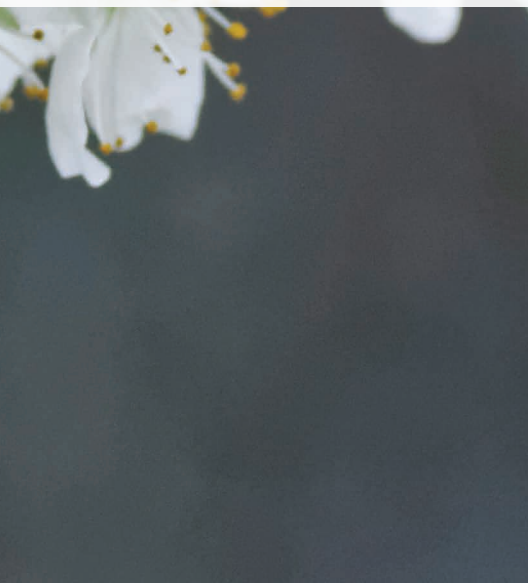


CONTENTS

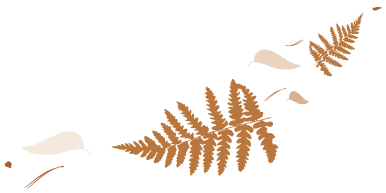
Download publications at
nccih.ca/34/Publication_Search.nccih

Télécharger des publications à
ccnsa.ca/524/Recherche_de_publication.nccih

issuu.com/nccah-ccnsa/stacks



1.0 INTRODUCTION



Compared to the general Canadian population, Indigenous[1] populations experience a disproportionately high burden of chronic disease and associated risk factors across the life course (First Nations Information Governance Centre [FNIGC], 2018; Gracey & King, 2009). These differences are even more pronounced for Indigenous women as they tend to have higher rates of chronic disease and are less likely to report their health as excellent or very good in comparison with Indigenous men (Arriagada, 2016; Bourassa, McKay-McNabb, & Hampton, 2004). Although rates of cardiovascular disease have been declining for most age groups in the general Canadian population, Indigenous populations are experiencing increasing rates of cardiovascular-related illness and death (Reading, 2015).

Among First Nations populations specifically, the results from multiple phases of the *First Nations Regional Health Survey* indicate that First Nations people experience higher rates of heart disease than other Canadians, and that disparities in heart health are particularly pronounced among First Nations women (First Nations Centre, 2005; FNIGC, 2012; Reading et al., 1999). Mortality associated with cardiovascular disease is higher among First Nations women, especially those living on-reserve, when compared to their general Canadian counterparts (Tjepkema, Wilkins, Pennock, & Goedhuis, 2011). Moreover, First Nations women are more likely to report having two or more chronic health conditions, such as heart disease and diabetes, when compared to First Nations men, which further complicates issues of clinical management and health care needs (FNIGC, 2018; Valderas, Starfield, Sibbald, Salisbury, & Roland, 2009).

A 2018 systematic review of the existing research pertaining to cardiovascular health among Indigenous women in Canada identified a number of knowledge gaps (Prince et al., 2018). Specifically, there is a need for more sex-based analyses, comparisons with non-Indigenous women, comprehensive longitudinal data, intervention research, and a better understanding of the role of culture and traditions in the context of heart health (Prince et al., 2018). Typically, studies about cardiovascular disease consider the role of risk factors such as smoking, hypertension, serum cholesterol levels, diabetes, physical inactivity, and stress (Reading et al., 1999). However, to understand the disparities in heart health experienced by First Nations women, the risk factors for cardiovascular disease need to be examined in relation to the historic and ongoing effects of colonialism in Canada.

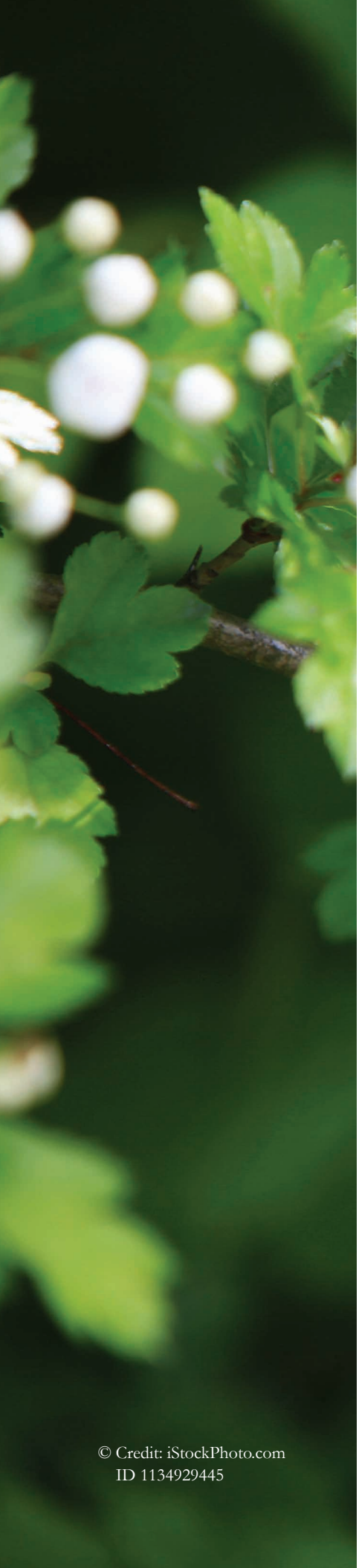
This paper will examine the context of First Nations women's heart health, particularly the role of colonization in the prevalence of and risk factors for heart

[1] The terms "Indigenous" and "Indigenous peoples" are used here to refer to the First Nations, Métis, and Inuit peoples of Canada, as defined in Sections 35 of the Canadian Constitution of 1982; these terms are used when reflected in the literature being cited. For literature cited that is specific to First Nations, Métis, or Inuit peoples, the more specific identifying terms will be used.

diseases, and in diagnosing and treating them. As this is a topic that has not been studied extensively, information has been included from published studies spanning several decades. First, the paper examines the role of colonization as a determinant of First Nation's women's heart health and the intersection with other determinants of health. Second, the burden of heart-related illness among First Nations will be described using data from epidemiological studies. Third, the paper will explore understandings of heart health from the perspectives of First Nations women by drawing from narratives available in two recent qualitative studies. Finally, it will conclude by identifying a number of strategies for closing the gap in First Nations women's heart health, as well as the challenges and barriers that still need to be addressed.

Although rates of cardiovascular disease have been declining for most age groups in the general Canadian population, Indigenous populations are experiencing increasing rates of cardiovascular-related illness and death

(Reading, 2015).



2.0 FIRST NATIONS WOMEN IN CANADA

First Nations women comprise a growing sector of the Canadian population. According to the latest Census data, 5% of the total female population in Canada identified as Indigenous and of this group, 58% or 505,725 reported being First Nations (Statistics Canada, 2016). Between 2006 and 2011, the population growth for First Nations women was 23%, almost five-fold higher than the 5% growth reported for their non-Indigenous counterparts (Arriagada, 2016). It is projected that the total number of First Nations women will grow to between 630,000 to 801,000 by the year 2036 (Arriagada, 2016). The median age of First Nations women is 27.6 years, which is considerably younger than the median age of the non-Indigenous female population (41.5 years). This is due, in part, to higher fertility rates and shorter life expectancy for First Nations women (Arriagada, 2016). Only 6% of First Nations women are over 65 years old, despite an increased growth of 45% in this age group since 2006 (Arriagada, 2016). There are also more First Nations women than men in this age category.

3.0 SETTING THE CONTEXT: COLONIZATION, RACISM AND GENDER

The link between colonization and the health inequities experienced by Indigenous people is well-established (King, Smith, & Gracey, 2009; Reading & Wien, 2013), yet this connection is not often considered when examining specific health issues such as cardiovascular disease. Instead, the factors contributing to Indigenous peoples' heart problems become couched in biomedical discourses around risk factors such as stress, genetics, and individual lifestyle choices without explicating the deeper systemic and structural inequities that shape these determinants (McGibbon, Waldron, & Jackson, 2013). Colonization has directly impacted the ability of First Nations communities to access healthy foods and maintain a physically active lifestyle, and this is known to have contributed to the rise in a number of illnesses, including diabetes and cancers (McGibbon et al., 2013; Medved, Brockmeier, Morach, & Chartier-Courchene, 2013). While this is an important part of the story, it is also essential to consider how other colonization-related factors, such as social exclusion, multiple oppressions, and disruption of the social order have contributed to the rise in heart-related health issues among First Nations women.

© Credit: iStockPhoto.com, ID 1061530302

Through its many mechanisms, colonialism privileges Euro-Western ideologies, values, and worldviews and imposes these on Indigenous peoples. The effect is profound, with a complex of material and social disadvantages that continue to be detrimental to health and well-being

(King et al., 2009; McGibbon et al., 2013; Reading & Wien, 2013).

Through its many mechanisms, colonialism privileges Euro-Western ideologies, values, and worldviews and imposes these on Indigenous peoples. The effect is profound, with a complexity of material and social disadvantages that continue to be detrimental to health and well-being (King et al., 2009; McGibbon et al., 2013; Reading & Wien, 2013). For example, one study found that First Nations individuals who attended residential schools had much higher rates of diagnosis for heart disease (8.3%) and hypertension (23.0%) compared to those who had not attended these schools (4.0% and 13.0% respectively) (FNIGC, 2007). Intergenerational trauma, collective grief, and loss related to historic and ongoing colonization of Indigenous peoples has inscribed deep physical, psychological, and spiritual wounds, and cardiovascular disease is one of the resulting health impacts (McGibbon et al., 2013).

Racism is a characteristic of colonial oppression that has fueled the disenfranchisement, assimilation, and genocide of Indigenous peoples (Czyzewski, 2011; Reading & Wien, 2013). It manifests in a range of forms, from interpersonal to systemic, and produces a high degree of chronic stress among racialized populations (McGibbon et al., 2013; Reading & Wien, 2013). Despite being a powerful predictor of health and social outcomes, the relationship between racism-related stress and cardiovascular disease remains largely unexamined and unaddressed in clinical practice guidelines or health policy (McGibbon et al., 2013). McGibbon and colleagues (2013) argue that the intergenerational trauma of colonization, coupled with the experience of ongoing, everyday racism creates an enduring burden of stress that is sufficient to overtax the body's physiological stress-handling systems and cause significant cardiovascular disease, even in the absence of other risk factors. Further, colonization has interrupted the connection to cultural identities and spiritual practices, such as participation in ceremonies and using traditional healing practices, that can help

alleviate stress and promote heart health (Medved et al., 2013; Walters, 2002).

The situation is further complicated once the interaction between gender and colonialism is factored in. As colonization disrupted traditional community structures and relationships, it also introduced a more patriarchal social order that stripped women of their identities and positions of influence (Medved et al., 2013; Walters, 2002). Women, particularly older women, traditionally played an important role in advising younger community members and were viewed as role models and authorities (Dickson, 2000). The change in gender balance and gender-based responsibilities that resulted from colonialism had consequences for First Nations women's health, as well as that of families and communities (Medved et al., 2013). Like racism, sexism operates through external power structures to create and perpetuate the structural inequities that influence health status (Bourassa et al., 2004). The dynamic process of racism, sexism, and colonialism intersect and work synergistically, resulting in First Nations women living within multiple oppressions that have material consequences for their health and well-being (Bourassa et al., 2004).

It is against this background that the rise in heart-related illnesses among First Nations women must be examined. Focusing solely on lifestyle factors without a deeper exploration of the "cause of the causes" is not only outdated, but also ethically unsound given that the relationship between colonization and health inequities has been well-established (McGibbon et al., 2013).

The dynamic process of racism, sexism, and colonialism intersect and work synergistically, resulting in First Nations women living within multiple oppressions that have material consequences for their health and well-being

(Bourassa et al., 2004).

4.0 BURDEN OF HEART-RELATED ILLNESS AMONG FIRST NATIONS WOMEN

Diseases related to the heart comprise a broad range of conditions, including those involving the heart and circulatory system, stroke-related illnesses, and issues with the rhythm of the heart. The following is a summary of the current state of knowledge about these categories of heart-related illnesses, the underlying risk factors, and their diagnosis and treatment among First Nations women in Canada. As this is a subject area that has received little attention to date, this section is informed by studies spanning several decades.

Cardiovascular disease

Cardiovascular diseases (CVD), or diseases of the circulatory system, are a heterogeneous group of diseases of the heart and blood vessels (Reading et al., 1999). This term is typically used to describe conditions involving narrowed or blocked blood vessels that can lead to chest pain (angina) or a heart attack (Mayo Clinic, 2019a).

Among the studies that report on CVD among First Nations women, the prevalence of heart disease ranged from 4.2% (FNIGC, 2012) to as high as 54% among women with diabetes (Montour, Macaulay, & Adelson, 1989). In two studies, the prevalence of CVD among First Nations women was found to be significantly lower than among First Nations men (Bombak, 2010; FNIGC, 2012). However, Montour, Macaulay, and Adelson (1989) found that among First Nations individuals with diabetes, the prevalence was higher among women than men. With respect to the prevalence of heart disease between First Nations women and women in the general population, MacMillan et al. (2003) found no significant difference, while the 2002-2003 *First Nations Regional Longitudinal Health Survey* reported higher rates among First Nations

women (First Nations Centre, 2005). Statistics Canada (n.d.) data indicate that the rate of high blood pressure, heart disease, and effects of stroke among First Nations women was 17.8% during the 2011 to 2014 time period, or 2.5% higher than the rate among the total Canadian female population. In one study, the risk of dying from CVD was found to be 76% higher for First Nations women when compared to non-Indigenous women (Tjepkema, Wilkins, Urb, Goedhuis, & Pennock, 2012).

Cerebrovascular Disease

Cerebrovascular disease (CBVD) refers to diseases that affect the blood vessels of the brain and cerebral circulation, such as stroke. First Nations women were found to have higher rates of CBVD when compared to their non-Indigenous counterparts (Mao, 1992; Tjepkema, Wilkins, Senécal, Guimond, & Penney, 2009). Prevalence of CBVD was found to be higher among First Nations individuals with diabetes (Montour et al., 1989; Tjepkema et al., 2011). By contrast, FNIGC (2012) reported lower prevalence of the effects of stroke among women (1.5%) when compared to men (2.5%).

Arrhythmia

Arrhythmia refers to any change in the normal sequence of electrical impulses in the heart, which then result in the heart beating too fast, too slow, or erratically (Heart and Stroke Foundation of Canada, 2018). To date, there has been little published research on the prevalence of heart rhythm disorders among First Nations women. A study conducted with a Gitxsan community in northern BC found that more women than men carried a genetic mutation associated with the rhythm disorder long QT syndrome, a heart rhythm condition that can cause rapid, erratic heartbeats (Arbour et al., 2008; Mayo Clinic, 2019b). As well, among James Bay Cree, Del Gobbo et al. (2012) found that women had a lower prevalence of premature ventricular contractions than men.

5.0 RISK FACTORS ASSOCIATED WITH CARDIOVASCULAR DISEASE

In addition to examining specific conditions, the literature pertaining to First Nations heart health also discusses two main categories of biological risk factors that are associated with cardiovascular disease: hypertension and dyslipidemia.

Hypertension

Prevalence rates of high blood pressure, or hypertension, among First Nations women were reported in numerous studies. In most studies, hypertension is defined as a systolic blood pressure ≥ 140 mm Hg or a diastolic blood pressure of ≥ 90 mm Hg (Prince et al., 2018). Reported rates of hypertension ranged from 2.2% among a sample of pregnant First Nations women (Oliveira et al., 2013) to 75% among First Nations women with diabetes (Montour et al., 1989). Prevalence of hypertension has been reported to increase with age (Dai et al., 2009). In comparison to non-Indigenous women, First Nations women were found to have a significantly higher prevalence of hypertension (Dai et al., 2009; First Nations Centre, 2005; MacMillan et al., 2003; Statistics Canada, n.d.).

Comparisons of hypertension prevalence between First Nations men and women have yielded conflicting results. Some studies have reported no significant difference in the prevalence between the sexes (Bombak, 2010; Riediger, Lix, Lukianchuk, & Bruce, 2014), while others have shown lower rates among First Nations women (Foulds, Bredin, & Warburton, 2012; Oster, Shade, Strong, & Toth, 2010; Oster, Virani, Strong, Shade, & Toth, 2009). McIntyre and Shah (1986) found that the prevalence of hypertension was lower in First Nations women when compared to men aged 15 to 64 years, but after age 65 more women were hypertensive. In a repeated cross-sectional study in Manitoba, no difference was found in the crude prevalence of hypertension between First Nations men and women in 2002-2003; however, in 2011-2012, First Nations women had half the risk of developing hypertension when compared to First Nations men (Riediger, Lukianchuk, & Bruce, 2015).

Only two studies have reported on hypertension-related conditions occurring during pregnancy among First Nations women. Brennand, Dannembaum, and Willows (2005) found that the rates of pregnancy-induced hypertension and pre-eclampsia were 3.2% and 6.5% respectively among a sample of James Bay Cree women. In a study conducted in an Ontario First Nation, Oliveira and colleagues (2013) reported that 3.3% of the women had experienced pregnancy-induced hypertension.

Dyslipidemia

Dyslipidemia, or abnormal levels of fat (lipids) in the blood, is another risk factor that is commonly reported in studies related to cardiovascular disease. These include elevated total cholesterol, elevated low-density lipoprotein cholesterol, or low levels of high-density lipoprotein cholesterol (Prince et al., 2018). Prevalence of dyslipidemia was reported to be higher among First Nations women than among non-Indigenous women (Barr & Kuhnlein, 1985; Bruce, Riediger, Zacharias, & Young, 2010). As with hypertension, the rates between men and women were not consistent among published research. Some studies reported no significant difference in elevated cholesterol between First Nations men and women (Bombak, 2010; Foulds et al., 2012), while others found women to have significantly higher prevalence (Delisle, Dsilets, Vargas, & Garrel, 2008; Riediger et al., 2015) or lower prevalence (Oster et al., 2009; Oster et al. 2010) than men. Two studies examined the pathophysiological factors underlying dyslipidemia and cardiovascular risk. Riediger, Bruce, and Young (2010) found that more First Nations women (60%) than men (35%) had high apolipoprotein A1 values, a marker associated with higher cardiovascular risk. Hegele and colleague's (1997) study with a First Nations community in northern Ontario found that a genetic variation in the C/C genotype of APOC3 position -455 was associated with hypertriglyceridemia for both men and women.

6.0 DIAGNOSIS AND TREATMENT

Access to timely diagnostic and acute care services can be particularly challenging for First Nations women residing in rural and remote regions. Cardiac services are generally offered in large urban hospitals, thus requiring patients to leave their communities and support networks in order to gain access to specialists and specialized facilities for diagnosis and treatment (Canadian Institute for Health Information [CIHI], 2013; National Collaborating Centre for Aboriginal Health, 2011).

While there are no published studies with respect to methods of diagnosing cardiovascular disease among First Nations women in Canada, there is some limited data on treatment of cardiovascular disease. Because ethnicity is not recorded consistently in hospital records, the Canadian Institute for Health Information [CIHI] (2013) used an area-based approach to identify areas with a relatively high proportion of self-identified First Nations residents. Women in these areas were more likely to be admitted to acute care hospitals for heart attack and to travel longer distances for cardiac care than women residing in areas with a low proportion of self-identified Indigenous residents (CIHI, 2013) Women in regions with high proportions of First Nations residents also had lower rates of coronary angiography (46%) and revascularization procedures (31%) compared to their counterparts in regions with a low percentage of Indigenous people (55% and 39% respectively; Wei-Randall, Davidson, Jin, Mathur, & Oliver, 2013).

7.0 FIRST NATIONS WOMEN'S PERSPECTIVES OF HEART HEALTH

How First Nations women view their heart and heart health is shaped by a number of factors, including traditional views of health, colonialism, relationships, and the roles they play in their families and communities. This perspective contrasts with the dominant Euro-Western view that defines cardiovascular disease solely in biomedical terms and aims to localize sickness within individual bodies (McGibbon et al., 2013; Medved et al., 2013). As a result, research has largely focused on health disparities and inequities, while ignoring how Indigenous women understand themselves in the context of their lives, worldviews, and relationships (Fontaine, Wood, Forbes, & Schultz, 2019 ; Medved et al., 2013). Privileging of Euro-Western knowledge in the study of Indigenous women's heart health perpetuates the dynamics of colonial oppression through the silencing of deep historical truths and traditional knowledge (Fontaine et al., 2019). Understanding heart health among First Nations women therefore requires the active disruption of dominant narratives and the privileging of First Nations women's narratives and voices.

In this section, heart health will be examined with knowledge arising from the stories of First Nations women. Storytelling is an integral part of the healing process as it supports the process of making sense of momentous life events such as illness (Charon, 2006). First Nations women's stories therefore provide a comprehensive picture of how they understand health, healing, and their lives within the complexity of their social and cultural contexts (Medved et al., 2013). The stories that inform this section originate from two recent studies that gathered First Nations women's stories of their heart and heart health (Fontaine et al., 2019; Medved et al., 2013).

Traditional views of health and the heart

Traditionally, health was viewed holistically and considered the physical, emotional, intellectual, and spiritual dimensions of health within the context of inter-relationships between family, community, and the land (Earle, 2011). For many Indigenous peoples, illness is thought to reflect imbalances within oneself or in relation to others in the community (Henderson, 2000). Thus, balance in these relationships is essential for health and well-being, including caring for the heart (Fontaine et al., 2019). Language provides insight into how specific First Nations peoples and cultures view the heart. For example, in the Swampy Cree dialect of Manitoba, *mite achimowin* translates as "heart talk", and the teachings around this speak to the importance of living a holistic way of life that supports ones' physical, emotional, and spiritual needs and their connections with the family, community, land, and Creator (Fontaine et al., 2019).

Colonization and heart disease

Cardiovascular disease is relatively new to most Indigenous communities and has been referred to as "white man's sickness" (Garro, 1988, p. 613). Colonization disrupted Indigenous peoples' connections with each other and the land, resulting in a movement away from traditionally active lifestyles that contributed to maintaining good heart health (Fontaine et al., 2019). Interferences with diets, such as the introduction and reliance on processed foods, are rooted in colonialism and viewed as being detrimental to heart health in First Nations communities (Fontaine et al., 2019; Medved et al., 2013). Mechanisms of assimilation fractured relationships among the generations through the loss of family structures, control and self-determination, and erosion of languages and the ability to communicate with older generations (Fontaine et al., 2019; Medved et al., 2013). As Fontaine and colleagues (2019) note, the multiple, collective traumas associated with colonization have created conditions of loneliness and stress that have negatively affected heart health in physical, spiritual, and emotional ways.

Colonization has also resulted in health not being viewed in a holistic manner (Fontaine et al., 2019). Disruptions to traditional approaches to health and healing become apparent when examining how First Nations women report dealing with their heart issues. Because heart disease is constructed within a Western biomedical worldview, Medved et

al. (2013) found that traditional approaches to health do not fit with First Nations women's understanding of cardiac disease. Among the First Nations women they talked to, few engaged with healing approaches outside of Western medicine, with many expressing a high degree of confidence in the efficacy of pharmaceuticals (Medved et al., 2013). Nevertheless, the women held great respect for traditional spiritual practices, with many choosing not to participate in them as their lifestyle did not afford them the time, energy, and perseverance needed to realize the benefits to their heart health (Medved et al., 2013).

Heart health and the reclamation of traditional roles

Despite the devastating effects that colonization has had on traditional ways of knowing, being, and doing, First Nations women's stories speak to the many aspects of this relational worldview that have not been lost. For example, women viewed the heart as being passed to them from the Creator through their parents, and that the beating of their heart continues to live on through their children and grandchildren (Fontaine et al., 2019). They also spoke of the drum being the heartbeat for the community and nation, and that this heart teaching is more important to convey to the younger generations than teachings about the physical heart (Fontaine et al., 2019). Even when speaking of physical problems with their hearts, the women in Medved et al.'s (2013) study would situate their experiences in the context of their family's history of illness; thus, their own heart problems are understood through this connection to ancestors rather than being localized to their individual lives.

In addition to understanding their heart issues in the context of their intergenerational relationships, First Nations women also saw

... women viewed the heart as being passed to them from the Creator through their parents, and that the beating of their heart continues to live on through their children and grandchildren

(Fontaine et al., 2019).

these connections as being an important source of holistic healing. Engaging with children and grandchildren created opportunities to become more physically active, to connect with the land, and to pass on knowledge about healthy ways of living (Fontaine et al., 2019). Connecting to younger generations was a way for the heart to be filled; when these connections are lost, the heart "dies in a lot of ways" without the joy that accompanies good relationships (Fontaine et al., 2019, p. 7).

The importance placed on intergenerational relationships was also reflected in how First Nations women viewed their roles and responsibilities. Medved et al. (2013) found that First Nations women navigate very demanding and hectic lives that revolve around caring for their families and communities without much external support. While this high level of responsibility can be stressful, it can also be a source of meaning and satisfaction as the women saw their ability to take on this burden as a sign of their strength and resilience (Medved et al., 2013). Bearing the responsibility for so many others, the women expressed that they did not have the time to have heart problems (Medved et al., 2013). Thus, the stories of First Nations women depict a way of living that places the focus on the needs of others over their own heart issues.

Reframing non-compliance discourses

Focusing primarily on the needs of others has implications for how First Nations women might approach the management of their heart health. Without looking at women's lives in their relational context, their approach may be misunderstood as disinterest, denial, or non-compliance. Medved et al. (2013) found that although First Nations women are very conscious of their heart issues, these did not figure prominently in their stories. Rather, heart problems were viewed as a personal issue and just one more difficulty in life to not be overly concerned about nor burden others about (Medved et al., 2013).

© Credit: iStockPhoto.com, ID 905858694

The lived experience of colonization, and specifically residential schools, was significant in shaping First Nations women's views on lifestyle recommendations such as diet management, increased exercise, and smoking cessation.

While considerable faith was placed on the efficacy of medication to manage heart issues, First Nations women expressed little interest in learning about their prescribed drugs beyond how to take them (Medved et al., 2013). Medved et al. (2013) found that some First Nations women perceived the details of medical management as being too complicated when you are unfamiliar with the terminology, and that understanding it was unnecessary for the treatment to be effective. Additionally, one participant in Fontaine et al. (2019) explained that in residential school, children were taught that health should be left to health care professionals such as doctors and nurses.

The lived experience of colonization, and specifically residential schools, was significant in shaping First Nations women's views on lifestyle recommendations such as diet management, increased exercise, and smoking cessation. On a practical level, many women found these recommendations to be unreasonable in the face of their economic realities of high unemployment, poverty, and food insecurity (Medved et al., 2013). First Nations women expressed ambivalence, even hostility, in response to health care practitioners' attempts to motivate them to adopt these regimens as they were perceived as yet another form of external control being imposed on their lives (Medved et al., 2013).

For some of the women, heart problems and their management called to mind the types of control imposed at residential schools and the broader processes of colonization that were intended to assimilate First Nations people (Medved et al., 2013). Moreover, resisting the imposition of western medical rules (even if the health care workers were themselves Indigenous) was a way the women could reclaim control and choice over their lives (Medved et al., 2013).

It is apparent from research that has been conducted with First Nations women that strategies for health promotion must address the unique histories and social contexts of their lives.

8.0 SUPPORTING HEART HEALTH WITH FIRST NATIONS WOMEN

Programs to promote heart health are often designed around the needs of mainstream populations or apply a model of intervention that is derived from research with men (Ziabakhsh, Pederson, Prodan-Bhalla, Middagh, & Jinkerson-Brass, 2016). However, the stories of First Nations women make it clear that health promotion that is based in a biomedical worldview and emphasizes prescriptive lifestyle regimens are likely to be ineffective, but also have the potential to recreate and perpetuate colonial oppression. Additionally, health care professionals often do not possess a sufficient understanding of the social and historical contexts of First Nations women's lives, and this limits their ability to provide appropriate support.

It is apparent from research that has been conducted with First Nations women that strategies for health promotion must address the unique histories and social contexts of their lives. The following are seven key principles that have emerged from this body of research concerning how heart health intervention strategies could be designed to better meet their needs.

A relational approach to heart health

First Nations women view their hearts and heart problems in terms of their relationship to their ancestors, families, and communities (Fontaine et al., 2019; Medved et al., 2013). Approaches to heart health healing that incorporate this relational view may be favoured by First Nations women. A communal program that creates opportunities for discussion and mutual support can be seen as a more culturally relevant approach than the typical top-down approach that may be perceived as another colonialist form of control in women's lives (Medved et al., 2013). Talking circles are one way that relationships can be fostered while providing opportunities for peer support that empower First Nations women through both the sharing and receiving of wisdom (Ziabakhsh et al., 2016). Storytelling in sharing circles honours traditional forms of teaching and learning, which are experienced very differently than receiving top-down recommendations from an expert (Ziabakhsh et al., 2016). Through the creation of a sacred and safe space, talking circles can promote connection to one's spirituality, an aspect that interventions grounded in a biomedical world do not typically consider (Ziabakhsh et al., 2016).

Honouring the traditional roles of First Nations women

Traditionally, First Nations women occupied positions of influence within their communities. In particular, older women played an important role as authorities and role models (Dickson, 2000). Reclaiming these roles by passing on their

knowledge about healthy ways of living to the younger generations is an important way that women care for their own hearts (Fontaine et al., 2019). Directing health promotion efforts towards female leaders and Elders in a community not only supports women in these important roles to improve their personal heart health, but can also have broader impacts through the guiding roles they take on with family and community members (Ziabakhsh et al., 2016).

Gender-responsive health promotion

Health promotion that is gender-responsive not only means that it is directed specifically to women, but also that attention is paid to the social, economic, cultural, and political contexts of their lives (Reid, Pederson, & Dupéré, 2012). Situating health promotion programs within a women's-only setting creates a safe space for sharing experiences and discussing sensitive issues (Ziabakhsh et al., 2016). Interventions also need to take into account the often demanding and hectic lives of First Nations women. This can be done through flexible program design that allows women to be self-determining in setting realistic and achievable goals, to work at their own pace, and to make adaptations as needed (Ziabakhsh et al., 2016).

Trauma-informed approach

In the context of colonial oppression, the recommendations by health professionals to adopt heart healthy lifestyle changes can easily be perceived as the imposition of external control (Medved et al., 2013). Trauma-informed care recognizes the psychological, social, physical, and spiritual impacts that trauma has on individuals, and is guided by principles of safety, trust, compassion, collaboration, choice, and empowerment (Manitoba Trauma Informed Education & Resource Centre, 2019). This can involve taking a non-prescriptive and non-didactic approach to knowledge sharing (Ziabakhsh et al., 2016). It also requires critical reflection on how commonplace practices such as weight check-ins, fear-based messaging, and smoking cessation discussions can be perceived as punitive even if that is not the intended purpose. For example, in Ziabakhsh and colleagues' (2016) study of a culturally-relevant health promotion program for First Nations women, changes were made to the program's educational component to shift away from smoking cessation and focus instead on how tobacco can be used ceremonially.

Addressing power imbalances

Closely related to working in a trauma-informed manner is the need to address power imbalances within clinical relationships. Ziabakhsh et al. (2016) found that the First Nations women appreciated interventions where the nurse practitioners approached their group as women or sisters rather than as medical staff, and that they shared power with the group rather than powering over the participants.

Centering the Indigenous worldview

Making the shift away from the biomedical perspective and towards one rooted in Indigenous ways of knowing involves the adoption of a holistic perspective of heart health. Interventions would thus need to support First Nations women's physical, emotional, and spiritual needs and their connections to family, community, land and the Creator (Fontaine et al., 2019; Ziabakhsh et al., 2016). This may include the

incorporation of ceremony and processes, such as sharing circles, feasts, or presentation of health promotion messages through storytelling (Ziabakhsh et al., 2016).

Emphasis on self-care

One of the challenges facing First Nations women in terms of managing their heart health is finding balance among the many family and community responsibilities they are juggling (Fontaine et al., 2019; Medved et al., 2013). Interventions that provide support with the everyday stressors of life and promote positive messages about taking care of oneself can play an important role in women's heart health (Medved et al., 2013; Ziabakhsh et al., 2016). Because women often focus more on the needs of others, there is value in education about self-care, provided this is done in a manner that is non-prescriptive and allows for flexibility.

Other considerations for supporting First Nations Women's heart health

In addition to incorporating these principles into health promotion strategies, there are also significant barriers that need to be addressed in order to improve the status of heart health among First Nations women. One critical area is the education of health professionals, as they have little opportunity to learn about how colonialism influences health and health practice (McGibbon et al., 2013). Education in this area needs to be grounded in an anti-racist and anti-oppressive examination of colonial-based power and consider how this creates and maintains the racial hierarchies that drive health inequities (McGibbon et al., 2013). The second, and more pervasive barrier to be addressed, is the structural and systemic racism that underlies heart health disparities among First Nations women. McGibbon and colleagues (2013) argue that health professionals and policy makers have an important role to play in promoting change in public policy to promote social justice.

Directing health promotion efforts towards female leaders and Elders in a community not only supports women in these important roles to improve their personal heart health, but can also have broader impacts through the guiding roles they take on with family and community members

(Ziabakhsh et al., 2016).

9.0 CONCLUSION

Cardiovascular health among First Nations women in Canada has yet to be studied extensively, although it is evident from existing research that this population carries a high burden of heart-related illness. Colonization continues to impact the lives of First Nations women; thus, the inequities in heart health they experience need to be considered against this backdrop of ongoing systemic oppression. To do so requires a shift away from the biomedical discourses about risk factors and lifestyle choices that typically dominate the prevention, diagnosis, and management of cardiovascular issues.

When First Nations women's perspectives are centered, their stories reveal how they understand their heart health in the context of ongoing colonial oppression. By providing an alternative to the biomedical framing of heart disease, the foundation is laid for rethinking how First Nations women may be supported in ways that are meaningful and relevant. The strategies outlined share the common underlying principle of supporting First Nations women's right to self-determination as fundamental to their heart health. This is the key to developing programs, training health professionals, and transforming institutions and systems, all of which are needed to close the existing gap in heart health that profoundly impacts the lives of First Nations women.

10.0 RESOURCES

Heart & Stroke

Heart & Stroke has developed a strategy to work with Indigenous health leaders to close the gap in heart disease that exists between Indigenous and non-Indigenous peoples.

heartandstroke.ca/what-we-do/our-impact/helping-to-close-the-gap-in-indigenous-health

Indigenous Health Education Access Research Training (I-HEART) Centre

The Centre supports improved cardiovascular health through education that promotes Indigenous health information dissemination and application for policy and programs.

i-heartcentre.ca

National Aboriginal Diabetes Association (NADA)

NADA has a number of resources for Indigenous peoples that are relevant to heart health.

nada.ca

mite achimowin – Heart Talk Videos

Four digital stories from the *mite achimowin (Heat Talk): First Nations Women's Expressions of Heart Health* study are available online through the National Collaborating Centre for Indigenous Health website:

Episode 1: "E THEE NEW ISKWEW OTE – Cree Women's Heart" by Christina Baker and Mabel Horton

nccih.ca/495/Video__mite_achimowin_-_Heart_Talk_by_Christina_Baker_and_Mabel_Horton.nccih?id=208

Episode 2: "My Heartbeat" by Eliza Beardy,

nccih.ca/495/Video__mite_achimowin_-_Heart_Talk_by_Eliza_Beardy.nccih?id=209

Episode 3: "NIIN INTEPACHIMOWIN - My heart story" by Virginia McKay

nccih.ca/495/Video__mite_achimowin_-_Heart_Talk_by_Virginia_Mckay.nccih?id=210

Episode 4: "MITE MEKIWIN - Gift of the Heart" by Esther Sanderson

nccih.ca/495/Video__mite_achimowin_-_Heart_Talk_by_Esther_Sanderson.nccih?id=211

REFERENCES

Arbour, L., Rezazadeh, S., ldstrom, J., Weget-Simms, G., Rupps, R., Dyer, Z., Tibbits, G., et al. (2008). A kcnq1 v205m missense mutation causes a high rate of long QT syndrome in a First Nations community of northern British Columbia: A community-based approach to understanding the impact. *Genetics in Medicine, 10*(7), 545-50. doi:10.1097/GIM.0b013e31817c6b19

Arriagada, P. (2016). *Women in Canada: A gender-based statistical report (First Nations, Métis and Inuit women)*. Ottawa, ON: Statistics Canada, Catalogue #89-503-X. Retrieved April 9, 2019 from https://www150.statcan.gc.ca/n1/en/pub/89-503-x/2015001/article/14313-eng.pdf?st=GUjJ20q-.

Barr, S.I., & Kuhnlein, H.V. (1985). High density lipoprotein and total serum cholesterol levels in a group of British Columbia Native Indians. *Nutrition Research,* (8), 827-37.

Bombak, A.E. (2010). *Predictors of self-rated health in a Manitoba First Nation community.* Unpublished Master of Arts thesis, University of Manitoba, Winnipeg, Manitoba.

Bourassa, C., McKay-McNabb, & Hampton, M. (2004). Racism, sexism, and colonialism: The impact on the health of Aboriginal women in Canada. *Canadian Woman Studies, 24*(1), 23-30.

Brennand, E.A., Dannenbaum, D., & Willows, N.D. (2005). Pregnancy outcomes of First Nations women in relation to pregravid weight and pregnancy weight gain. *Journal of Obstetrics and Gynaecology Canada, 27*(10), 936-44. doi:10.1016/S1701-2163(16)30739-3

Bruce, S.G., Riediger, N.D., Zacharias, J.M., & Young, T.K. (2010). Obesity and obesity-related comorbidities in a Canadian First Nation population. *Chronic Diseases in Canada, 31*(1), 27-32.

Canadian Institute for Health Information. [CIHI]. (2013). *Hospital care for heart attacks among First Nations, Inuit and Métis.* Ottawa, ON: Author. Retrieved April 9, 2019 from https://secure.cihi.ca/free_products/HeartAttacksFirstNationsEn-Web.pdf

Charon, R. (2006). *Narrative medicine: Honoring the stories of illness.* Oxford, UK: Oxford University Press.

Czyzewski, K. (2011). Colonialism as a broader social determinant of health. *International Indigenous Policy Journal, 2*(1), 1-14.

Dai, S., Bancej, C., Bienek, A., Walsh, P., Stewart, P., & Wielgosz, A. (2009). Report summary tracking heart disease and stroke in Canada 2009. *Chronic Diseases in Canada, 29*(4), 192-3.

Del Gobbo, L.C., Song, Y., Poirier, P., Dewailly, E., Elin, R.J., & Egeland, G.M. (2012). Low serum magnesium concentrations are associated with a high prevalence of premature ventricular complexes in obese adults with type 2 diabetes. *Cardiovascular Diabetology, 11*(1), 23. doi:10.1186/1475-2840-11-23

Delisle, H., Dsilets, M.-C., Vargas, E.R., & Garrel, D. (2008). Metabolic syndrome in three ethnic groups using current definitions. *Applied Physiology, Nutrition, and Metabolism, 33*(2), 356-60. doi:10.1139/H08-003

Dickson, G. (2000). Aboriginal grandmothers' experience with health promotion and participatory action research. *Qualitative Health Research, 10*(2), 188-213.

Earle, L. (2011). *Understanding chronic disease and the role of traditional approaches in Aboriginal communities.* Prince George, BC: National Collaborating Centre for Aboriginal Health.

First Nations Centre. (2005). *First Nations regional longitudinal health survey (RHS) 2002/03: Results for adults, youth and children living in First Nations communities*. Ottawa, ON: Author.

First Nations Information Governance Centre [FNIGC]. (2007). *First Nations regional longitudinal health survey (RHS) 2002/03: Results for adults, youth and children living in First Nations communities*. Ottawa, ON: Author.

First Nations Information Governance Centre [FNIGC]. (2012). *First Nations regional health survey (RHS) 2008/10: National report on adults, youth and children living in First Nations communities*. Ottawa, ON: Author.

First Nations Information Governance Centre [FNIGC]. (2018). *National report of the First Nations regional health survey phase 3: Volume one*. Ottawa, ON: Author.

Fontaine, L.S., Wood, S., Forbes, L., & Schultz, A. (2019). *Listening to First Nations women's expressions of heart health: Mite achimowin digital storytelling study. International Journal of Circumpolar Health, 78*(1), 1630233. DOI: 10.1080/22423982.2019.1630233.

Foulds, J.A.H., Bredin, S.D.S., & Warburton, E.R.D. (2012). The relationship between hypertension and obesity across different ethnicities. *Journal of Hypertension, 30*(2), 359-67. doi:10.1097/HJH.0b013e32834f0b86

Garro, L.C. (1988). Explaining high blood pressure: Variation in knowledge about illness. *American Ethnologist, 15*(1), 98-119.

Gracey, M., & King, M. (2009). Indigenous health part 1: Determinants and disease patterns. *The Lancet, 374*(9683), 65-75. doi:10.1016/S0140-6736(09)60914-4

Heart and Stroke Foundation of Canada. (2018). *Arryhthmia*. Ottawa, ON: Author. Retrieved from https://www.heartandstroke.ca/heart/conditions/arrhythmia

Hegele, R.A., Connelly, P.W., Hanley, A.J.G., Sun, F., Harris, S.B., & Zinman, B. (1997). Common genomic variation in the apoc3 promoter associated with variation in plasma lipoproteins. *Arteriosclerosis, Thrombosis, and Vascular Biology, 17*(11), 2753-8. doi:10.1161/01.ATV.17.11.2753

Henderson, J. (2000). Ayukpachi: Empowering Aboriginal thought. In M. Battiste (Ed.), *Reclaiming Indigenous voice and vision* (pp. 248-278). Vancouver, BC: University of British Columbia Press.

King, M., Smith, A., & Gracey, M. (2009). Indigenous health part 2: The underlying causes of the health gap. *The Lancet, 374*(9683), 76-85. doi:10.1016/S0140-6736(09)60827-8

MacMillan, H., Walsh, C., Jamieson, E., Wong, M., Faries, E., McCue, H., MacMillan, A. et al. (2003). The health of Ontario First Nations people. *Canadian Journal of Public Health, 94*(3), 168-72. doi:10.1007/BF03405059

Manitoba Trauma Informed Education & Resource Centre. (2019). *Trauma informed systems/organizations*.Winnipeg, MB: Author. Retrieved June 27, 2019 from https://trauma-informed.ca/about-us/mtiec-trainings-and-webinars/trauma-informed-organizations-and-systems/

Mao, Y. (1992). Indian reserve and registered Indian mortality in Canada. *Canadian Journal of Public Health, 83*(5), 350-3.

Mayo Clinic. (2019a). Heart disease. *Patient care & health information*. Rochester, MN: Author. Retrieved June 27, 2019 from https://www.mayoclinic.org/diseases-conditions/heart-disease/symptoms-causes/syc-20353118

Mayo Clinic. (2019b). Long QT syndrome. Patient care & health information. Rochester, MN: Author. Retrieved June 27, 2019 from https://www.mayoclinic.org/diseases-conditions/long-qt-syndrome/symptoms-causes/syc-20352518

McGibbon, E., Waldron, I., & Jackson, J. (2013). The social determinants of cardiovascular disease: Time for a focus on racism. *Diversity and Equality in Health and Care, 10*(3), 139-42.

McIntyre, L., & Shah, C.P. (1986). Prevalence of hypertension, obesity and smoking in three Indian communities in northwestern Ontario. *Canadian Medical Association Journal, 134*(4), 345-9.

Medved, M.I., Brockmeier, J., Morach, J., & Chartier-Courchene, L. (2013). Broken heart stories: Understanding aboriginal women's cardiac problems. *Qualitative Health Research, 23*(12), 1613-25. doi:10.1177/1049732313509407

Montour, L.T., Macaulay, A.C., & Adelson, N. (1989). Diabetes mellitus in Mohawks of Kahnawake, PQ: A clinical and epidemiologic description. *Canadian Medical Association Journal, 141*(6), 549-52.

National Collaborating Centre for Aboriginal Health. (2011). *Access to health services as a social determinant of First Nations, Inuit and Métis health*. Prince George, BC: Author.

Oliveira, A.P., Kalra, S., Wahi, G., McDonald, S., Desai, D., Wilson, J., Jacobs, L. et al. (2013). Maternal and newborn health profile in a First Nations community in Canada. *Journal of Obstetrics and Gynaecology Canada, 35*(10), 905-13. doi:10.1016/S1701-2163(15)30812-4

Oster, R., Shade, S., Strong, D., & Toth, E. (2010). Improvements in indicators of diabetes-related health status among First Nations individuals enrolled in a community-driven diabetes complications mobile screening program in Alberta, Canada. *Canadian Journal of Public Health, 101*(5), 410-4. doi:10.1007/BF03404863

Oster, R.T., Virani, S., Strong, D., Shade, S., & Toth, E.L. (2009). Diabetes care and health status of First Nations individuals with type 2 diabetes in Alberta. *Canadian Family Physician, 55*(4), 386-93.

Prince, S.A., McDonnell, L.A., Turek, M.A., Visintini, S., Nahwegahbow, A., Kandasamy, S., Sun, L.Y. et al. (2018). The state of affairs for cardiovascular health research in Indigenous women in Canada: A scoping review. *Canadian Journal of Cardiology, 34*(4), 437-49. doi:10.1016/j.cjca.2018.01.032

Reading, C., & Wien, F. (2013). *Health inequalities and social determinants of Aboriginal peoples health*. Prince George, BC: National Collaborating Centre for Aboriginal Health.

Reading, J. (2015). Confronting the growing crisis of cardiovascular disease and heart health among Aboriginal peoples in Canada. *Canadian Journal of Cardiology, 31*(9), 1077-80. doi:10.1016/j.cjca.2015.06.012

Reading, J., Svenson, K., Lafontaine, C., O'Neil, J., Young, K., Elias, B., MacMillan, H. et al. (1999). *First Nations and Inuit Regional Health Survey*. First Nations and Inuit Regional Health Survey National Steering Committee. Retrieved April 9, 2019 from https://fnigc.ca/sites/default/files/ENpdf/RHS_1997/rhs_1997_final_report.pdf

Reid, C., Pederson, A., & Dupéré, S. (2012). Addressing diversity and inequities in health promotion: The implication of intersectional theory. In I. Rootman, S. Dupéré, A. Pederson, & M. O'Neill (Eds.), *Health promotion in Canada: Critical perspectives on practice* (pp. 54-66). Toronto, ON: Canadian Scholars Press.

Riediger, N.D., Bruce, S.G., & Young, T.K. (2010). Cardiovascular risk according to plasma apolipoprotein and lipid profiles in a Canadian First Nation. *Preventing Chronic Disease, 8*(1), 33-8.

Riediger, N.D., Lix, L. M., Lukianchuk, V., & Bruce, S. (2014). Trends in diabetes and cardiometabolic conditions in a Canadian First Nation community, 2002-2003 to 2011-2012. *Preventing Chronic Disease, 11*(11), E198. doi:10.5888/pcd11.140334

Riediger, N.D., Lukianchuk, V., & Bruce, S.G. (2015). Incident diabetes, hypertension and dyslipidemia in a Manitoba First Nation. *International Journal of Circumpolar Health, 74*(1), 1-7. doi:10.3402/ijch.v74.27712

Statistics Canada. (2016). *2016 census of population*. Ottawa, ON: Statistics Canada Catalogue No. 98-400-X2016155.

Statistics Canada. (n.d.). *Table 13-10-0099-01 Health indicator profile, by Aboriginal identity and sex, age-standardized rate, four year estimates*. Ottawa, ON: Author. Last updated June 27, 2019.

Tjepkema, M., Wilkins, R., Pennock, J., & Goedhuis, N. (2011). Potential years of life lost at ages 25 to 74 among Status Indians, 1991 to 2001. *Health Reports, 22*(1), 25-36.

Tjepkema, M., Wilkins, R., Senécal, S., Guimond, E., & Penney, C. (2009). Mortality of Métis and registered Indian adults in Canada: An 11-year follow-up study. *Health Reports, 20*(4), 31-51.

Tjepkema, M., Wilkins, R., Urb, M., Goedhuis, N., & Pennock, J. (2012). Cardiovascular disease mortality among First Nations people in Canada, 1991-2001. *Chronic Diseases and Injuries in Canada, 32*(4), 200-7.

Valderas, J.M., Starfield, B., Sibbald, B., Salisbury, C., & Roland, M. (2009). Defining comorbidity: Implications for understanding health and health services. *Annals of Family Medicine, 7*(4), 357-63. doi:10.1370/afm.983

Walters, K.L. (2002). Reconceptualizing native women's health: An "indigenist" stress-coping model. *American Journal of Public Health, 92*(4), 520-24.

Wei-Randall, H.K., Davidson, M.J., Jin, J., Mathur, S., & Oliver, L. (2013). Acute myocardial infarction hospitalization and treatment: Areas with a high percentage of First Nations identity residents. *Health Reports, 24*(7), 3-10.

Ziabakhsh, S., Pederson, A., Prodan-Bhalla, N., Middagh, D., & Jinkerson-Brass, S. (2016). Women-centered and culturally responsive heart health promotion among Indigenous women in Canada. *Health Promotion Practice, 17*(6), 814-26. doi:10.1177/1524839916633238

National Collaborating Centre for Indigenous Health

Centre de collaboration nationale de la santé autochtone

FOR MORE INFORMATION:
UNIVERSITY OF NORTHERN BRITISH COLUMBIA
3333 UNIVERSITY WAY, PRINCE GEORGE, BC, V2N 4Z9

1 250 960 5250
NCCIH@UNBC.CA
NCCIH.CA