

# Sex and Gender in Women's Heart Health

by Lorraine Greaves, Ann Pederson and Natalie Hemsing

## Introduction

A recent research study conducted by Raymond Fang<sup>[1]</sup> revealed that women's life expectancy in British Columbia (BC) is decreasing relative to men's life expectancy in the province as well as in relation to women and men in other high income countries. Furthermore, women's death rates in BC from circulatory system diseases (CSD) and ischemic heart diseases (IHD) are not reducing as fast as men's. While BC women's death rates from CSD are lower than those of Canadian women in general, the prevalence of CSD among BC women is decreasing at a slower rate than for other women in Canada. Given the burden of cardiovascular disease (CVD) among women in BC – and the intent to reduce this burden – this case study focuses on what is known about sex and gender as factors in cardiovascular disease for women and what policy actions can be taken to improve women's heart health.

## Reviewing the Evidence

To help inform the development of a response to high rates of CVD among women in BC, an evidence review was conducted of the prevention, treatment, and policy-related issues that affect women in relation to CVD.<sup>[2]</sup>

The Research Team at the BC Centre of Excellence for Women's Health carried out a thorough literature search focusing on literature published primarily between 2000 and 2007 from Canada, the United States (US), the United Kingdom (UK) and Australia of the following databases: Embase, PubMed, Academic Search Premier, Cochrane Reviews, Elsevier, Ovid and Contemporary Women's Issues. During the search, we utilized a variety of keywords, including: heart health, heart disease, CVD (all kinds, separately, including: coronary, cerebral, vascular), sex, women, gender, ethnicity, obesity, hypertension, diabetes, smoking, ethnicity, age, race, SES, psychosocial and stress. Our literature search returned 350 relevant articles, of which 149 were related to health promotion and prevention, 133 related to diagnosis and treatment (this literature is not covered here) and 53 related to policy issues. The remaining 15 articles (including overview and commentary articles) were collected for background information on women's heart health. These articles were then reviewed and analyzed for information on sex, gender and diversity issues associated with women's heart health.

The majority of the evidence reviewed focused on women's heart health and heart disease data from the US, with limited evidence from Canada. Therefore, while some of the findings, such as physiological risk factors are applicable to Canadian contexts, other findings, such as policy-related issues may be less relevant due to different demographic, social and political contexts.

### Defining the Terms

Cardiovascular Disease (CVD): A range of diseases that affect the heart itself and/or the blood vessel system leading to and from the heart.

Circulatory System Diseases (CSD): Diseases of the system that transports blood throughout the body.

Coronary Artery Disease (CAD) or Coronary Heart Disease (CHD): Accumulation of plaques within the artery walls that supply the heart, resulting in complete or partial blockages.

Angina: Chest pain.

Myocardial Infarction (MI): Heart attack.

Ischaemic Heart Disease (IHD): Heart disease characterized by reduced blood supply to the organs.

Hypertension: High blood pressure.

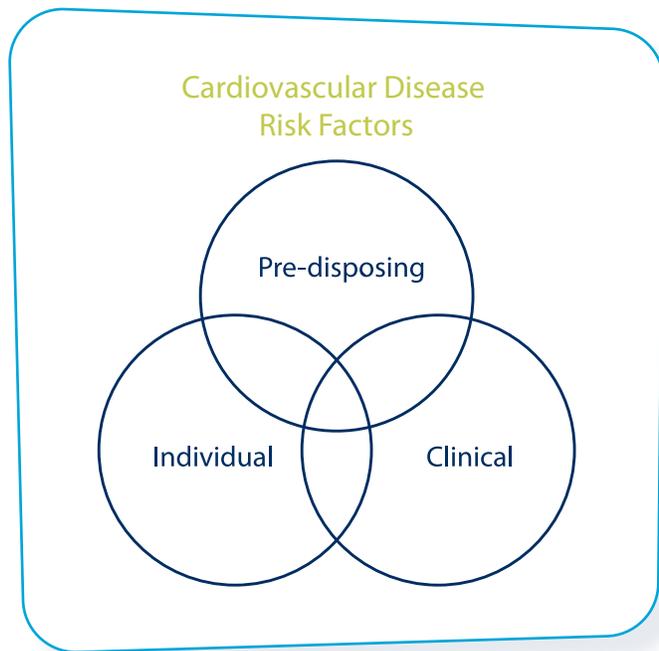
Congestive Heart Failure (CHF): Result of any disorder that prevents the heart from filling with or pumping blood through the body.

Life Expectancy: Number of years one can expect to live, based on average life spans for a population.

Life Span: Average age reached by members of a population.

## What Do We Know about the Causes of Cardiovascular Disease?

Risk factors for cardiovascular disease can be grouped into three major categories: pre-disposing factors, clinical factors, and individual level risk factors. Pre-disposing risk factors are those programmed into the body during development, such as a genetic predisposition, or hormonal influences. Clinical risk factors describe physiological conditions that, at certain levels, are associated with an increased risk of illness or death due to CVD and can be clinically assessed or measured. High blood pressure is a good example of a clinical risk factor for cardiovascular disease. Individual risk factors are those that can be modified through behavioural or structural change, such as tobacco smoking or levels of physical activity. These three types of risk factors often overlap in women's lives and are influenced further by social, economic and environmental factors that can enhance or undermine their heart health.



## Are Women and Men Similarly at Risk of Developing Heart Disease?

No risk factors – with the exception of hormonal status due to changes in female sex hormones during menopause – affect *only* women or *only* men, but certain risk factors have a greater impact on women.<sup>[3, 4]</sup> These include, greater impact of lipid levels, depression, diabetes, smoking, family history and inflammation.<sup>[4, 5]</sup> Women also face particular heart health risks related to sex-specific conditions or life stages, including changes in lipid profiles during pregnancy and menopause, and the use of exogenous hormones, increasing women's risk of heart disease.<sup>[6]</sup>

Risk factors may be influenced by sex or gender as well as by both sex and gender. Smoking offers an excellent example of the operation of sex and gender on the heart health of women as compared with that of men. For example, as smoking interferes with estrogen production and utilization, it may strip women smokers of a natural defense against CVD, putting them at even greater risk than men. Smoking has also been identified as a stronger risk factor for heart attacks – myocardial infarction (MI) – in women than in men; relative risk is approximately 50 percent higher in female smokers compared with male smokers.<sup>[7]</sup>

At the same time, the gender dimensions of women's smoking behaviour also place them at greater risk. For example, women are more likely to use smoking as a mechanism to cope with stress,<sup>[8]</sup> and they have a harder time quitting smoking, requiring more social support than men.<sup>[7]</sup> Women's smoking rates are also more likely to equal or even surpass men's, in contrast to historical patterns,<sup>[8]</sup> thereby further increasing women's risk of heart disease.

## COMMENTARY

### Why Private Health Insurance Is a Gender Issue

by Alison Jenkins

Canadians are justifiably proud of our publicly-funded health insurance system, which was developed to be available to all Canadians. Admittedly, however, this system faces a number of challenges. In addition to shortages of health care providers and controversies surrounding wait times for referrals and treatment, services such as oral and eye care, drugs and rehabilitative programs are simply not covered by public health insurance. Those who need these services must therefore pay for them out-of-pocket. As uninsured medical care can be expensive, many insurance companies offer supplementary private health insurance plans. In most provinces, these private plans are only permitted to cover services that are not publicly insured. Private health insurance is most often available through group plans offered by employers through third-party insurers, such as Blue Cross. In 2000, an estimated 65 percent of the Canadian population was covered by this type of private health insurance.<sup>[1]</sup>

The appropriate role of private health insurance has become the subject of intense political, legal and economic debate. Unfortunately, the gendered implications of private health insurance have not often been examined. Because women are the majority of health care users and providers, paid and unpaid, they stand to be particularly affected by decisions made about the roles of public and private health insurance.

Although some argue that expanding private plans to include parallel coverage for publicly insured services can reduce pressure on the public health care system by creating alternatives, international evidence suggests otherwise. In countries that allow citizens to “opt-out” of the public health insurance system, the impact of private health insurance is most obvious: resources are lost, services disappear and more care is left to unpaid providers – most of whom are women. But even in countries such as Canada, where public health care is financed through taxation, private health insurance can create additional strains on the public health care system by fostering competition, driving up prices, and siphoning scarce resources out of the public sector.<sup>[2]</sup> Cross-national comparisons within the Organization for Economic Co-operation and Development (OECD) suggest that wait times in the public health care system lengthen when health care providers can earn more in the private sector and leave the public system for higher salaries.<sup>[3]</sup> In the absence of timely access to services and providers, the work of caring falls to women.

### Are Different Groups of Women Similarly At Risk of Developing Heart Disease?

There are differences in heart disease risk among diverse groups of women. Subpopulations of women encounter different health risks based on biological, social, historical and economic differences. In particular, non-white ethnic minority and low-income women are among those who have greater risk of heart disease and encounter more barriers to preventive health care. In Canada, for example, Aboriginal women have, on average, lower education, employment levels and annual household incomes, as well as higher rates of risk factors (such as tobacco use and obesity) and CVD compared with Canadians of European ancestry.<sup>[9]</sup> Historical changes in food consumption and activity levels have likely influenced Aboriginal people’s higher rates of obesity, particularly abdominal obesity, which is a known risk factor for cardiovascular disease.<sup>[9]</sup> Similarly, studies conducted in the US reveal that Black and Native American women are most likely to be living with multiple risk factors for cardiovascular disease, while Asian women are the least likely.<sup>[10,11]</sup> Other studies have found that Black women in the US report more risk factors, and have the highest rates of coronary heart disease morbidity and mortality followed by Hispanic and White women.<sup>[6, 12-14]</sup> More research, however, is needed to clarify the reasons for these patterns.

Research has shown that women who have lower levels of educational attainment, low incomes, and higher levels of unemployment are more likely to experience more than one risk factor as they age.<sup>[10]</sup> For example, both smoking and obesity are more common among individuals facing greater social disadvantages.<sup>[15-17]</sup> For instance, women living on a low income are typically more likely to be unemployed, under-educated, and to have fewer social networks, which may in turn limit their ability to engage in healthy behaviours,<sup>[18]</sup> and have been associated with higher rates of CAD<sup>[19]</sup> and CHD.<sup>[20]</sup> Some evidence also suggests that women living on a low income are more likely to live in environments that do not support healthy living and therefore are at greater risk for CHD.<sup>[21,22]</sup> Poorer neighbourhoods generally have more fast food outlets, fewer full-sized grocery stores, fewer fitness facilities and public green

spaces, which may restrict physical activity. Social and environmental factors that produce chronic stress, including poverty and insecure environments, may also contribute to unhealthy behaviours or prevent women from attending to their health.<sup>[23]</sup> Lack of access to health care, healthy food options, exercise facilities and social support networks are significant social, economic and environmental impediments to good heart health among women.

## How Can We Design Programs and Policies to Promote Heart Health and Prevent Heart Disease among Diverse Women?

### *Address Economic and Social Inequalities*

If women are to adopt heart healthy behaviours, policies and programs need to address social and financial barriers to health. In areas where the status of women is low and where income inequality is high, the health of women and children is worse.<sup>[24]</sup> Status and inequality are directly influenced by policy. For example, in a study of the effect of state level policies on women's health in the US, researchers found that low socio-economic status is the primary indicator of heart disease mortality in women, and a larger risk factor for women than men.<sup>[24]</sup>

Cultural and environmental issues are also relevant to women's heart health. Focus groups with high risk women revealed a number of factors that prevented them from being physically active, including cultural barriers (e.g., cultural values of physical activity, body image, etc), social support, family care giving demands, physical barriers and policy issues such as cost, lack of child care or personal safety.<sup>[25]</sup> Various environmental issues present barriers to women's ability to reduce their risk of heart disease, including inclement weather, limited daylight, lack of sidewalks, traffic and distance.<sup>[25]</sup> Similarly, research has revealed environmental barriers, such as a lack of available healthy food choices or safe and affordable places to exercise affect women's ability to eat well and engage in physical activity.<sup>[26]</sup> Policies and programs are therefore required that address

At the same time, private health insurance tends to be less accessible to women than it is to men. With lower incomes, women as a group have fewer resources with which to pay for care.<sup>[4]</sup> Private health insurance is offered mainly through large employers, but women are more likely to be employed in small companies, and in non-unionized or low-status sectors where benefits are limited or non-existent. For example, workers in female-dominated industries, such as the service sector, have the lowest rates of private health insurance coverage in Canada.<sup>[5,p9]</sup>

Similarly, women are more likely than men to work part-time or on a casual basis due to care-giving responsibilities, making them ineligible for a variety of benefits, including private health insurance. Women also move in and out of the labour force more frequently than men because of child-bearing and higher rates of chronic diseases. In such cases, they not only lose private health insurance coverage during their absence, but may be denied coverage upon returning to work because of medical conditions that have developed while they were out of the workforce.<sup>[6]</sup> Changes in personal circumstances also render women vulnerable when they are covered as dependents; death of a spouse or divorce can result in the loss of private health insurance coverage.

More research is needed to evaluate the full implications of private health insurance for women, particularly research that addresses the needs of different groups of women and the strengths and weaknesses of various forms of private health insurance. But the broad conclusion that emerges from an analysis of the existing research is that this form of health care financing is detrimental to gender equity.<sup>[5]</sup>

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the economic (e.g., lack of affordable healthy food and recreation), environmental (e.g., lack of safe spaces for physical activity) and social (e.g., lack of social support) barriers to women's health.

### *Address Women's Needs and the Multi-factoral Nature of Heart Disease*

There is a need for women-specific and multi-component programs. Strategies that have been successful in some segments of the population are not necessarily appropriate for women, or all groups of women, particularly those with few social

and economic resources. Suggested recommendations include: examining the root causes of tobacco use and dependence, finding better and more gender-sensitive opportunities for physical activity, developing diet interventions focusing on women's needs, integrating social support and stress reduction in programs, and utilizing multi-component risk reduction interventions.

<sup>[30]</sup> These recommendations are supported by other research that found that women prefer programs that address multiple risk factors, emphasize staying healthy for themselves, teach specific skills about how to adopt healthy behaviours, and offer them choices in making personal changes.<sup>[31]</sup>

#### **The WISEWOMAN Program**

A key example of an evaluated multi-level intervention is the Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) program in the US. WISEWOMAN addresses heart health promotion and heart disease prevention among mid-life underserved women.<sup>[26-28]</sup> The program combined risk factor screening with a multi-component intervention focused on improving women's diet and physical activity and smoking cessation. It addresses both environmental and individual level factors in the context of a clinic based setting. It is aimed at multiple behavioural changes and involved linking individuals to community resources, community guides and supportive environments. It also encouraged women to become involved in advocacy efforts to make environmental and policy changes. Although the program has helped women increase their physical activity, quit smoking and improve their nutrition, some challenges of the women in the program include: social isolation, unsafe neighbourhoods and a lack of access to healthy foods. These findings suggest that while multi-factorial programs may be effective, environmental and societal approaches are also needed in order to effectively reduce women's risk for heart disease.<sup>[29]</sup>

### **Conclusion**

Women have different risk factors for heart disease than men, and there are also differences in predisposing, clinical and individual risk factors between sub-populations of women. This case study illustrates some of the sex and gender differences associated with risk for heart disease, both between women and men and among women.

Women's heart disease is a multi-factorial problem and heart health promotion for women is a challenge on individual, clinical and policy levels. Evidence in all aspects of sex, gender and women's heart health is still emerging and continuously evolving. It is clear that sex, gender and diversity all play a role in determining the rates of women's heart disease,

women's ability to prevent heart disease, and the effectiveness of programs and policies. Policy and program level change can be made to improve women's heart health, however, such as initiatives in heart health promotion and prevention of cardiovascular disease if specific attention is paid to reducing risk factors for heart disease among sub-populations of women at risk and, in some cases, attention can be paid to tailoring programs and practices to the needs of particular groups of women, and reducing inequalities in health among women. Overall, it is important to pursue multifactorial programs and policies, reflecting the complex nature of women's heart health and disease.

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