

ACCESSING HEART HEALTH: A NORTHERN EXPERIENCE

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ABSTRACT

Background and Research Purpose: Coronary heart disease (CHD) continues to be a major cause of death and disability across the globe. Regional differences in CHD exist throughout Canada, including Ontario. It is important to explore the complex interplay between geographical regions and individuals' efforts at reducing their cardiovascular risk. This study explored barriers and supports to heart healthy lifestyles and associated meanings within various regions of Ontario. The focus of this paper is on the northern context to better understand the issues these individuals face when making heart healthy lifestyle changes.

Sample and Method: The study used an ethnographic approach and photo-elicitation interviews. Participants took photographs of places that represented the barriers and supports to lifestyle changes for cardiovascular risk modification. These photographs were used as the basis for interview dialogue. Twelve informants from a larger study comprised the northern sub-sample considered in this paper.

Results and Conclusions: When the data were analyzed, health care access and access concerns related to heart healthy lifestyles for people in northern Ontario emerged as key findings. Findings suggest that the concept of place is pivotal to recognizing issues related to health care access, which should be incorporated as part of our understanding of health and cardiovascular risk modification.

BACKGROUND

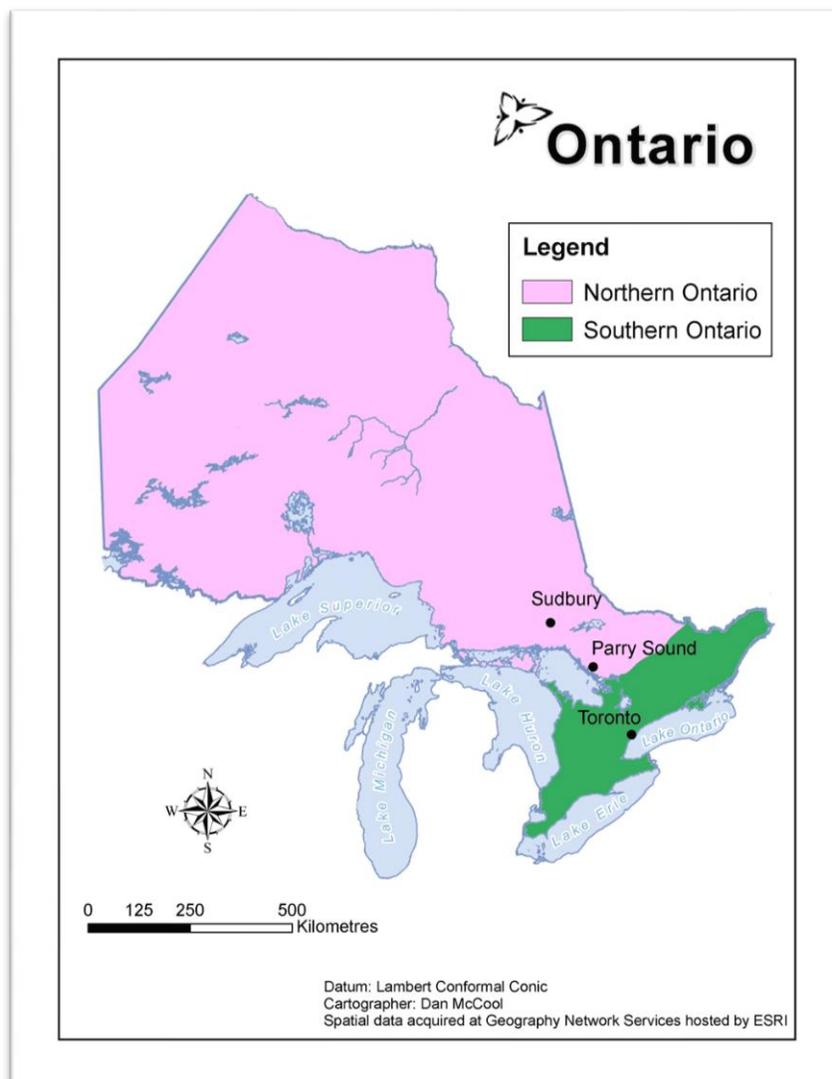
Coronary heart disease (CHD) continues to be a major cause of death and disability in Canada (Public Health Agency of Canada [PHAC], 2009). Although CHD death rates are declining, regional differences exist throughout Canada, including Ontario. Differences in CHD rates may be attributed to variances in major risk factors (PHAC, 2009; Tanuseputro, Manuel, Leung, & Nguyen, 2003). There is compelling evidence that certain physiological and behavioural factors place individuals at risk of developing CHD. For instance, the prevalence of CHD is linked to modifiable risk factors including hypertension, diabetes, smoking, body mass index (BMI) greater than 27, a diet including more than 30% of calories from fat, and a sedentary lifestyle (Choiniere, Lafontaine, & Edwards, 2000; Heart and Stroke Foundation of Canada, 2003). These risk factors are also associated with social patterns of advantage and disadvantage; for example, individuals with less dispensable income are at higher risk for CHD (Choiniere et al., 2000; King & Arthur, 2003; Potvin, Richard, & Edwards; Sahai et al., 2000). Efforts to make healthy lifestyle changes are complicated by contextual barriers and supports (Angus et al., 2009). It is important to explore the complex interplay between contextual conditions unique to geographical regions and people's efforts to modify cardiovascular risk.

This study of barriers and supports to heart healthy lifestyles originated in two geographical regions in Ontario. While study participants were recruited in Sudbury and Toronto, Ontario, Canada, the focus of this paper is the northern group of participants from Sudbury. This mid-sized city is surrounded by a geographically large area of rural and remote communities and is located 400 km north of Toronto, an urban metropolitan centre. Sudbury is uniquely situated in the north, servicing the health care needs of the vast majority of surrounding communities, where CHD rates exceed provincial averages (Sahai et al., 2000; Ward, 2003).

Defining the North

The boundaries between northern Ontario (NO) and southern Ontario (SO) are not firmly fixed because they fluctuate as official electoral boundaries are redefined. Recognizing that there is no consensus in the literature on definitions of terms such as rural and/or northern, the research team chose to define NO according to the most commonly accepted geographical coordinates so that the data generated on the health of individuals living in this area could be appropriately contextualized. For this study, NO was defined as the provincial region that extends north of the District of Parry Sound, where climatic conditions and population density begin to noticeably differ from those of areas to the south (McNiven & Puderer, 2000; Meyer, 2010). Figure 1 illustrates the large land mass, and the dividing line through the Parry Sound district that separates NO and SO.

Figure 1. Map of Ontario illustrating the divide/land mass of NO and SO



In NO, there is a distinct rural-urban mix population with the majority of northern cities situated within a rural context. NO includes a large geographical area accounting for 90% of Ontario's land mass, and is bigger than most provinces in Canada (Ministry of Northern Development, Mines and Forestry, 2010). Less than 10% of the provincial population lives in NO, and there are large distances between municipalities requiring extensive use of highways for full economic and social participation (Sahai et al., 2000). Low population density and distance also contribute to patterns of thin resource dispersal that create challenges for NO residents, particularly when accessing health care services.

Geographic location and socio-demographic position form circumstances that support or undermine health. Rural and northern populations have poorer health and higher mortality rates attributed to circulatory diseases such as CHD (Ward, 2003; Pong et al., 2006). Previous research indicated provincial regional differences in the prevalence of modifiable risk factors for CHD, with higher risk, morbidity and mortality in some areas of NO (Jaglal, Bondy & Slaughter, 1999;

Ward, 2003). Northern and rural residents in some health regions of Canada, as well as individuals with low incomes and limited education, are at highest risk for CHD (Choiniere et al., 2000; King & Arthur, 2003; Potvin et al., 2000; Sahai et al., 2000). Many residents of NO have lower incomes, work more shift work in primary industry settings, higher unemployment rates, lower levels of education, and are less likely to have university degrees than persons living elsewhere in Ontario (Ministry of Northern Development, Mines and Forestry, 2009). All of these factors have been associated with higher rates of CHD (Sahai et al., 2000).

Health and Place

There are indications that there is a dynamic relationship among individuals, place, and health. Further study of this relationship can be enriched by particular attention to the concepts of space and place. The concept of place refers to physical locations on various scales, ranging from geographic region to the various communities within a city to the dwelling that a person occupies (de Certeau, 1984). Space refers to the way that places are used or the meanings made out of places; as de Certeau suggests, “space is a practiced place” (1984, p. 117). Different people may do different things in and assign different meanings to the same place. In this way, place is personalized. Theoretical understandings of place in this study are informed by the conceptualizations of de Certeau (1984), which accounts for health variations across space and place.

An individual’s interactions within social space and material place can create health inequalities and discourage heart healthy lifestyle practices. For instance, the challenges to lifestyle change include time constraints, stress, financial struggles, and lack of health information (Angus et al., 2005; 2007). These barriers are particularly common among some groups of people and influence the prevalence of heart disease in certain geographical areas (Davey-Smith, 1997; Raphael, 2001). Patterns of cardiovascular risk are identifiable in geographic subpopulations of urban, northern, and rural areas where variations in heart disease rates reflect variance in cardiovascular risk factors (Dennis & Pallotta, 2001; Jaglal et al., 1999).

Contextual Inequities of CHD

There is growing recognition that individual patterns of health are contextually embedded, meaning they are influenced by the social and material conditions of place (Coburn, 2004; Frohlich & Potvin, 2008; Scambler, 2001). Currently, research from several disciplines illuminates the relationships among individuals, place, and health (DesMeules, Luo, Wang, & Pong, 2007; Potvin & Hayes, 2007; Sullivan & Gyorf-Dyke, 2007). Place and health research has re-shaped our understanding of health inequalities by reinforcing attention to determinants of health (DesMeules et al., 2007). It is now recognized that research should focus on situated patterns of health rather than solely on national population-level data (Pong et al., 2006). Individuals often face social and material barriers when incorporating new health knowledge and implementing health behaviour change (Angus et al., 2009). Social and material environments condition people's efforts to overcome health risks. The habitual, context-sensitive nature of some activities may further complicate health behaviour change (Angus et al., 2007). For instance, time limitations, stress, financial struggles, and lack of health information can be factors that contribute to the prevalence of heart disease and risk in various groups of individuals while simultaneously acting as barriers to a healthy lifestyle (Davey-Smith, 1997; Raphael, 2001). These understandings draw attention to the places where risk behaviours are created and CHD is experienced. These places may vary according to geographic regions, including the rural north. They may be influenced by social locations, such as socioeconomic position. Given these

ideas, the purpose of this study was to explore barriers and supports to heart healthy lifestyles and associated meanings within a mid-sized northern city set in a rural context.

RESEARCH METHODS

Approach

This qualitative study is based on the tenets of ethnography which aims to understand and contextualize particular facets of social life (Hammersley & Atkinson, 2007). The research methods are described in greater detail elsewhere (Angus et al., 2009). While observational methods are often associated with ethnography, an alternative is to employ visual methods that enable participants to portray their worlds and contribute to data collection (Oliffe & Bottorff, 2007; Radley & Taylor, 2003). Thus, in this study, individual interviews were supplemented with photo-elicitation.

Recruitment and Sample

This qualitative study was linked with a larger trial (Nolan et al., in press) that tested a risk reduction telephone counselling intervention for individuals at high risk for CHD in three regions of Ontario, including Toronto and Sudbury. Trial participants' risk for CHD was determined based on the Framingham algorithm, using a standardized telephone assessment interview and physician referral form (Grundy et al., 2000; Wilson et al., 1998). Individuals at elevated risk for CHD (i.e., two or more risk factors) were invited to participate in the trial, including those with an existing diagnosis of atherosclerotic heart disease. The purpose of our associated qualitative study was to understand the social and material conditions of health behaviour change from the perspectives of people who had been made aware of their high risk for CHD and had received information about cardiovascular risk modification. Criterion sampling was used to select individuals at high risk for CHD and who participated in a CHD risk modification program with 39 participants recruited, thus assuring access to people who were knowledgeable about making cardiovascular risk modifications. This paper considers the experiences of the 12 English-speaking participants from Sudbury. The sample included six males and six females. Table 1 provides a demographic profile of the 12 northern participants.

Data Collection Procedures

Data collection occurred simultaneously at the two sites. The first and second authors formed the sub-team that gathered and analyzed data from the English speaking participants in Sudbury. Regular teleconference meetings were held with the entire research team; electronic exchange of information and in-person site meetings also occurred. Data collection involved focus group discussions and individual photo-elicitation interviews. Focus groups were held to introduce participants to the study, and to obtain descriptions of their efforts to change health behaviours. Upon completion of the focus group discussions, participants were given disposable cameras and asked to take pictures of activities, objects, and places that affected their heart health initiatives. Once the photos were developed, individual, in-depth individual interviews were arranged to discuss the photos. Images were used as reference points to ground interview-based discussion of specific places and situations that affect heart health. Photographs of

Table 1: Sample Demographics and Profile (N = 12)

Characteristic	<i>M</i> (<i>SD</i>)	
Age, mean (SD)	62 (04.8)	
Yrs of education, median (SD)	12 (02.2)	
	<i>n</i>	<i>Percentage(%)</i> of sample
Ethnicity		
Caucasian	10	83.3
Other	2	16.7
Country of Birth		
Canada	10	83.3
Other	2	16.7
Language		
English	11	91.7
French	1	8.3
Marital Status		
Married	8	66.7
Single or living with others	1	8.3
Single or living alone	3	25
Family Income		
19,999 or less	3	25
20,000-39,999	2	16.6
40,000-69,999	4	33.3
70,000 or greater	3	25
Work Status		
Full-time	4	33.3
Retired	5	41.7
Receiving disability	2	16.7
Unemployed	1	8.3
Children, mean (SD)	2.6	1.4

locations where significant healthful activities occur as well as barriers to healthy lifestyles take place helped to expand discussion by suggesting topics or examples. They also served to sharpen and focus description of habitual practices and contextual cues.

Photo-elicitation interviews were conducted with all of the northern participants except with one woman who felt unable to convey in photographs her feelings of stress related to family health issues. Instead, she verbally described these issues in an interview. Once the photographs were developed, photo-elicitation interviews were scheduled with each participant at the person's convenience, usually in the home. During the interviews, participants were asked to explore the significance of the images in relation to maintaining and/or changing health behaviours. Interviews lasted 60 to 90 minutes and were audio recorded. Ethical approval was obtained from all research ethics boards of all participating facilities in 2005, file # 20050509. Signed release of the photos was obtained from all participants.

Data Analysis

Data collection and analysis were concurrent. Interviews were transcribed verbatim and transcripts reviewed to ensure accuracy and enhance credibility. All identifying information on

the transcripts was replaced with pseudo names unique to participants to ensure their anonymity. For example, each participant quote is identified by gender F or M, and participant number e.g. FP4. Transcripts were read carefully and repeatedly by the primary researchers who noted emerging themes, similarities, and differences among the narratives. During full research team meetings, transcripts were shared and emerging themes discussed, affirmed, and/or revised by all members of the group. The process continued until a stable set of codes was established for the study. These discussions led to elaboration of noteworthy issues and themes, resulting in comparison of experiences in Toronto and Sudbury. Access to resources that supported risk modification was a key issue and became one of the dominant topics of these reflexive discussions. During these discussions, sub team members' experiences as residents in specific communities served as resources in elaboration of issues. NVIVO software was used to manage the data retrieved from the interviews and field notes, to code data, and to compare participants' experiences.

RESULTS

In this study, the accounts of the 12 northern English speaking participants revealed both barriers and supports in making lifestyle changes, and these sometimes pointed to the contradictory influences of context. Participant dialogue centered on the theme of 'access to places that support health', including discussion about diet, exercise, distance and travel, health care providers, and finances. Within the places or physical locations of everyday life, participants engaged in the spatial practices of diet, exercise, stress reduction, and access to primary health care. These practices, both habitual and personally meaningful, illustrate the complexity of attempts to modify lifestyle and make heart healthy changes. Lifestyle changes were attempted in everyday places of work, home, and neighbourhood that called forth and reinforced habitual practices rather than supporting new patterns. These practices were meaningful to participants as well as others who shared everyday places. Furthermore, the relationship between the northern context, population density, dispersal of resources, and climate, and individual lifestyle practices created challenges when participants sought access to places that support health. For instance, geographical issues of climate and transportation compounded being unable to draw on health services e.g. primary health care and support facilities like gyms. The idea of access to places that support health was subsequently broken down into five themes including (a) access to healthy foods, (b) access to exercise, (c) access to roads, (d) access to health care providers, and (e) access to sufficient finances.

Access to healthy foods

A dominant theme associated with cardiovascular risk modification was diet. Participants seemed to understand the importance of healthy foods and diet. Many participants described maintaining a balanced diet, including lean meats, fruits and vegetables, and whole grains. Participants explained that meals cooked in their home environment made it easier to follow a healthy diet because they could control the types of foods prepared. However, participants found it difficult to resist food temptations in certain places. Several participants described the struggle of healthy eating in restaurants. An illustration of this is noted in a participant's description and photograph (Figure 2) of her experience eating at a buffet restaurant during a family gathering. She explains: "When I go there, I love it, and I eat too much, too much sweets, and I don't think it's healthy ... I just can't control myself" [FP4].

Figure 2. Buffet restaurant.



The struggle of healthy eating involves being drawn to places for the pleasure of satisfying a food craving, and for the socialization and connection that occurs when sharing food with friends and family. This is portrayed in a participant's description and photograph (Figure 2) of gathering at a local coffee shop:

We mostly eat at home, especially for suppers, so we usually have a good meal, a balanced meal. Once in a while, you like to go out...we have friends that go to the [coffee shop], practically every night, so once in a while we'll go there as a group. And that's a good experience, because we sit and chat. But if you overdo any of this stuff, that's not good [MP6].

Figure 3. Coffee shop.



Several participants noted that social gatherings included a sense of well-being as well as unhealthy eating patterns, hence there were mixed meanings associated with these events.

Socializing created a space that was neither inherently unhealthy nor healthy, but that had potential to be both at the same time. In these cases, participants described two options: (a) reverting to previous eating habits, also called “taking a break” from healthy habits during social functions, and (b) requiring family members and/or guests to change their preferences during special holiday meals. Participants often sought resources that they could incorporate into their efforts to change everyday patterns, including knowledge, equipment, and new food items. At these points, the notion of access became salient. Both southern and northern participants identified these struggles.

Access to Exercise

Participants described the importance of an active lifestyle and exercise as a way to reduce their cardiovascular risk. Activities like gardening, walking, and going to the gym were seen as supports to their heart health efforts. However, exercising with co-morbidities can be difficult, especially for an older population living in the north where there are limited specialized facilities that support their activity level. Nearly all participants described the challenge of exercising with co-morbidities. A good illustration is found in the following account:

Well, I guess more support. Like it’s nice to be able to say that exercise helps with high blood pressure, BUT I have bursitis in both hips, so I can’t walk a lot. And there’s a lot of exercises I can’t do like swimming, as far as the aquacise, I go into a pool with a lot of chlorine and I’m scratching, so there’s really nothing. [FP6]

For this participant, being active was complicated by the challenge of exercising with chronic muscle, bone, and joint problems. It was further hindered by a perceived lack of recreational and rehabilitation facilities that accommodate the exercise needs of individuals with co-morbid conditions. Although individuals found it difficult to exercise because of co-morbidities, they often found alternate ways to remain active, such as creating a raised garden to limit bending, and using indoor malls for walking in the winter. In the summer months, participants often described easy access to outdoor exercise, such as walking, biking, and gardening (Figure 4). This is apparent in one participant’s description and corresponding photograph:

“I would like to join the [gym]...I went a couple of times to do some swimming, especially in the winter time. In the summer, I’m always doing something... And this [photograph] is when I went for a little stroll” [MP5].

Figure 4. Outdoor exercise in summer months.



For this retired participant summer months were filled with outdoor activities, including restoring cars, vacationing, gardening and walking. He contemplated whether he could afford purchasing a gym membership for exercise in the winter months.

A corresponding lack of available and affordable fitness facilities compounded the problem of finding a place for exercise. One participant commented:

I don't belong to the [local fitness centre]...I found their prices were OUTRAGEOUS... I had looked into it and it was almost five hundred dollars a year. I mean, we're comfortable but I have to kind of [gauge] where I'm going to spend five hundred dollars. [FP5].

However, this participant also acknowledged that she could afford to buy exercise equipment to use in her home. This was apparent in the photograph of her living room where she would exercise (Figure 5).

Figure 5. Living room scattered with exercise equipment



She further explains:

I firmly believe you should help yourself, which is what I did. Instead of putting the five hundred out for the [gym], I put out eight hundred and I got myself a treadmill...at yard sales, I found an exercise bike and an ab toner...I do my best. And then...we do a lot of outdoor work here [FP5].

This participant was motivated to promote her cardiovascular health, seeking ways to incorporate exercise into her daily routine despite being on a fixed income. In contrast, participants from Toronto spoke of being well resourced because there were several fitness facilities nearby that were easily accessible. For example, an urban female participant, who was financially well resourced, described having a support network within walking distance with which she could exercise and socialize. She described the tennis club she belonged to as follows:

Probably not far enough away from my house [to facilitate added exercise by walking there]. I can get there in five minutes. It's very close. The library is very close too. The library and tennis club are all in the same complex....And I meet

the fitness group there in the morning and I went there and I enjoyed it.... So I only went to one session, but I did enjoy it and there's another place that I go, where it's very convenient.... [FP3 urban].

Similarly, a male participant who lived in the city core described easy walking access to health care, shops, and fitness facilities. This participant commented on easy access to the many specialists who were involved in the care of his heart health. It is important to note that these examples do not reflect the challenges of people who live in the suburbs of the city and have to travel, fighting heavy traffic, before reaching health care services and facilities.

Access to Roads

In the north, low population density results in distribution of resources across great distances. Participants indicated that they had long distances to travel and faced unpredictable road conditions. A clear representation of the challenges experienced in the north is represented by several participants' photographs of icy roads and snow, and this notable example (Figure 6).

Figure 6. Snow Covered Road



This photograph represents a road within city limits and its physical nature involves connecting places. While a road is a place, it is also a path to places such as health care facilities, shops, malls, and gyms. Its use is often affected by poor weather conditions, especially during the winter when average temperatures are cold, snowfall is heavy, and harsh weather may last for months. Several participants acknowledged the challenges associated with transportation and climate in the north. One participant commented:

“You see it on TV. It snows almost every day and I am not familiar with this car; it's too heavy and I don't know how it behaves in the snow. It makes me nervous” [MP4].

Another account that exemplifies the challenges of a northern climate was described by a participant who found the winter months in Sudbury isolating with snow and poor road conditions keeping her confined at home:

I have to get out today. If I don't I am going to go stir crazy; besides I need to get out...in case we have more snow I need to get some more stuff... I don't mind driving on a day like today but I wouldn't drive in a snow storm...I wouldn't drive on anything icy [FP2].

This illustrates the impact of harsh, winter climates impeding individuals' efforts to traverse to places that support their health. Participants often described needing a vehicle to access shops and health care services and viewed this as a support to their health.

Not only is the road a path connecting places; it is also a means for exercise. The natural environment can be an inexpensive choice for exercise but physical limitations including rugged terrain can make walking in the winter difficult and can act as a deterrent. As one participant suggested: "I am not good at getting out and walking particularly in the winter time" [FP3]. The fear of slipping on ice and falling was described as a deterrent to outdoor activity in the winter by several northern participants. Although harsh road conditions are not unique to the north, the difference lies in the length of time that outdoor activity is constrained by several months of winter weather. Additionally, while road travel may be viewed as a barrier in both the north and the south, its problematic nature may be differently experienced by residents of the two regions because of density and dispersal of populations. For instance, in the north, there is the fear of road conditions because of travel distances, snow, and animal-related traffic accidents, such as collisions with moose. This was evident in a participant's photograph of a highway sign (Figure 7) and discussion about the fear of driving on this northern road, which she explains:

MY travel ones...highway 69 bothers me...when I've kids traveling on that highway and I don't like traveling it myself... I find it stressful you know if someone isn't there when they are supposed to be there like I am vibrating, what is holding you up... that day [my daughter] was coming from [up north] with the two kids and you know it was right at the height of moose season, bear season and... I am sitting watching the clock...yeah that is not good [FP3]

Figure 7. Two separate highways in NO.



In the south, extremely dense population creates rush-hour traffic jams and accidents that cause lengthy delays, even while traveling short distances. However, in good weather conditions, northern participants described highways access positively because it allowed quick connections

to places, especially for those individual living outside of the city core. An illustration is represented in one participant's description:

I find for [an outlying area], we're so close. I mean, I can get to New Sudbury faster than somebody at the south end... and I'm not going over the speed limit, I set my [cruise control...and [driving down the highway] I can get to the Shopping Centre...in ten minutes [FP5]

Several participants in the north took photographs of roads, some inadvertently, reinforcing the necessity of access to a vehicle, and highway travel and distance in NO. The inherent nature of the road and highways presents both challenges and supports to health practices, but was often described as a barrier in NO.

Access to Health Care Services and Professionals

Access to quality health services and health professionals may be dependent on resources available. Northern participants often felt privileged to have access to a primary care physician; yet, they wanted better access to quality health care. This is illustrated in the accounts of several participants who reported poor access to primary health care and specialized medical treatment. One participant described feeling lucky that she had a primary care physician as she explained that her daughter and grandchildren who were moving to Sudbury did not have a doctor:

I am very fortunate that I have got a doctor...my daughter is moving here and does not have a doctor for her children... that is just not healthy that they don't have a family doctor. [FP3]

Another participant described the challenges of living with CHD and limited access to a primary care physician who could monitor her medical care needs: "When all this came about...I had I guess a little bit of a problem because of the doctors are so few and far between" [FP5]. In this case, the participant relied on different physicians at the walk-in- clinic for her prescriptions and described limited follow-up care for her medical problems. An interesting account is represented by another participant who associated emotion with limited physician access. She described desire and distress in her hope for improved health services:

I wish some of our resources were better... it is kind of sad to see the hospital still not finished, the other day I was going into the pharmacy and the walk in clinic was closed because there wasn't a doctor available, it is things like that that you wish were better. [FP3]

Primary care is a vital source of health information, support, and monitoring; it is also necessary for detection and management of risk factors including hypertension and hypercholesterolemia. Participants with access to primary care pointed out the importance of this resource in assisting with risk modification. Similarly, several participants described their challenges in accessing specialized health care services. In one account, a participant explained needing a gastric repair of her oesophagus. She described her difficulties in living with symptoms that could be relieved through a surgical intervention, also indicating that the northern specialist following her care had a long wait list. She explained: "The doctor I have...he's got a year and a half waiting list, and I'm not going to put up with all the symptoms I have" [FP4]. The participant ended the discussion by suggesting she would head south to an urban centre to receive care in a more timely fashion.

Participants also described positive relationships with doctors, who provide valuable information and re-assurance about their health concerns. One male participant described: “since my heart attack, I ask my doctors everything and she has been great...she drew me a picture of the heart and explained everything.” [MP2]. Another participant explains: “[my doctor] did listen and that she did take the time. I was always so comfortable...she was wonderful” [FP5]. Northern participants were confronted by barriers when accessing health care services. However, participants identified primary care providers as a valued resource.

Access to Sufficient Finances

In the north, access to health supports was further challenged by financial constraints. Several of the northern participants spoke of the challenges they faced because of financial difficulty. In particular, three of the northern participants reported low incomes of less than \$19,000 per annum, and described stress associated with lack of material resources. One participant who lived on the outskirts of Sudbury spoke of the worries of being unable to afford a reliable vehicle to travel into the city to access health care, groceries, and other necessities that supported his health. He explained:

I wasn't making enough money. There was [too many low paying jobs] and not enough money. I had to make it week by week...since I was living 20 minutes from the nearest shop or repair shop or trucking centre and my car was almost 16 years old and I never took it to the repair shop in 12 years. I did most of the work myself...so it was too much stress [MP4].

Other participants spoke about loss of employment, associating such periods with stress and depression. A notable illustration is evident in one of participant's photograph of her cheque book. However, the photograph is not presented because the image was unclear. A major factor contributing to this participant's health and well-being was balancing her budget, ensuring she had the finances required to survive from month to month. In this case, she described a time when she was an unemployed single mother taking care of two children. She explained that balancing her cheque book was always stressful because it reminded her of past financial instability:

One thing that REALLY gets me going is balancing my cheque book! I get angry, I get frustrated... I was laid off from one job and I went into a depression. Like, I didn't even know what was happening to me. I just realized that I am in a mess...because I didn't have a job that meant financial instability...and it took quite a while to get back on track. [FP3]

Uncovering the meaning behind this statement illustrated a connection between financial insecurity and its associated psychological stress, which then affects self-care in other ways, including being able to afford a healthy diet and full social participation.

In summary, access to places that support health was affected by the interplay of several contextually embedded factors that are components of the northern experience. Northern participants demonstrated distinct vulnerabilities in relation to efforts to improve and maintain health. These sites of vulnerability involved access to healthy foods and exercise; access to roads and associated climatic challenges, distance factors, and transportation necessities; access to

primary health care; and access to sufficient finances and affordable options for a healthy lifestyle.

DISCUSSION

Canada's commitment to equal opportunity and sense of social responsibility to those who are less fortunate reinforces the principle of access to quality health care for all (Canada Health Act, 1984; Madore & Tiedemann, 2005). Ensuring high quality, affordable, and equitable access to health services is a high priority for Canadians since lack of access to such services negatively impacts health. Thus, over the past 40 years, access to health care services has received attention from the research community and policy makers seeking to improve health outcomes, including health status and morbidity and mortality rates of individuals across the nation (Gulzar, 1999; Panelli, Gallagher & Kearns, 2006; Racher & Vollman, 2002; Ricketts & Goldsmith, 2005; Wilson & Rosenberg, 2002). While a major concern of the health care systems across North America is ensuring equal access to services (Racher & Vollman, 2002; Ricketts & Goldsmith, 2005); in the past, health care policy has been driven by a narrow interpretation of the concept of access that does not embrace context-specific issues that arise in rural and northern places.

The complexity of lifestyle changes extends beyond the individual since efforts to change are "placed" within social and material contexts that actively shape each individual's health and health behaviours. The findings of this study illustrate the meaning of place for individuals living in the northern city of Sudbury in relation to their experiences of heart health. A major challenge was accessing places that support heart health. Limited access to health services (primary health care and preventative support services) can have serious health consequences, including premature cardiovascular morbidity and mortality (Dennis & Pallotta, 2001; Pong et al., 2006). Delayed treatment of health problems often results in increased severity and acuity of health problems, increasing the cost to individuals, families, and the health care system. To address the health inequalities of place, research is required on "places of concern" and "populations of concern" to develop an understanding of the elements underlying these differences (Pong et al., 2006). Rural and northern populations are populations of concern because they are often confronted by the challenge of accessing health care services (Curtis & Jones, 1998; Gulzar, 1999; Pierce, 2007; Racher & Vollman, 2002; Strasser, 2003).

In the north, access barriers such as geographical distance can act as an important deterrent to participation in risk modification programs (Angus et al., 2007; 2009). Rural and northern dwellers face challenges in accessing health care because of increasing age, distance and weather conditions that require a vehicle for transportation (Pierce, 2007). The findings of this study support the idea that a major issue for individuals living in the north is access to supports which can help mitigate cardiovascular risk. Participants indicated that a lack of available health care professionals made it difficult to support their heart health needs. Recent study findings support that most communities in NO lack a supply of health care professionals to provide conventional medicine (Meyer, 2010). However, several factors shaped the ability to access places that support health. Access included places that support emotional well-being and provide resources for managing psychosocial factors such as stress and depression that negatively impact heart health. Findings highlighted that accessing health supports includes physical and material resources, such as having the finances and being able to afford membership at a fitness facility. Access was further connected to the geographical features of place including climate, distance, and transportation and the distribution of physical resources or places that support health. This was particularly relevant for individuals at high risk for CHD,

who reside in NO and have to travel greater distances to access the physical locations that support health.

To most of the public, policy makers, and practitioners, the notion of access can be obscure (Racher & Vollman, 2002). It is complicated by the understanding of place because it is not only about physical places or locations; it is also about how people manage place, navigate through to find place, and the meanings people assign to place. Access then is not only about physical locations such as fitness facilities and exercise centres, but it includes access to the human health resources that are at the cornerstone of our health care system. In particular, the circumstances in which people are situated can act as barriers and/or supports within everyday life (de Certeau, 1984). These circumstances can be social e.g. a person's social position in relation to others they interact with or material e.g. a person's tangible resources they can utilize which together are strongly intertwined and mutually reinforced. Reliance solely on population counts limits access to necessary health services across northern rural areas (DesMeules et al., 2007). There are several factors that need to be considered in discussing access issues: (a) people within place, (b) place and environment, (c) sense of place and social attachment, (d) culture of place, (e) infrastructure of place, and (f) transportation. For instance, an individual's social support network can influence the health resources he or she chooses to access (DesMeules et al., 2007). This discussion then illustrates the complexity of access within the pursuit of a heart healthy lifestyle. Access issues are multidimensional and involve linking the notion of place within patterns of diet, exercise, geography, and emotional well-being.

Implications and Recommendations

This study extends knowledge of the heart health experiences of individuals living in a mid-sized northern city of Ontario. It reinforces that, in the north, communities are not homogenous; rather, they have diverse social, geographic, and place characteristics (Ontario Hospital Association [OHA], 2003) where health needs are different from those in urban areas (Ministerial Advisory Council on Rural Health, 2002). These findings support the idea that northern and rural areas do not have the same range of access to services as their urban counterparts (Swindlehurst, Deaville, Wynn-Jones & Mitchinson, 2005).

Given this diversity, the application of uniform models fails to address the health needs of northern residents where flexibility is required to respond to local needs (OHA, 2003). Although research has illuminated the differences that occur between and among northern, rural, and southern areas, there continues to be a need for specific policies and approaches that reflect health and place as well as access to resources (OHA, 2003). As a result, communities may need to design strategies that meet their unique needs (Romanow, 2002). Additionally, health policy should continue to address access issues of northern and rural communities in the provision and delivery of heart health services. These issues include distance, sparse population patterns, limited infrastructure including transportation and communication, limited health care resources and access to technology, educational preparation for generalist-specialist practice, and recruitment and retention of professionals.

Overall, there is no simple solution to any of the challenges faced by northern, rural, and southern communities (Pong & Russell, 2003). Policies, however, should take into consideration the effect that place has on access to health supports. They should be flexible enough to accommodate the needs of the people and diversity of the places in which they live. Furthermore, research should continue to address information gaps regarding the health status of all residents and the places in which they are situated. Within this context, a research priority may include evaluating the effectiveness of a CHD risk reduction strategy that broadens the individual's

experience of “place” by means preventive counselling via telehealth or the internet (Nolan et al., in press).

Study Limitations

A limitation of the study is that participants may have been highly motivated to participate in risk modification because of their involvement in the larger trial. Participants were recruited who were interested and had the time, resources, and supports necessary to participate in the study. Due to the descriptive nature of the study, results may not be generalizable for all northern or rural populations. It is, therefore, the individual’s responsibility to consider how these findings may be valuable in similar contexts. Replication of the study is recommended.

CONCLUSIONS

This article represents a preliminary step in understanding the implications of access within health and place research in its examination of factors that affect utility and availability of heart health supports. In part, it helps to re-shape our understanding of access and place barriers encountered in the achievement of heart health in one community in NO. Considering that this study took place in a mid-sized northern city where there is, by comparison, reasonable access to resources, the issues that remote areas face may be more complex. Understanding what influences cardiovascular risk modification can be considered place-based, including not only the physical location, but also the concentration of the social and material resources, density of populations, different climates and geographical terrains.

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REFERENCES

- Angus, J., Evans, S., Lapum, J., Rukholm, E., St. Onge, R., & Nolan, R. (2005). “Sneaky disease”: The body and health knowledge for people at risk for coronary heart disease in Ontario, Canada. *Social Science and Medicine*, 60(9), 2117-2128. [[MEDLINE](#)]
- Angus, J., Rukholm, E., St. Onge, R., Michel, I., Nolan, R., Lapum, J., & Evans, S. (2007). “Habitus,” stress and the body: The everyday production of health and cardiovascular risk. *Qualitative Health Research*, 17(8), 1088-1102. [[MEDLINE](#)]
- Angus, J., Rukholm, E., Michel, I., Larocque, S., Seto, L., Lapum, J., Timmermans, K., Chevrier-Lamoureux, R., & Nolan, R. P. (2009). Context and cardiovascular risk modification in two regions of Ontario, Canada: A photo elicitation study. *International Journal of Environmental Research and Public Health*, 6, 2481-2499. [[MEDLINE](#)]
- Canada Health Act. (1984). *Revised statutes of Canada*, 1985, c. C-6.

- Choiniere, R., Lafontaine, P., & Edwards, A.C. (2000). Distribution of cardiovascular disease risk factors by socioeconomic status among Canadian adults. *Canadian Medical Association Journal*, 162, 13-24. [MEDLINE]
- Coburn, D. (2004). Beyond the income inequality hypothesis: Class, neo-liberalism, and health inequalities. *Social Science and Medicine*, 58(1), 41-56. [MEDLINE]
- Curtis, S. & Jones, I.R. (1998). Is there a place for geography in the analysis of health inequality? *Sociology of Health and Illness*, 20(5), 645-672.
- Davey-Smith, G. (1997). Down at heart: The meaning and implications of social inequalities in cardiovascular disease. *Journal of the Royal College of Physicians of London*, 31(4), 414-424. [MEDLINE]
- de Certeau, M. (1984). *The practice of everyday life*. Berkeley, CA, USA: University of California Press.
- Dennis, L.K. & Pallotta, S.L. (2001). Chronic disease in rural health. In S. Loue & B.E. Quill (Eds.), *Handbook of rural health*.(pp. 189-207). New York: Kluwer Academic/Plenum.
- DesMeules, M., Luo, W., Wang, F., & Pong, R.(2007). Rural places: Variations in health. *Health Policy Research Bulletin*, 14, 19-22. Retrieved from <http://www.hc-sc.gc.ca/sr-sr/pubs/hpr-rpms/bull/2007-people-place-gens-lieux/rural-ruraux-eng.php>
- Frohlich, K.L., & Potvin, L. (2008). The inequality paradox: The population approach and vulnerable populations. *American Journal of Public Health*, 98(2), 216-21. [MEDLINE]
- Grundy, S.M., et al. (2000). Prevention conference V: Beyond secondary prevention: Identifying the high-risk patient for primary prevention: Medical office assessment: Writing Group I. *Circulation*, 101, E3-E11. [MEDLINE]
- Gulzar, L. (1999). Access to health care. *Image: Journal of Nursing Scholarship*, 31(1), 13-29. [MEDLINE]
- Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice* (3rd ed.). London: Routledge.
- Heart and Stroke Foundation of Canada. (2003). *The growing burden of heart disease and stroke in Canada*. Ottawa: Heart and Stroke Foundation of Canada. Retrieved from <http://www.cvdinfobase.ca/cvdbook/En/Index.htm>
- Jaglal, S., Bondy, S.J., & Slaughter, P. (1999). Risk factors for cardiovascular disease. In C.D. Naylor & P.M. Slaughter (Eds.), *Cardiovascular health and services in Ontario: An ICES atlas*. Toronto. Retrieved from http://www.ices.on.ca/file/TechMeth_Appendix1.pdf
- King, K.M., & Arthur, H.M. (2003). Coronary heart disease prevention: Views on women's gender-based perceptions and meanings. *Journal of Cardiovascular Nursing*, 18(4), 274-281. [MEDLINE]
- Madore, O., & Tiedemann, M. (2005). *Private health care funding and delivery under the Canada health act*. Ottawa: Library of Parliament. Retrieved from <http://www2.parl.gc.ca/Content/LOP/ResearchPublications/prb0552-e.pdf>
- McNiven, C., & Puderer, H. (2000). *Delineation of Canada's north: An examination of the north-south relationship in Canada*. Ottawa: Statistics Canada. Retrieved from <http://dsp-psd.tpsgc.gc.ca/Collection/Statcan/92F0138M/92F0138MIE2000003.pdf>

- Meyer, S. (2010). A geographic assessment of 'total' health care supply in Ontario: complementary and alternative medicine and conventional medicine. *The Canadian Geographer*, 54(1), 104-122. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0064.2009.00285.x/pdf>
- Ministerial Advisory Council on Rural Health. (2002). Rural health in rural hands: Strategic directions for rural, remote, northern and aboriginal communities. Ottawa: Health Canada. Retrieved from http://www.srpc.ca/PDF/rural_hands.pdf
- Ministry of Northern Development, Mines and Forestry. (2010). About northern Ontario. Retrieved from http://www.mndmf.gov.on.ca/default_e.asp
- Ministry of Northern Development, Mines and Forestry (2009). Northern Ontario overview. Retrieved from http://www.mndmf.gov.on.ca/northern_development/documents/northern_ontario_e.pdf
- Nolan, R.P., Upshur, R.E., Lynn, H., Crichton, T., Rukholm, E., Stewart, D.E., Alter, D.E., Chessex, C., Harvey, P., Grace, S.L., Picard, L., Michelle, I., Angus, J.E., Corace, K., Barry-Bianchi, S., & Chen, M.E. (In press). Therapeutic benefit of preventive telehealth counselling in the community outreach heart health and risk reduction trial: A randomized controlled trial. *American Journal of Cardiology*. [MEDLINE]
- Oliffe, J.L., & Bottorff, J.L. (2007). Further than the eye can see? Photo elicitation and research with men. *Qualitative Health Research*, 17(6), 850-858. [MEDLINE]
- Ontario Hospital Association (2003). Enhancing access to care in rural, remote and northern communities: A rural, remote and northern health issues paper.
- Panelli, R., Gallagher, L., & Kearns, R. (2006). Access to rural health services: Research as community action and policy critique. *Social Science and Medicine*, 62(5), 1103-1114. [MEDLINE]
- Pierce, C. (2007). Distance and access to health care for rural women with heart failure. *Online Journal of Rural Nursing and Health Care*, 7(1), 27-34. Retrieved from <http://www.rno.org/journal/index.php/online-journal/article/viewFile/20/178>
- Pong, R., DesMeules, M., Legace, C., Heng, D., Manuel, D., Pitblado, R., Bollman, R., Guernsey, J., Kazanjian, A., & Koren, I. (2006). *How healthy are rural Canadians? An assessment of their health status and health determinants*. Ottawa: Canadian Institutes for Health Information. Retrieved from http://www.phac-aspc.gc.ca/publicat/rural06/pdf/rural_canadians_2006_report_e.pdf
- Pong, R., & Russell, N. (2003). *A review and synthesis of strategies and policy recommendations on the rural health workforce*. Sudbury, ON: Centre for Rural and Northern Health Research, Laurentian University. Retrieved from http://www.cranhr.ca/pdf/TORC_Ruralhealthworkforcesynthesis-finaldraft-May.pdf
- Potvin, L., Richard, L., & Edwards, A.C. (2000). Knowledge of cardiovascular disease risk factors among the Canadian population: Relationships with indicators of socioeconomic status. *Canadian Medical Association Journal*, 162(9 Suppl), S5-11. [MEDLINE]
- Potvin, L., & Hayes, M.V. (2007). Place and health research in Canada. *Canadian Journal of Public Health*, 98, S6. [MEDLINE]
- Public Health Agency of Canada, (2009). *Tracking heart disease and stroke in Canada*. Ottawa, Canada. Retrieved from <http://www.phac-aspc.gc.ca/publicat/2009/cvd-avc/index-eng.php>

- Racher, F.E., & Vollman, A.R. (2002). Exploring the dimensions of access to health services: Implications for nursing research and practice. *Research and Theory for Nursing Practice, 16*(2), 77-90. [MEDLINE]
- Radley, A., & Taylor, D. (2003). Images of recovery: a photo-elicitation study on the hospital ward. *Qualitative Health Research, 13*(1), 77-99. [MEDLINE]
- Raphael, D. (2001). *Inequality is bad for our hearts: Why low income and social exclusion are major causes of heart disease in Canada*. Toronto, Ontario: North York Heart Health Network. Retrieved from <http://intraspec.ca/InequalityIsBadForOurHearts-2001Report.pdf>
- Ricketts, T.C., & Goldsmith, L.J. (2005). Access in health services research: The battle of the frameworks. *Nursing Outlook, 53*(6), 274-280. [MEDLINE]
- Romanow, R.J. (2002). *Building on values: The future of health care in Canada*. Ottawa: Commission on the Future of Health Care in Canada. Chapter 7 dealing with rural and remote communities. Retrieved from: <http://dsp-psd.pwgsc.gc.ca/Collection/CP32-85-2002E.pdf>
- Sahai, V., Barnett, R., Roy, C., Stalker, S., Chettur, V., & Alidina, S. (2000). A profile of cardiovascular disease in northern Ontario: public health planning implications. *Canadian Journal of Public Health, 91*(6), 435. [MEDLINE]
- Scambler, G. (2001). Critical realism, sociology and health inequalities: social class as a generative mechanism and its media of enactment. *Journal of Critical Realism, 4*(1), 35-42.
- Strasser, R. (2003). Rural health around the world: challenges and solutions. *Family Practice, 20*(4), 457-463. [MEDLINE]
- Sullivan, L., & Gyorf-Dyke, E. (2007). Special issue on place and health. *Canadian Journal of Public Health, 98*, S4.
- Swindlehurst, H.F., Deaville, J.A., Wynn-Jones, J., & Mitchinson, K. (2005). Rural proofing for health: a commentary. *Rural and Remote Health, 59*(2), 411. [MEDLINE]
- Tanuseputro, P., Manuel, D., Leung, M., & Nguyen, K.H.J. (2003). Risk factors for cardiovascular disease in Canada. *Canadian Journal of Cardiology, 19*, 1249-1259.
- Ward, M. (2003). Heart health in northern Ontario. Ward, M. *Heart health in northern Ontario* (Rep. No. Short report #1). Sudbury, ON: Northern Health Information Partnership.
- Wilson, K., & Rosenberg, M.W. (2002). The geographies of crisis: exploring accessibility to health care in Canada. *Canadian Geographer, 46*(3), 223-234.
- Wilson, P.W., D'Agostino, R.B., Levy, D., Belanger, A.M., Silbershatz, H., & Kannel, W.B. (1998). Prediction of coronary heart disease using risk factor categories. *Circulation, 97*, 1837-1847. [MEDLINE]